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Instructions to Authors

Anatomy, an international journal of experimental and clinical anatomy, is the official publication of the Turkish Society of Anatomy and Clinical Anatomy, TSACA. It is a peer-reviewed journal that publishes scientific articles in English. For a manuscript to be published in the journal, it should not be published previously in another journal or as full text in congress books and should be found relevant by the editorial board. Also, manuscripts submitted to Anatomy must not be under consideration by any other journal. Relevant manuscripts undergo conventional peer review procedure (at least three reviewers). For the publication of accepted manuscripts, author(s) should reveal to the Editor-in-Chief any conflict of interest and transfer the copyright to the Turkish Society of Anatomy and Clinical Anatomy, TSACA.

In the Materials and Methods section of the manuscripts where experimental studies on humans are presented, a statement that informed consent was obtained from each volunteer or patient after explanation of the procedures should be included. This section also should contain a statement that the investigation conforms with the principles outlined in the appropriate version of 1964 Declaration of Helsinki. For studies involving animals, all work must have been conducted according to applicable national and international guidelines. Prior approval must have been obtained for all protocols from the relevant author's institutional or other appropriate ethics committee, and the institution name and permit numbers must be provided at submission.

Anatomical terms used should comply with Terminologia Anatomica by FCAT (1998).

No publication cost is charged for the manuscripts but reprints and color printings are at authors' cost.

Preparation of manuscripts

During the preparation of the manuscripts, uniform requirements of the International Committee of Medical Journal Editors, a part of which is stated below, are valid (*see* ICMJE. Uniform requirements for manuscripts submitted to biomedical journals. Updated content is available at www.icmje.org). The manuscript should be typed double-spaced on one side of a 21x 29.7 cm (A4) blank sheet of paper. At the top, bottom and right and left sides of the pages a space of 2.5 cm should be left and all the pages should be numbered except for the title page.

Manuscripts should not exceed 15 pages (except for the title page). They must be accompanied by a cover letter signed by corresponding author and the Conflicts of Interest Disclosure Statement and Copyright Transfer Form signed by all authors. The contents of the manuscript (original articles and articles for Teaching Anatomy category) should include: 1- Title Page, 2- Abstract and Keywords, 3- Introduction, 4- Materials and Methods, 5- Results, 6- Discussion (Conclusion and/or Acknowledgement if necessary), 7- References

Title page

In all manuscripts the title of the manuscript should be written at the top and the full names and surnames and titles of the authors beneath. These should be followed with the affiliation of the author. Manuscripts with long titles are better accompanied underneath by a short version (maximum 80 characters) to be published as running head. In the title page the correspondence address and telephone, fax and e-mail should be written. At the bottom of this page, if present, funding sources supporting the work should be written with full names of all funding organizations and grant numbers. It should also be indicated in a separate line if the study has already been presented in a congress or likewise scientific meeting. Other information such as name and affiliation are not to be indicated in pages other than the title page.

Abstract

Abstract should be written after the title in 100–250 words. In original articles and articles prepared in IMRAD format for Teaching Anatomy category the abstract should be structured under sections Objectives, Methods, Results and Conclusion. Following the abstract at least 3 keywords should be added in alphabetical order separated by semicolumns.

References

Authors should provide direct references to original research sources. References should be numbered consecutively in square brackets, according to the order in which they are first mentioned in the manuscript. They should follow the standards detailed in the NLM's Citing Medicine, 2nd edition (Citing medicine: the NLM style guide for authors, editors, and publishers [Internet]. 2nd edition. Updated content is available at www.ncbi.nlm .nih.gov/books/NBK7256). The names of all contributing authors should be listed, and should be in the order they appear in the original reference. The author is responsible for the accuracy and completeness of references. When necessary, a copy of a referred article can be requested from the author. Journal names should be abbreviated as in *Index Medicus*. Examples of main reference types are shown below:

• **Journal articles:** Author's name(s), article title, journal title (abbreviated), year of publication, volume number, inclusive pages

– *Standard journal article:* Sargon MF, Celik HH, Aksit MD, Karaagaoglu E. Quantitative analysis of myelinated axons of corpus callosum in the human brain. Int J Neurosci 2007;117:749–55.

– *Journal article with indication article published electronically before print:* Sengul G, Fu Y, Yu Y, Paxinos G. Spinal cord projections to the cerebellum in the mouse. Brain Struct Funct Epub 2014 Jul 10. DOI 10.1007/s00429-014-0840-7.

• **Books:** Author's name(s), book title, place of publication, publisher, year of publication, total pages (entire book) or inclusive pages (contribution to a book or chapter in a book)

– *Entire book:*

- *Standard entire book:* Sengul G, Watson C, Tanaka I, Paxinos G. Atlas of the spinal cord of the rat, mouse, marmoset, rhesus and human. San Diego (CA): Academic Press Elsevier; 2013. 360 p.

- *Book with organization as author:* Federative Committee of Anatomical Terminology (FCAT). Terminologia anatomica. Stuttgart: Thieme; 1998. 292 p.

- *Citation to a book on the Internet:* Bergman RA, Afifi AK, Miyauchi R. Illustrated encyclopedia of human anatomic variation. Opus I: muscular system [Internet]. [Revised on March 24, 2015] Available from: http://www.anatomyatlases.org/AnatomicVariants/AnatomyHP.shtml

– *Contribution to a book:*

- *Standard reference to a contributed chapter:* Potten CS, Wilson JW. Development of epithelial stem cell concepts. In: Lanza R, Gearhart J, Blau H, Melton D, Moore M, Pedersen R, Thomson J, West M, editors. Handbook of stem cell. Vol. 2, Adult and fetal. Amsterdam: Elsevier; 2004. p. 1–11.

- *Contributed section with editors:* Johnson D, Ellis H, Collins P, editors. Pectoral girdle and upper limb. In: Standring S, editor. Gray's anatomy: the anatomical basis of clinical practice. 29th ed. Edinburgh (Scotland): Elsevier Churchill Livingstone; 2005. p. 799–942.

– *Chapter in a book:*

- *Standard chapter in a book:* Doyle JR, Botte MJ. Surgical anatomy of the hand and upper extremity. Philadelphia (PA): Lippincott Williams and Wilkins; 2003. Chapter 10, Hand, Part 1, Palmar hand; p. 532–641.

Illustrations and tables

Illustrations and tables should be numbered in different categories in the manuscript and Roman numbers should not to be used in numbering. Legends of the illustrations and tables should be added to the end of the manuscript as a separate page. Attention should be paid to the dimensions of the photographs to be proportional with 10x15 cm. Some abbreviations out of standards can be used in related illustrations and tables. In this case, abbreviation used should be explained in the legend. Figures and tables published previously can only be used when necessary for a comparison and only by giving reference after obtaining permission from the author(s) or the publisher (copyright holder).

Control list

- Length of the manuscript (max. 15 pages)
- Manuscript format (double space; one space before punctuation marks except for apostrophes)
- Title page (author names and affiliations; running head; correspondence)
- Abstract (100–250 words)
- Keywords (at least three)
- References (relevant to *Index Medicus)*
- Illustrations and tables (numbering; legends)
- Conflicts of Interest Disclosure Statement and Copyright Transfer Form
- Cover letter

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19th National Anatomy Congress & 1st International Mediterranean Anatomy Congress

6–9 September 2018, Konya, Turkey

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Editorial

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Welcome Address of the Congress Presidents

Anatomy 2018;12(Suppl 2):Sv

Dear Academicians,

Necmettin Erbakan University and Department of Anatomy, Meram Faculty of Medicine, jointly with The Turkish Society of Anatomy and Clinical Anatomy, invite you to the International Mediterranean Anatomy Congress and to the 19th National Anatomy Congress, which are to be held between 6th and 9th September 2018, in Konya, Turkey.

This year, we are organizing the International Mediterranean Anatomy Congress under the same roof with the 19th National Anatomy Congress. The aim of the congress is to bring scholars from different countries and take our scientific gathering and interaction much further.

We will be very honoured and grateful for your expected participation and valuable contributions.

Presidents of the Congress

Prof. Dr. Mustafa Büyükmumcu, Prof. Dr. Erdoğan Şendemir

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19th National Anatomy Congress & 1st International Mediterranean Anatomy Congress

6–9 September 2018, Konya, Turkey

19. Ulusal Anatomi Kongresi ve Uluslararası Akdeniz Anatomi Kongresi

6–9 Eylül 2018, Konya, Türkiye

Program

6 Eylül 2018 Perşembe

09:0–15:00	**Kurslar / Courses**
14:00	**Kayıt / Registration**
15:00–17:30	**Açılış Programı ve Konferanslar / Opening Program and Conferences (Asım Duman Konferans Salonu)**
	Üniversite Tanıtımı
	Konya Tanıtımı
	Protokol Konuşmaları
	Bio-signal controlled upper limb prosthesis: from design to production Erkan Kaplanoğlu (Konferans)
18:00	**Sergi Açılışı / Exhibition** Bir iki çızıktırma - Medikal illustrasyon Ahmet Sınav
	Sanatomi iconium Hakan Hamdi Çelik
	Anatominin sanatsal yönü Nurcan Sert
	Yansımalar Ersan Perçem
19:00	**Açılış Kokteyli** / Opening Coctail (Akef Havuz Başı / Grup Trio)

7 Eylül 2018 Cuma

Lokman Hekim Salonu

	Oturum Başkanları / Chairmen: Erdoğan Şendemir, Emel Ulupınar
09:00–09:20	General microvasculature of tissues and organs in SEM of vascular casts and experimental application Diogo De Freitas Branco Pais
09:20–09:40	Spiny inverted pyramidal neurons of the mammalian cerebral cortex Joséluis Bueno-López
09:40–10:00	Morphology on the cloud - virtual campus, an integrated didactic platform for biomedical studies Carlo Tacchetti
10:00–10:20	The clinical importance of corona mortis vascular anastomoses in pelvic and acetabular surgery: an orthopaedic surgeon's perspective Mehmet Arazi

10:20–10:35	**Wolters Kluwer Sunum / Presentation (Lokman Hekim)**
10:35–10:45	**Kahve Arası / Coffee Break (P-1–P-80 Arası Poster Sunumu)**
	Oturum Başkanları / Chairmen: Adnan Öztürk, Piraye Kervancıoğlu
10:45–10:55	The effects of growth hormone on motor findings and neuronal morphology in Parkinson model rats Ümit Şehirli
10:55–11:05	3D visualization of the mouse spinal cord cyto-architecture and neurochemical properties following spinal cord injury using CLARITY technique Gülgün Şengül
11:05–11:15	Experimental brain ischemia models in rats Bengi Yeğin
11:15–11:25	The effect of transcutaneous electrician stimulation on the morphology of the posterior root ganglia Hakan Ay
11:25–11:35	Normalized total brain, cortex and white matter volumes shows sex dependent differences between the control subjects and schizophrenics: a brain segmentation study Amani Elfaki
11:35–11:45	Decrease in mesocortical dopaminergic neuron sandfibers is associated with ADHD Ayşegül Güngör Aydın
11:45–11:55	Permanent and temporary occulation model of medial cerebral artery in rats Semih Öz
11:55–12:05	Assesment of double cortin immunoreactivity on postnatal 7th, 14th and 21st days in Wistar albino rats' hippocampi: preliminary study Özlem Tuğçe Kaya
12:05–12:15	The effects of regular swimming exercise and melatonin on the neurons localized in the striatum of Parkinsonian rats Sinem Gergin
12:30–13:15	**Öğle Yemeği / Lunch (Morfoloji Binası)**
13:15–13:30	**ITSN Sunum / Presentation (Lokman Hekim Salonu)**
	Oturum Başkanları / Chairmen: Ahmet Usta, Erdoğan Unur
13:30–13:40	Relationship between the angle of the foot arch and the length of calcaneus and metatarsal bones Bilge İpek Torun
13:40–13:50	Evaluation of joint cartilage in knee joint osteoarthritis and relation with other osteoarthritic changes Elif Peker
13:50-14:00	An anatomical study of normal meniscal roots and their MRI findings Erengül Boduç
14:00–14:10	Evaluation of bone densities of lumbar vertebrae by micro-CT Ferhat Geneci
14:10–14:20	Normal values of several acetabular angles on pelvis radiographs obtained from Konya region İsmail Hakkı Korucu
14:20–14:30	Morphometric evaluation of thoracic and lumbar vertebrae with MDCT in patients with scoliosis Mehmet Cengiz Tatar
14:30–14:40	Radiographic examination of talocrural joint morphometry in individuals with normal joint anatomy Muhammed Bora Uzuner
14:40–14:50	Hemispheric differences in brain diffusion values in 3 Tesla MR Elif Peker
	Kongre Fotoğraf Çekimi / Congress Photo
15:00–18:30	**Şehir Gezisi / City Tour (Kelebekler Vadisi, Sille, Mevlana Müzesi)**
19:00–19:45	**Sema Gösterisi / Whirling Dervishes Ceremony**
20:00	**Akşam Yemeği / Dinner (Lezzan Restaurant)**

7 Eylül 2018 Cuma

Beyhekim Salonu

10:35–10:45	**Kahve Arası / Coffee Break (P-1–P-80 Arası Poster Sunumu / Poster Presentations)**
	Oturum Başkanları / Chairmen: İbrahim Tekdemir, Behice Durgun
10:45–10:55	Morphometric evaluation of vertebrae coccygeae in adult cadavers: a gross-anatomic and micro-CT study Ferhat Geneci
10:55–11:05	Evaluation of location and morphology of the infraorbital foramen in Turkish population: a preliminary study Alper Vatansever
11:05–11:15	Safe surgical pathways multidisiplinary assessment of planning and resection of complex bone tumor using patient specific 3D model Fulya Yaprak
11:15–11:25	The effect of the quadriceps angle (Q angle) on the gait pattern in young adults between the ages of 18–25 Ayşe Zeynep Yılmazer Kayatekin
11:25–11:35	Morphological investigation of sulcus obturatorius and foramen obturatum and clinical evaluation of the potential role of obturator hernia Nazan Güner
11:35–11:45	The relationship between sella turcica bridging and cephalometric parameters in Turkish adolescent and young adults Ahmet Karaman
11:45–11:55	Anatomical features of calcar femorale in healthy individuals Güneş Aytaç
11:55–12:05	Evaluation of postur and flexibility in ballet dancers Hale Öktem
12:05–12:15	Evaluation of cerebellum volume and cerebellar vermis areas on magnetic resonance images by stereological method Begümhan Turhan
12:30–13:30	**Öğle Yemeği / Lunch (Morfoloji Binası)**
	Oturum Başkanları / Chairmen: Muzaffer Sindel, Bayram Ufuk Şakul
13:30–13:50	The face of my death familiar to me: are we ready to die without dying? İbrahim Tekdemir
13:50–14:00	The future of the body donation and using cadavers for medical education in Turkey: assessment and solutions through two donors Esat Adıgüzel
14:00–14:10	Updating body donation forms Ahmet Ertaş
14:10–14:20	How reliable are the cadavers used for educational purposes? Fikri Özdemir
14:20–14:30	Medical students' opinions on the level of anonymity of cadavers: a multicenter survey İlke Ali Gürses
14:30-14:40	Medical education: clinical anatomy and war surgery relationship Hilmi Özden
14:40–14:50	Annual changes in body donatİon applications Ahmet Ertaş
14:50–15:00	How average is the average body donor profile in Turkey? Osman Coşgun
	Kongre Fotoğraf Çekimi / Congress Photo
15:00–18:30	**Şehir Gezisi / City Tour (Kelebekler Vadisi, Sille, Mevlana Müzesi)**
19:00–19:45	**Sema Gösterisi / Whirling Dervishes Ceremony**
20:00	**Akşam Yemeği / Dinner (Lezzan Restaurant)**

7 Eylül 2018 Cuma

İbni Sina Salonu

10:35–10:45	**Kahve Arası / Coffee Break (P-1–P-80 Arası Poster Sunumu / Poster Presentations)**
	Oturum Başkanları / Chairmen: Ali Yılmaz, Senem Erdoğmuş Koç
10:45–10:55	Detailed evaluation of anatomy in computed tomography for the application of lomber transpedicular screw Ahmet Eroğlu
10:55–11:05	Assessment of relationship between obesity and knee joint morphology in healthy women Ömür Karaca Saygılı
11:05–11:15	Regression and correlative analysis study of the graft length for reconstruction of medial patellofemoral ligament Sefa Işıklar
11:15–11:25	Morphology and clinical significance of forefoot Esin Özşahin
11:25–11:35	The effect of cerebral lateralization on body composition and ankle proprioception Furkan Çevirgen
11:35–11:45	Morphometric evaluation of acetabulum Gökçe Bağcı Uzun
11:45–11:55	Quantitative analysis of jugular foramen in human dry skulls Gülden Kayan
11:55–12:05	Sinus occipitalis and fossa Vermiana and their relationship with grooves in the posterior cranial fossa: an anatomical study Selda Yıldız
12:05–12:15	The incidence of inferior vena cava and left renal vein variations in routin abdomen CT Elif Gündoğdu
12:15–12:25	Research on lower limb alignment and association of frontal plane knee (Q angle) alignment in foot posture Özden Bedre
12:30–13:30	**Öğle Yemeği / Lunch (Morfoloji Binası)**
	Oturum Başkanları / Chairmen: Ali Zeybek, Çağatay Barut
13:30–13:40	The effect of metoclopramide on neural tube development at 48 hours chick embryos Abdulkadir Bilir
13:40–13:50	The effect of B_{12} vitamin on rat front (upper) extremity development against nicotine's teratogenic effects on embryonal development Ahmet Payas
13:50–14:00	Curcumin reduces the sterile inflammation markers in oxidative stress induced clone 9 liver cells Erhan Şahin
14:00–14:10	Investigation of the potential protective effects of geraniol on cyclophosphamide-induced hepatotoxicity in rats Halime Tuba Canbaz
14:10–14:20	Experimental genital system torsion and ischemia-reperfusion models in rats Hilal Gören
14:20–14:30	Antioxidant role of curcumin against nicotine's teratogenic effects on embryonic bone development Seher Yılmaz
14:30–14:40	The effects of N-acetylcysteine against ionizing radiation-induced testicular damage Tolga Mercantepe
14:40–14:50	Histological evaluation of the effectiveness of ABS (Ankaferd blood stopper) and PRF (platelet rich fibrin) on the healing of the synthetic bone graft (β-TCP: β-tricalcium phosphate) in rabbit calvaria Nejat Ünlükal
	Kongre Fotoğraf Çekimi / Congress Photo
15:00–18:30	**Şehir Gezisi / City Tour (Kelebekler Vadisi, Sille, Mevlana Müzesi)**
19:00–19:45	**Sema Gösterisi / Whirling Dervishes Ceremony**
20:00	**Akşam Yemeği / Dinner (Lezzan Restaurant)**

7 Eylül 2018 Cuma

Farabi Salonu

10:35–10:45	**Kahve Arası / Coffee Break (P-1–P-80 Arası Poster Sunumu /Poster Presentations)**
	Oturum Başkanları / Chairmen: Ayşin Kale, Z. Aslı İkiz
10:45–10:55	Assessment of tongue, uvula and epiglottis radiological measurements in terms of gender Davut Özbağ
10:55–11:05	Estimating the person-specific location of the mental foramen Serdar Babacan
11:05–11:15	Analysis of average index values of mandible Adem Tokpınar
11:15–11:25	Comparison of chronological age with dental age determined using Demirjian and Willems methods in children living in Konya province Emre Korkut
11:25–11:35	Evaluation of the effect of different voxel resolutions in determination of the fenestration type periodontal defects: an in vitro study Hayriye Çetmili
11:35–11:45	Evaluation of the incisive nerve with cone-beam computerized tomography for dental implant surgery Poyzan Bozkurt
11:45–11:55	Prevalence and distribution of hypodontia Elif Emre
11:55–12:05	Anatomic and clinical assessment of odontoid fractures Hüseyin Özevren
12:05–12:15	Anatomic and histological analysis of chiasma plantare and long flexor tendons of the foot on human fetuses Özlem Elvan
12:30–13:30	**Öğle Yemeği / Lunch (Morfoloji Binası)**
	Oturum Başkanları / Chairmen: Ayhan Cömert, Enis Uluçam
13:30–13:40	Can musculus palmaris longus tendon abscess be associated with carpal tunnel syndrome? Berna Yılmaz
13:40–13:50	An overview of the curvature measurement methods in scoliosis Murat Gölpınar
13:50–14:00	Radiological evaluation of lateral acromion angle, critical shoulder angle, acromion type and acromion index in supraspinatus tendon pathologies Neşe Asal
14:00–14:10	Searching incidence of musculus plantaris tendon in ankle MRI Okan Aslantürk
14:10–14:20	Lomber facet joint tropism research in Turkish population: morphometric study Ahmet Eroğlu
14:20–14:30	Morphometric assessment of the external aperture of carotid canal for lateral surgical approach Orhan Beger
14:30–14:40	A trial of the gender determination using the measurement of the lengths of the phalanges and the proportion of each phalanx to the total length of phalanges on direct hand X-ray films Tanju Özsoy
14:40–14:50	The evaluation of distances among the foramina of the cranial fossae and the midline in high-resolution cranial CT images Ural Verimli
14:50–15:00	Congenital anomalies of the pancreas: Computed tomography findings Cengiz Kadıyoran
	Kongre Fotoğraf Çekimi / Congress Photo
15:00–18:30	**Şehir Gezisi / City Tour (Kelebekler Vadisi, Sille, Mevlana Müzesi)**
19:00–19:45	**Sema Gösterisi / Whirling Dervishes Ceremony**
20:00	**Akşam Yemeği / Dinner (Lezzan Restaurant)**

8 Eylül 2018 Cumartesi

Lokman Hekim Salonu

	Oturum Başkanları / Chairmen: Ferruh Yücel, Nihal Apaydın
09:00–09:15	Anatomy on the crossroads Gordana Teofilovski-Parapid
09:15–09:30	Teaching and learning gross anatomy in a modern curriculum Isabel Stabile
09:30–09:45	Clinical anatomy of the hip joint Ismet Gavrankapetanovic
09:45–10:00	Anatomical-anthropological analysis of human skull gender dimorphism Aida Sarac-Hadzihalilovic
10:00–10:15	Study of the carrying angle in the human elbow joint with correlation to various parameters Ramada Rateb Khasawneh
10:15–10:30	**Prime Picture Sunum / Presentation**
10:30–10:45	**Kahve Arası / Coffee Break (P-81–P-156 Arası Poster Presentations)**
	Oturum Başkanları / Chairmen: Oğuz Taşkınalp, Bünyamin Şahin
10:45–10:55	Kâmus-i Teşrih: an unknown and probably the first Latin-Turkish dictionary of anatomy Ayşegül Fırat
10:55–11:05	Miftâh-ı Teşrih: an unknown and probably the first Ottoman Turkish atlas of anatomy Mustafa Aldur
11:05–11:15	A new method for sectional and radiologic anatomy education: play-dough modelling İlke Ali Gürses
11:15–11:25	Assessment of theses in the field of anatomy between1969–2018 in Turkey İlhan Bahşi
11:25–11:35	From non-cadaver education to tech-advanced anatomy laboratories in historical process Serap Yılmaz
11:35–11:45	Virtual reality technology in anatomy education Yasemin Topuz
11:45–11:55	Tips to increase the acceptance of manuscripts in the field of anatomical sciences submitted to international journals Nihal Apaydın
11:55–12:05	Multiple variations in upper limb of a single cadaver Ayşen Çalıkuşu
12:30-13:30	**Öğle Yemeği / Lunch (Morfoloji Binası)**
	Oturum Başkanları / Chairmen: Yasin Arifoğlu, Ahmet Uzun
13:30–13:50	Symmetry in human motion: the secret behind biomechanical principles Behice Durgun
13:50–14:00	Correlation of static postural control data of patients with ankylosing spondylitis and healthy subjects Menekşe Karahan
14:00–14:10	Comparison of traditional physical therapy and Mulligan mobilization technique in treatment of cervicogenic headache Mine Arğalı Deniz
14:10–14:20	Comparison of gait analyzes of long-term ankylosing spondyitis patients with normal subjects using force platform Muhammed Parlak
14:20–14:30	A comparison of biomechanical features modified Larssen fixed, 10% formalin fixed and fresh frosen cadavers Mustafa Deniz Yörük
14:30–14:40	Comparison of izocinetic strength, balance and walking functions through stroke type in hemiplegic patients Rukiye Çiftçi
14:40–14:50	Evaluation of feet muscle strength, balance and quality of life in person with pes planus Selma Solgun
14:50–15:00	MR images, morphological changes in the frontal cortex of schizophrenia, schizoaffective disorder and psychotic bipolar disorders Nuriye Kurbetli
15:00–15:30	**Kahve Arası / Coffee Break (P-81–P-156 Arası Poster Sunumu / Poster Presentations)**
15:30–17:00	**TAKAD Olağan Genel Kurulu ve Seçim / General Assembly of Turkish Society of Anatomy and Clinical Anatomy**
19:30	**Gala Yemeği / Gala Dinner (Dedeman Hotel)**

8 Eylül 2018 Cumartesi

Beyhekim Salonu

10:30–10:45	**Kahve Arası / Coffee Break (P-81–P-156 Arası Poster Sunumu / Poster Presentations)**
	Oturum Başkanları / Chairmen: Nurettin Oğuz, Mehmet Emirzeoğlu
10:45–10:55	Renal ischemia / reperfusion model in rats Abdullah Ortadeveci
10:55–11:05	Comparison of MDA and GSH in the rat tissues of hypoxia and obesity Meral Dağ
11:05–11:15	The effect of gilaburu (viburnum opulus) juice on experimentally induced kidney stone in rat Ayşe Ömerli
11:15–11:25	Comparison of curcumin and beta-carotene effects ovarian damage caused by cisplatin Ayşe Ceyhan
11:25–11:35	Nifedipine enhances breast cancer cell proliferation and inhibits the apoptotic effect of everolimus through TRPM2 channels Büşra Candan
11:35–11:45	Effects of triclosan on in vitro embryonic rat development Dicle Çayan
11:45–11:55	The effects of moderate and high doses of vitamin A on the placenta of rats: a stereological study Duygu Aslan
11:55–12:05	The protective role of vitamin E against teratogenic effect on nicotine embryonal bone development Hatice Güler
12:05–12:15	The effects of high and moderate doses of vitamin A on the fetal rat kidney: a stereological study Abdullah Ortadeveci
12:30–13:30	**Öğle Yemeği / Lunch (Morfoloji Binası)**
	Oturum Başkanları / Chairmen: Ahmet Sınav, Mustafa Aldur
13:30–13:40	Transoral endoscopic thyroidectomy vestibular aproach (TOETVA): anatomo-histological analaysis Servet Çelik
13:40–13:50	Lunate dislocation and anatomy of the space of Poirier Burcu Erçakmak Güneş
13:50–14:00	The temporofrontal branch of the facial nerve in terms of forehead and eye region aesthetic surgery - an anatomical study İsmail Yağmur Gilan
14:00–14:10	There are relations between the clinical cognitive tests and the volume of the subcortical structures of the brain in the Parkinson's disease patients with mild cognitive impairment: a brain segmentation study Bünyamin Şahin
14:10–14:20	Morphological investigation of cerebral sulci and gyri of human brain cortex Nazan Güner
14:20–14:30	Evaluation of internal organ weights at forensic autopsies Volkan Zeybek
14:30–14:40	Histomorphological comparison of formaldehyde-based fixation with ethanol-based (Finefix®) fixation Edibe Bilişli
14:40–14:50	The middle branches of the facial nerve in terms of facial surgery - an anatomical study İsmail Yağmurhan Gilan
14:50–15:00	Rare liver abnormalities during surgical operation: ectopic liver-clinical experience Mehmet Aykut Yıldırım
15:00–15:30	**Kahve Arası / Coffee Break (P-81–P-156 Arası Poster Sunumu / Poster Presentations)**
15:30–17:00	**TAKAD Olağan Genel Kurulu ve Seçim / General Assembly of Turkish Society of Anatomy and Clinical Anatomy**
19:30	**Gala Yemeği / Gala Dinner (Dedeman Otel)**

8 Eylül 2018 Cumartesi

İbni Sina Salonu

10:30–10:45	**Kahve Kahve Arası / Coffee Break (P-81–P-156 Arası Poster Sunumu / Poster Presentations)**
	Oturum Başkanları / Chairmen: Nadire Ünver Doğan, Okan Bilge
10:45–10:55	Clinical significance of clavicula morphometry Dilara Patat
10:55–11:05	Morphometrical properties of cavum trigeminale Sedat Develi
11:05–11:15	The relationship between digit ratio and age at menarche in female university students Mahinur Ulusoy Karadeniz
11:15–11:25	Examination of the concord between tests used for revealing of m. palmaris longus and m. flexor digitorum superficialis among Turkish population Mehmet Demir
11:25–11:35	Morphometric assessment of important landmarks on skull intended for Vidian nerve surgery Mustafa Deniz Yörük
11:35–11:45	Morphometric features of parietal foramen and its clinical importance Necdet Kocabıyık
11:45–11:55	Evaluation of lower extremity anthropometric measurements with pes planus and healthy subjects aged 11 to 14 years Selma Solgun
11:55–12:05	Incidence of the os incae (Interparietal bone) Kaan Çimen
12:05–12:15	Lesions of lower extremity confused with fractures: anatomical and radiologic evaluation Selma Çalışkan
12:15–12:30	Assessment of the differences in paranasal sinuses and upper airway anatomy in the Anatolian and Cypriot populations by means of tomography Burak Bilecenoğlu
12:30–13:30	**Öğle Yemeği / Lunch (Morfoloji Binası)**
	Oturum Başkanları / Chairmen: Alper Atasever, Hilmi Özden
13:30–13:40	Normal thyroid gland sizes in children in Aydın city: an ultrasonographic study Ayfer Metin Tellioğlu
13:40–13:50	Volumetric analysis of the putamen in Parkinson's disease with ultra-high field magnetic resonance imaging Emrah Altunsoy
13:50–14:00	Examination of the relationship between the liver and spleen volumes by the computed tomography images in healthy subjects using the Cavalieri principle Meltem Açar Güdek
14:00–14:10	Comparison of effectiveness of the calculation of isolated organ volumes with Cavalieri principle by using planimetry and graphical tablets Mert Nahir
14:10–14:20	Evaluation of the volume of brain in epileptic children by stereological method Saliha Seda Adanır
14:20–14:30	Is there a relationship between the number of middle colic artery and transverse colon length? A study of radiological anatomy with 3D CT Sanaz Pashpoor
14:30–14:40	Evaluation of prostatic artery origin with 128 slice computed tomography angiography Sinem Akkaşoğlu
14:40-14:50	Saphenofemoral region major superficial vein variations; evaluated by ultrasonography technique Yunus Yılmazsoy
14:50-15:00	Evaluation of anatomical variations of sinonasal region by three planes of computed tomography images (coronal, axial, sagittal) Adnan Özdemir
15:00–15:30	**Kahve Arası / Coffee Break (P-81–P-156 Arası Poster Sunumu / Poster Presentations)**
15:30–17:00	**TAKAD Olağan Genel Kurulu ve Seçim / General Assembly of Turkish Society of Anatomy and Clinical Anatomy**
19:30	**Gala Yemeği / Gala Dinner (Dedeman Otel)**

8 Eylül 2018 Cumartesi

Farabi Salonu

10:30–10:45	**Kahve Arası / Coffee Break (P-81–P-156 Arası Poster Sunumu / Poster Presentations)**
	Oturum Başkanları / Chairmen: Özdemir Sevinç, M. Haluk Uluutku
10:45–10:55	The morphometric development of fetal cadavers mandible Ahmet Dursun
10:55–11:05	Relationship between forearm and hand anthropometric measurements and hand grip strength Zehra Seznur Kasar
11:05–11:15	Morphology of suboccipital muscles and course of nerves in occipital region Ümmühan Yağmurkaya
11:15–11:25	The effect of gestational diabetes on placental weight in Sudanese Nouh Mohamed Ahmed
11:25–11:35	Quantitative assessment of the growth dynamics of the teres major in human fetuses Orhan Beger
11:35–11:45	Ultrasonographic determination of fetal nasal bone length in pregnancy Raziye Desdicioğlu
11:45–11:55	Knee anatomy researches in 3 years: who, how, about what? Erdi İmre
11:55–12:05	The morphometric analysis of subclavian artery by multidetector computed tomography (MDCT) Kemal Emre Özen
12:05–12:15	Prevalence and clinical significance of cartilago triticea: preliminary report Rabia Koca
12:15–12:30	Superficial and deep facial fat compartments Zehra Seznur Kasar
12:30–13:30	**Öğle Yemeği / Lunch (Morfoloji Binası)**
	Oturum Başkanları / Chairmen: Can Pelin, Esat Adıgüzel
13:30–13:40	Possible teratogenic effect of paracetamol on the development of rat's lower extremity bone İlyas Uçar
13:40–13:50	Hypertyroidism increases TRPC1 activity in the kidney tissues Sedat Kaçar
13:50–14:00	Regorafenib and Paroxetine induces cytosolic calcium accumulation and caspase-dependent apoptosis in human breast cancer cells through TRPV1 channel activation Seda Avnioğlu
14:00–14:10	Value of electron microscopy in diagnosis of renal pathologies Tolga Mercantepe
14:10–14:20	The evaluation of association between obesity and sperm morphological anomalies Merve Solmaz
14:20–14:30	The investigation of the teratogenic effect of gabapentin on the development of rat front (upper) extremity bones and femur Muhammmet Değermenci
14:30–14:40	Effects of diverse environmental conditions on motor skills and cerebellar morphology of rats Birce Erçelen
14:40–14:50	Effect of acrylamide on BEAS-2B normal human lung cells: cytotoxic, oxidative apoptotic and morphometric analysis Sedat Kaçar
15:00–15:30	**Kahve Arası / Coffee Break (P-81–P-156 Arası Poster Sunumu / Poster Presentations)**
15:30–17:00	**TAKAD Olağan Genel Kurulu ve Seçim / General Assembly of Turkish Society of Anatomy and Clinical Anatomy**
19:30	**Gala Yemeği / Gala Dinner (Dedeman Otel)**

9 Eylül 2018 Pazar

Lokman Hekim Salonu

Oturum Başkanları / Chairmen: Mehmet Ali Malas, Ayla Kürkçüoğlu

09:00–09:10	Azygos lobe: a rare anatomic variant Hülya Vatansev
09:10–09:20	A long and thin pathway from larynx to trachea Alper Vatansever
09:20–09:30	Evaluation of the golden ratio in nasal conchae Emine Petekkaya
09:30–09:40	Examination of the levels of structures in the thorax in multidector computerized tomography images Güneş Bolatlı
09:40–09:50	Hyolaryngeal complex anatomy and positional change investigation of multisection computed tomography images Neslihan Altuntaş Yılmaz
09:50–10:00	Branching variations of a popliteal artery using computed tomography angiography: a preliminary report Nihal Gürlek Çelik
10:00–10:10	Evaluation of the relationship between a paranasal sinus anatomic variation of Onodi cell prevalance and sphenoidal sinusitis Pelin Zeynep Bekin Sarıkaya
10:10–10:20	Effectiveness of acupuncture in the case of treatment-resistant trigeminal neuralgia Burak Gülcen
10:20–10:30	Examination of safe zones of facial arteries in surroundings of lower face Meriç Yıldız Yılmaz
10:40–11:00	**Kapanış Töreni / Closing Ceremony (Lokman Hekim Salonu)**

9 Eylül 2018 Pazar

Beyhekim Salonu

Oturum Başkanları / Chairmen: Davut Özbağ, Fatoş Belgin Yıldırım

09:00–09:10	Opinions of surgical branch physicians on anatomy education in residency training period Turgay Karataş
09:10–09:20	A potential source in embalming and dissection education: health tourism Mustafa Canbolat
09:20–09:30	Investigation of the sciatic nerve development using microscopic method in human fetuses Kemal Emre Özen
09:30–09:40	The functional anatomy of the claustrum Mazhar Özkan
09:40–09:50	The comparision of kinesiotaping, dry needling and mobilization techniques in patients with myofascial pain syndrome Şeyma Toy
09:50–10:00	The effect of anatomic localization of appendix vermiformis on acute appendicitis prognosis Turgay Karataş
10:00–10:10	Restoration of detrited or damaged pieces of the dry human bone collection of the Department of Anatomy by synthetic materials Mehmet Tuğrul Yılmaz
10:40–11:00	**Kapanış Töreni / Closing Ceremony (Beyhekim Salonu)**

9 Eylül 2018 Pazar

İbni-Sina Salonu

Oturum Başkanları / Chairmen: Necdet Kocabıyık, Nigar Keleş

09:00–09:10	Anthropometric measurements for the design of seating tools in the amphitheatre and conference rooms Gülden Kayan
09:10–09:20	Medullary cavity's topometry on proximal femur for intramedullary nailing Pelin İsmailoğlu
09:20–09:30	Foot morphometry in human fetal cadavers İdris Deniz
09:30–09:40	Some head anthropometric measurements in children with cerebral palsy Zeynep Akça
09:40–09:50	Comparison of foot base pressure values with baropopometer device in obese and non-obese individuals Ziya Yıldız
09:50–10:00	Head anthropometry and intelligence Mustafa Canbolat
10:00–10:10	Optical coherence tomography analysis of macular retinal and choroidal layers in healthy eyes Nuran Müge Şensoy
10:10–10:20	The determination of gender and body mass index from hand and wrist measurements with artificial neural networks Emre Atay
10:20–10:30	Methodology of preparation 3D skull model for educational purposes in Selçuk University Veterinary Faculty Sadullah Bahar
10:40–11:00	**Kapanış Töreni / Closing Ceremony (Lokman Hekim Salonu)**

9 Eylül 2018 Pazar

Farabi Salonu

Oturum Başkanları / Chairmen: Niyazi Acer, Levent Sarıkçıoğlu

09:00–09:10	Analysis of the corellation between facit fatigue scale scores and thoracal measurements in patients with chronic renal failure patients; a preliminary study results Nihal Sümeyye Ulutaş
09:10–09:20	The effect of necessary surgical intervention in the anatomical region of the acute non-displaced scaphoid fractures applied at Konya Necmettin Erbakan University Meram Medical Faculty between 2012–2018 Numan Atılgan
09:20–09:30	Talus morphometry and morphological features Hamza Kasar
09:30–09:40	Agenesis of the superior cornua of the thyroid cartilage: two autopsy case reports Nadire Ünver Doğan
09:40–09:50	Morphometric measurements of the calcaneus bone and types of talar articular facets Şerife Alpa
09:50–10:00	Estimation of stature from second and fourth digit lengths in young adults Şükrüye Deniz Mutluay
10:00–10:10	Ultrasonographic evaluation of median and ulnar nerve dimensions in achondroplasia and comparison with normal population Serdar Arslan
10:10–10:20	Relationship of adult abdominopelvic surface anatomy to the anatomical planes and lumbar lordosis angle using CT scans Gülay Açar
10:20–10:30	Morphometric measurements of corpus callosum: its relation with sex and age Işık Tuncer
10:30–10:40	Morphometric analysis of internal carotid artery with multidedector computed tomography Ahmet Uğuz
10:40–11:00	**Kapanış Töreni / Closing Ceremony (Lokman Hekim Salonu)**

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Invited Lectures

(I-1 — I-9)

I-1

Anatomical-anthropological analysis of human skull gender dimorphism

Sarac-Hadzihalilovic

Department of Anatomy, Facultry of Medicine, University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Osteology is a subdiscipline of anatomy, anthropology and archeology that deals with macroscopic and microscopic analysis of bone material. The application of osteoscopy and classical morphometry with significant precision we can determine the gender based on the human skull. These methods find their application in several scientific fields ranging from anatomy, history and archeology to demography, forensics and criminology. The direction of development is the application of anthroposcopic and anthropometric knowledge for the purpose of determining the biological profile (in this case gender). In this sense, the application of discriminatory fuctional analyzes is the direction in which we go, along with respecting the population standards, as a indispensable precondition. Furthermore, the implementation of a gender determination model using combined qualitative and quantitative analysis has shown the most effective results. Further development in the 21st century is not questioned. It goes towards the application of geometric morphometry that keeps information about the shape and in this way opens up a whole new field of scientific interest and practical application of the modern software packages in order to make more effective gender determination on the basis of a human skull.

Keywords: skull, osteoscopy, classical morphometry, geometric morphometry

I-2

Morphology on the cloud - virtual campus, an integrated didactic platform for biomedical studies

Anastasi G[1], Milardi D[1], Favaloro A[1], Ceresetti G[2], Corso S[3], Esposito A[4], Gagliano N[5], Martinelli C[6], Vertemati M[7], Zarcone D[8], Govoni P[9], Zicca A[8], Castorina S[10], Caro R[11], Felici M[12], Macchiarelli G[13], Ribatti D[14], Sforza C[15], Maraldi NM[16], Tacchetti C[4]

[1]Department of Biomedical and Odontoiatry Sciences and of Morphological and Functional Imaging, Anatomy Section, University of Messina; [2]IT Unit, Edi. Ermes, Milan, Italy; [3]Department of Oncology, University of Turin and Candiolo Cancer Institute - FPO, IRCCS; [4]Experimental Imaging Centre, IRCCS San Raffaele and University Vita-Salute San Raffaele, Milan, Italy; [5]Department of Biomedical Sciences for Health, Histology Section, University of Milan; [6]Department of Health Sciences, Histology Section, University of Milan; Italy; [7]"L. Sacco" Department of Biomedical and Clinical Sciences, University of Milan; Italy; [8]Department of Experimental Medicine, Anatomy section, University of Genoa; [9]Department of Biomedical, Biotechnological and Translational Sciences (S.Bi.Bi.T), University of Parma, Italy; [10]Department of Biomedical and Biotechnological Sciences, Anatomy Section, University of Catania, Italy; [11]Department of Neuroscience, Anatomy Section, University of Padua; Italy; [12]Department of Biomedicine and Prevention, Histology Section, University of Rome, Italy; [13]Department of Health Sciences, Anatomy Section, University of L'Aquila; [14]Department of Basic Medical Sciences, Neurosciences and Sense Organs, Anatomy Section, University of Bari, Italy; [15]Department of of Biomedical Sciences for Health, Anatomy Section, University of Milan, Italy; [16]Laboratory of Musculoskeletal Cell Biology, IOR-IRCCS, and University of Bologna, Italy

The current Core Curricula of Degree courses in biomedical areas have enormously compressed the time for student for self-learning in morphological subjects. The result is a lower student attitude to integrate the information received by attending lec-

tures and practical sessions, with the indispensable consultation of texts dealing with morphological and 'functional' subjects, a key experience to autonomously logically identify the rational of the morphology/function relationship in the human body, at the macroscopic and microscopic level. These changes are occurring at a time when new medical imaging technologies become more and more informative in both morphological and functional areas. As a consequence, we are modifying our way of organize lessons compared to the generations of colleagues who have preceded us. More and more frontal lessons are organized with a logical morpho-functional approach. For example, the reference to the anatomy of the living, displayed through invasive or not invasive imaging, is added to the necessary and traditional anatomy of the cadaver. The reference to the pathology helps to define how the alteration of morphological integrity is reflected on function, both at the macro and microscopic level, and so on. However, there are no organized easy-to-use guided tours for the student to allow, in the shortest possible time, to 'rationally see' what he has studied, in the various imaging contexts available at the macro- and microscopic level. At the same time, there are no 'data bank' of resources for the preparation of the lessons. That is why we have imagined 'virtual campus' an integrated digital learning platform for self-learning. The platform has been thought and realized thanks to a group of teachers of 'morphologic' and 'functional' biomedical subjects and computer engineers belonging to a publishing house. The presentation will explain the rationale behind the platform, its structure and the educational opportunities offered.

Keywords: curriculum, education, virtual campus

I-2

General microvasculature of tissues and organs in SEM of vascular casts and experimental application

Pais D

Department of Anatomy, NOVA Medical School, NOVA University, Lisbon, Portugal

The knowledge of the microvasculature of organs and tissues is of major importance for the understanding of normal anatomy and physiology, as well as to understand the various pathophysiological processes and to test the outcome of new therapeutic interventions. One of the difficulties that the less experienced researcher often encounters when initiating the study of microvasculature of any organ or tissue is the correct interpretation of the images obtained. This fact is especially relevant in the interpretation of Scanning Electron Microscopic (SEM) images of microvascular corrosion casts in parenchymal organs, rather than organs which are flat or arranged in layers, as can be seen in the study of the microvasculature of the wall of hollow viscera. One of the organs which present a greater challenge to the interpretation of these images is undoubtedly the testis, especially in species such as human, where the fibrous septa are incomplete or non-existent. In this way, the teaching of general microvasculature of organs and tissues in SEM of vascular corrosion casts is essencial in pre and post-graduate medical education, as well as in the preparation for laboratory research, especially in experimental animals. In this presentation we intend to describe: 1) aspects that characterize the appearance, in SEM of microvascular corrosion casts, of arterial, venous and capillary blood microvessels, as well as of lymphatic microvessels which allow their identification; 2) particular findings such as those resulting from the impression of smooth muscle fibers, sphincteric constriction, intra-arterial cushions, arterial vasa-vasorum, filling of interstitial spaces and anastomoses between vessels of the same type or of a different type; 3) technical artifacts that sometimes lead to misinterpretations, such as incomplete filling of vessels, sudden vascular endings and plastic strips ("plastic strips"); 4) the testiculo-epididymal microvascular classification, where SEM images of vascular corrosion casts are compared with those obtained in histology. 5) Examples of image interpretation in various organs and tissues and example of the experimental applied usefulness of the observation of microvascular corrosion casts in Scanning Electron Microscopy.

Keywords: corrosion cats, microvascular, scanning electron microscopy

I-3

Bio-signal controlled upper limb prosthesis: from design to production

Kaplanoğlu E

Department of Mechatronics Engineering, Faculty of Technology, Marmara University, Istanbul, Turkey

The loss of the hand has significant physical and psychological implications and is associated with a loss of function, sensation, and body image. The aim of prosthetic research is to restore these qualities to the furthest extent possible. Recently, bio-signal controlled multigrasp prosthetic hands have begun to emerge. As their name implies, these hands are capable of executing a plurality of grasps. Several factors have contributed to this recent shift in prosthetics technology. At the same time, technological advances in batteries and electronics, as well as advances in miniature motors and manufacturing processes, have enabled the development of such devices. This talk will focus on the recent development of the multigrasp upper limb prosthesis. Specifically, we will describe some important technical steps of the roadmap of prosthetic hand design, such as constraints of design, actuators and control methods.

Keywords: anatomy, design, limb, prosthesis

I-4

Anatomy on the crossroads

Teofilovski-Parapid G

Department of Anatomy, Faculty of Medicine, University of Belgrade, Belgrade, Serbia

More than a quarter of a century ago, Professor Robert Yates, the President of American Association of Anatomists, during an

international morphological congress, addressed his concerns about the future of Anatomy and Anatomists. From my point of view, at that time still young although experienced Professor of Gross Anatomy, coming from the country with almost identical, medical curricula in all medical schools, the speech sounded overstated. Besides, my international teaching experience was limited to one year spent in Medical College of Ohio, Department of Anatomy (Ohio, USA) which founder was Professor Liberato J.A. DiDio. Being very respectful, he managed to provide for Anatomy classes substantial amount of hours. As former surgeon, he was very well aware of the importance of Gross Anatomy in MD's graduate training. Because he had postdoctoral training in experimental morphology, from Messina and Padua Universities (Italy) to Washington, Rockefeller and Harvard University (Seattle, WA / NewYork City, NY / Boston, MA), Professor DiDio was engaged in both, descriptive anatomy and microanatomy research. Today, in some medical schools we have been witnessing among anatomists the wrong believe that work in research at sub-cellular and sub-molecular level, which brings grants, money and promotions, should replace their own studies of human anatomy. That has been noticed even by students. Perhaps, changes in the professional background of young current anatomists (more physics, chemists, molecular biologists) has been contributing to that opinion as well. Certainly, it is easier to be either researcher or teacher, but we should keep pace on both tracks. Our funders, looking for inexpensive modalities in MD education and training, are in favor of modular system, decrease in anatomy contact hours etc. It is advocated by some physicians who are practicing medicine and teaching only certain chapters of anatomy at the same time. Some anatomy societies offered their solution as ASGBI has done. Unfortunately, there is no unique solution for anatomy/anatomists worldwide. Therefore, let we embraced experiences and the best from all Mediterranean countries but of the world as well. That will be for the wellbeing of anatomy, anatomists and our patients at first site.

Keywords: anatomy, current anatomist, teaching, experimental morphology

I-5

Teaching and learning gross anatomy in a modern curriculum

Frcog IS

International School for Foundation Studies, University of Malta, Msida, Malta

The ability of health care practitioners to think "visually" ie, to "see or feel" through layers of skin, fat, fascia, muscles etc. to assess a clinical situation requires an understanding of the underlying anatomy. Furthermore, patients would expect doctors to be able to reason through visualising 3-dimensional anatomical relationships. Paradoxically, our increased diagnostic reliance on imaging (CT and MRI), should be reflected in more emphasis on anatomy today than in the past. Yet in most medical schools the opposite seems to be the case. Traditional anatomy education based on topographical structural anatomy taught by didactic lectures and complete dissection of the body with personal tuition, has in some of our institutions been revolutionized with more reliance on models, imaging, simulation, and the Internet. Nevertheless, the best method to teach anatomy continues to be widely debated. The aim of this presentation is to explore some of the issues surrounding the teaching of gross anatomy in a modern medical curriculum. This includes the learning outcomes of what is taught, the order in which it is taught, the instructional methods used and how students will be assessed.

I-6

Clinical anatomy of the hip joint

Gavrankapetanovic I

General Hospital "Prim. Dr Abdulah Nakaš", Sarajevo, Bosnia and Herzegovina

The coxofemoral joint is a ball-and-socket or spheroidal joint in which the femoral head is largely contained in the acetabulum of the pelvis. Embryologically, 2/5 of the acetabulum are derived from the ilium, 2/5 from the ischi and 1/5th from the pubis. While hyaline cartilage covers the femoral head, on the acetabular side the cartilage is C-shaped leaving in the center the acetabular fossa. The C is completed into an O by the transverse ligament of acetabulum. Peripherally, the acetabular cartilague is extended by the labrum acetabulare, a tough fibrous and fibrocartilaginous rim. The capsule of the coxofemoral joint is thickest in its upper portion where in the erect posture the load is maximal. The longitudinally-arranged external fibers of the capsule are reinforced at specific sites by ligaments that provide stability and limit certain motions of the coxofemoral joint. . The iliofemoral ligament or Y ligament of Bigelow, the most powerful ligament in the human body, reinforces the superior and anterior aspects of the capsule and limits extension. This presentation will emphasize the importance of the hip joint through its clinical anatomy features. Hip, as a joint, thorough its anatomy, blood supply, movements, force-load represents a special entity in the human body.

Keywords: hip joint, coxofemoral joint, anatomy

I-7

Spiny inverted pyramidal neurons of the mammalian cerebral cortex

Bueno-López JL, Reblet C

Department of Neurosciences, School of Medicine and Nursing, The University of the Basque Country (UPV/EHU), Leioa, Spain

Neurons discussed here are also known as 'inverted pyramidal cells'. They are part of the polymorphic neurons of layers V-VI of the mammalian neocortex. They lay mainly in layer VI. They are highly spiny (The dendrites of other cortical inverted cells may be a spiny or poorly covered in spines). To advance knowledge of the organization of the mammalian cerebral cortex. The

attention was focused on the categorization of cell subtypes with long-range axons. Combined use of techniques which are informative, both under light-microscopy and transmission-EM, of the axonal transport, morphology and immunocytochemistry of neurons. Research was performed on rats, rabbits and cats of adult, young, fetal and embryonic ages. Experiments were done according to the EU regulations to minimize suffering caused to the animals. 'Inverted pyramidal cells' did not project to extratelencephalic sites. 'Inverted pyramidal neurons' were found abundant as origin of axons aimed for the contralateral and ipsilateral cortical areas—in particular of axons that furnished the so-called 'backward stream' which begins at high-order associative areas to end in primary sensory areas, and from any of these areas to the claustrum. 'Inverted pyramidal cells' showed evidences of an excitatory nature because their ultrastructure was the typical one of excitatory neurons and they were found to be immuno-negative for the GABA. 'Inverted pyramidal neurons' encompassed at least three distinct cell sub-types in view of specific groupings of dendritic morphology, axon-emergency cell-site, number of buttons synapsing on the axon initial segment and other axon initial segment parameters. By the use of combined morphological and electro-physiological techniques, others have shown that 'inverted pyramidal neurons' have electro-physiological properties that differ from those of other cortical spiny neurons. All of the above support that 'inverted pyramidal neurons' make up a cell type, possibly further subdivided, among neurons in the mammalian cortex.

Keywords: cerebral cortex, mammalian, pyramidal neurons

I-8

The clinical importance of corona mortis vascular anastomoses in pelvic and acetabular surgery: an orthopaedic surgeon's perspective

Arazi M

Dr. Arazi Medical Center, Farabi Hospital Selçuklu, Konya, Turkey

Surgical treatment is the gold standard treatment method for displaced acetabular and pelvic fractures. The most frequently used surgical approaches are the Kocher-Langenbeck and ilioinguinal approaches. In the last few decades, the anterior surgical approaches such as anterior intra-pelvic (AIP) and pararectus have become popular as a relatively less invasive for complex fractures. In the AIP, pararectus and ilioinguinal approaches, vascular anastomoses which provide the connection between the external and internal iliac vascular system on the posterior side of the superior pubic ramus, may be the cause of significant bleeding. These vessels, which are known as the corona mortis vascular anastomoses (CMVA), must be located during surgical exposure and appropriately tied or cauterized. First described by Albrecht von Haller (1708–1777), various studies have been conducted on the frequency of observation of these vessels. The anatomic variations and structural properties are different in size and origin. The rate of frequency of observation has been reported as ranging from 1% to 100%. As a conclusion the recent reports showed the frequency of CMVA is very high than previously reported in the English literature. Therefore, orthopedic surgeons should be aware about CMVA while doing the anterior pelvic approaches.

Keywords: acetabulum, anastomosis, corona mortis, surgery

I-9

Study of the carrying angle in the human elbow joint with correlation to various parameters

Khasawneh R

Department of Anatomy, Faculty of Medicine, Yarmouk University, Irbid, Jordan

The carrying angle is defined as the angle made by the long axes of the arm and forearm in the coronal plane when the forearm is fully extended and supinated. This angle is important in the management of fractures and surgeries that occur around the elbow joint. The present study aimed to investigate the carrying angle variations in a Jordanian population with respect to several body parameters including age, sex, height, weight, and dominant side. The study included students and employees from the Jordan University of Science and Technology and younger students from elementary public schools in Jordan. The supplementary carrying angles (SCAs) of these volunteers were measured using a universal manual goniometer. The results indicate that SCA increased significantly after 10 years of age. The SCA was greater in Jordanian women than in the men. However, no variation in SCA was found with respect to height and weight in the Jordanians. Furthermore, the SCA was significantly greater in the dominant side. In conclusion, age, sex, and handedness were important factors that influenced the carrying angle in our Jordanian study samples. However, height and weight did not seem to have any influence on the values in our study.

Keywords: elbow, joint, supplementary carrying angle

Oral Presentations

(O-1 — O-176)

O-1

The effects of growth hormone on motor findings and neuronal morphology in Parkinson model rats

Kirazlı Ö[1], Arman A[2], Özkan M[1], Gülhan R[3], Şehirli ÜS[1]

[1]Department of Anatomy, Faculty of Medicine, Marmara University, Istanbul, Turkey; [2]Department of Medical Genetics, Faculty of Medicine, Marmara University, Istanbul, Turkey; [3]Department of Pharmacology, Faculty of Medicine, Marmara University, Istanbul, Turkey

Objective: Parkinson's disease is a neurodegenerative disease characterized by the degeneration of dopaminergic neurons in substantia nigra (SN). Growth hormone (GH) is a hormone that plays a role in the development of important functions in the control of brain development. There are studies showing that BH administration may be associated with recovery of neuronal functions after brain injury. Dendritic spines increases the surface area and causes the communication between all stimulating cells in the brain. There is a connection between the structural properties and functions of dendritic spines. This study aims to investigate the effect of GH therapy on motor function and neuronal morphology for 3 months.

Methods: Sprague Dawley rats; treatment group (PD+GH) (n=6) and sham (PD+ Saline) (n=6) were injected with 4 µl 6-OHDA solution (Bregma AP: -2.1 mM, Lat: 2.0 mm and VL: -7.8 mm) stereotaxically. Following the injection GH and saline (0.15 mg / kg / day, s.c.) is administered daily. Rotation preferences and lesion grade are evaluated according to the rotation test. Golgi (FD Rapid Kit) and tyrosine hydroxylase (TH) staining procedures are applied to sections of the striatum and substantia nigra (40 µm). Golgi staining was evaluated using Neurolucida 360 (v2018).

Results: According the results of the rotation, the number of rotations in BH treatment group was significantly decreased (p=0.0112). No significant difference was observed between the groups in SN and striatum in TH staining. Thin type dendritic spine density is significantly increased in the treatment group, which indicates restoration of neuron morphology.

Conclusion: Long term GH administration has been shown to have positive effects on motor function and neuronal morphology

Keywords: Parkinson's disease, growth hormone, dendritic spine

O-2

3D visualization of the mouse spinal cord cyto-architecture and neurochemical properties following spinal cord injury using CLARITY technique

Şengül G[1], Keser A[2], Balkan B[2], Dağcı T [2], Ertürk M[1], Özkut M[3], İlhan P[4], Kayhan B[4], Ersoy F[5], Sokullu E[5]

[1]Department of Anatomy, School of Medicine, Ege University, Izmir, Turkey; [2]Department Physiology, Ege University, School of Medicine, of Bioengineering, Ege University, Faculty of Engineering, Izmir, Turkey; [3]Department of Histology and Embryology, Yozgat Bozok University, Yozgat, Turkey; [4]Department of Neuroscience, Ege University, Institute of Health Sciences, Izmir, Turkey; [5]Department of Bioengineering, Faculty of Engineering and Architecture, Izmir Katip Çelebi University, Izmir, Turkey

Objective: In this study, we aimed to investigate proprio spinal neurons, their excitatatory and inhibitory neurochemical properties, and glial cells using the 3D visualization technique CLARITY.

Methods: Spinal cord injury (SCI) was performed on 126 adult male C57BL/6J mice (n=6 for each group) with a hemisection at T8-T9 vertebrae level, and were perfused with a hydrogel solution 1, 7, 14, 28, 56 and 72 days after SCI. For each mouse, two pieces of spinal cord tissue, proximal and distal to the injury, were cleared using the standard CLARITY protocol described by Chung et al. (2013). For each mouse, GFAP-NeuN or glutamate-GABA immunofluorescent stainings were used and spinal cord tissues were imaged under confocal microscopy.

Results: Following SCI, glial cells increased in number significantly distal to the lesion site, while there was no change in the region proximal to injury. The number of glutamatergic neurons increased significantly starting from 28. day injury group, and this increase continued until day 72 following SCI. The number of GABA immuno eactive neurons did not change following SCI. The number of neurons decreased significantly in day 72 and day 56 SCI groups compared today 1, 7, 14 and 28, indicating the increasing neuronal loss with time.

Conclusion: The findings of this study also show that CLARITY has proven to be a useful technique in SCI research.

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Keywords: CLARITY, propriospinal pathways, spinal cord injury, 3D visualization

O-3

Experimental brain ischemia models in rats

Yeğin B[1], Öz S[2], Özden H[1]

[1]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey; [2]Health Services Vocational School, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: The most important factor in maintaining the metabolic functions of the brain is the cerebral blood flow.

Cerebral ischemia occurs as a result of decreased or cut off blood flow to the brain. Cerebral ischemia may occur in certain areas of the brain (focal ischemia) or in the entire brain (global ischemia). It is the third cause of death after cardiovascular diseases and cancer, and the most important cause of serious physical injuries in Western countries. In particular, it is a medicosocial problem that has become increasingly important with the prolongation of the lifespan. Cerebral ischemia is reversible or irreversible in neurons in the affected area, and subsequent damage to the free radicals can be further increased if reperfusion occurs. While many factors are considered in the pathophysiology of neuronal destruction in ischemia and reperfusion, the mechanisms by which free radicals are formed are accepted. As our knowledge about pathophysiology increases, new treatment strategies and Methodss are being developed. The first question of the investigator should be about the type of animal experiment chosen. The laboratory facilities to consider and the model it will create. The model to be created should be a method that can reach early results. It is a time-consuming process to learn both the animal model and its practical application. Beginning experiments without making the technique perfect can lead to misleading results.

Methods: Temporary or permanent focal and global cerebral ischemia models are used to create brain ischemia. These models include middle cerebral artery occlusion, injection of carbon microsphere into carotid internal, thrombocyte injection into common carotid artery, cardiac arrest and resuscitation model and single or double-sided common carotid artery occlusion. The single main arterial occlusion is one of the most common Methodss. It creates a model that resembles a thunderstorm coming from a waterfall, and it is preferred for this reason.

Results: Transient global ischemia models result in selective neuronal damage. While the focal ischemic model is an infarction in the occluded artery perfusion area, short-time global ischemia affects the common brain areas.

Conclusion: Cerebral ischemia is the result of complex molecular reactions that take hours and days. This affects how long ischemia continues.

Keywords: brain, commun carotid artery, ischemia-reperfusion

O-4

The effect of transcutaneous electrical stimulation on the morphology of the posterior root ganglia

Ay H[1], Arslan A[2]

[1]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey; [2]Department of Physical Therapy and Rehabilitation, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Transcutaneous electrical nerve stimulation (TENS) is a regularly preferred physical method, mostly in chronic and post-operative painmanagement. While TENS iscommonly used in pain management, the mechanism of its action is still not fully understood. Moreover, inadequate morphological studies are available to shed light on this topic. The aim of this study was to evaluate the possible morphological effects of TENS on the dorsal root ganglion (DRG) using stereological Methodss.

Methods: Rats were allocated into 3 groups. Electrodes were attached to the lumbar region [(-) right and (+) left] for 20 minutes a day for 15 days. One group was exposed to conventional and the other group to burst TENS. No electrical impulses were administered to the controls. One week after the application, DRG's of L4 and L5 segments were removed. Ganglion volumes and neuron numbers were estimated using stereological methods. Data were assessed in terms of groups, polarization, and sex.

Results: Data revealed, that the DRG volumes of the conventional TENS group were greater than the control group. Particularly male DRG volumes of the conventional TENS group was higher than controls. In terms of neuronal numbers, only the neuron number of the conventional TENS group was significantly higher than controls.

Conclusion: In conclusion, we assume that particularly conventional TENS inhibits the decrease of the posterior root ganglion volume by reducing cell death. This inhibition is more noticeable in the male gender. Our observations indicate that the polarity of the TENS electrodes has no effect on the morphology of the DRG.

Keywords: TENS, dorsal root ganglion, stereology

O-5

Normalized total brain, cortex and white matter volumes shows sex dependent differences between the control subjects and schizophrenics: a brain segmentation study

Şahin B[1], Elfaki AA[2], Nahir M

[1]Department of Anatomy, Faculty of Medicine, Karabük University, Karabük, Turkey; [2]Department of Anatomy, Faculty of Medicine, National University, Khartoum, Sudan; [3]Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey

Objective: The size of the brain varies depending on the body size of the normal subjects. Meanwhile, the size of the brain decreases in the schizophrenics. However, only volume comparison may not give realistic results unless they are normalized. In the present study, we compared the normalized volume data between the controls and schizophrenics.

Methods: 88 controls (37 females, 51 males) and 57 schizophrenic patients included to the study. Structural magnetic resonance imaging was performed and the DICOM images were analyzed using the Free Surfer which is an automatic brain segmentation software. The total volumes of brain, cortex and whitematter divided to the estimated total intracranial volume for the normalization of the data and results compared between the groups.

Results: The normalized total brain fraction was smaller in schizophrenic females (72.86%) than that of control females (75.73%), but there was no difference for the normalized total brain fraction between the schizophrenic males (72.89%) and control males (74.17%, p>0.05). The normalized cortical volume fraction was smaller in schizophrenics both for females and males (28.52% and 28,77%) that of the control females and males (29.97%, 29.87%). The normalized white matter volume fraction was smaller in schizophrenic females (30.26%) than that of control females (31.47%), but there was no difference for the normalized total brain fraction between the schizophrenic males (29.50%) and control males (30.32%, p>0.05).

Conclusion: The normalized total brain size was smaller in the schizophrenics in both sexes. However, the normalized cortical and white matter sizes were only smaller in females between groups. Therefore, there are sex dependent differences.

Keywords: Schizophrenics, normalized volume, sex differences, magnetic resonance imaging, brain segmentation

O-6

Decrease in mesocortical dopaminergic neurons and fibers is associated with ADHD

Güngör Aydın A[1], Adıgüzel E[1], Erişir A[2]

[1]Department of Anatomy, Faculty of Medicine, Pamukkale University, Denizli; Turkey; [2]Department of Psychology, Faculty of Medicine, University of Virginia, Charlottesville, USA

Objective: Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterized with attention deficit, locomotor hyperactivity and impulsivity. Although no single hypothesis is accepted in the etiology of ADHD, research suggests that all symptoms in ADHD are resulted from the dysfunction of different synaptic circuits in the prefrontal cortex. Based on the hypothesis that this dysfunction is due to the reduction of dopaminergic neurons and fibers, this study aims to investigate whether there is a decrease in neuron and fiber density of the dopaminergic mesocortical pathway.

Methods: Five SHR juvenile male rats as animal models of ADHD and three WKY juvenile male rats as control were used in this study. TH immunohistochemistry was used to identify dopaminergic neurons in VTA and dopaminergic fibers in mPFC, dopamine beta hydroxylase (DBH) immunohistochemistry was used to identify noradrenergic fibers. Quantification of density of TH-immunolabeled (TH-positive) DAergic fibers was performed and percentage of TH (+) Daergic fibers in the PrL subregion of mPFC was evaluated. We also quantified the TH (+) DAergic neurons density in the VTA. Data were analyzed with independent sample t test and Mann Whitney U test.

Results: We observed statistically significant decreasing TH (+) neurons in the VTA rats (p=0.04) and TH (+) fibers in the mPFC (p=0.02) of the SHRs compared to the WKY. There was no significant difference in the percentage of TH positive dopaminergic fibers in mPFC between WKY and SHR (p=0.7).

Conclusion: There was a decrease in mesocortical dopaminergic neurons and fibers in juvenile SHRs used as an animal model of ADHD. We observed that the percentage of TH (+) dopaminergic fibers in mPFC did not change. These findings indicate that noradrenergic fibers as well as dopaminergic fibers decrease in ADHD.

This study was supported by TUBITAK (2214/A) international doctoral research fellowship programme.

Keywords: attention deficit hyperactivity disorder, mesocortical pathway, dopamine, prefrontal cortex, ventral tegmental area

O-7

Permanent and temporary occulation model of middle cerebral artery in rats

Öz S, Yeğin B, Durmaz R, Özden H

[1]Department of Anatomy, ESOGU Faculty of Medicine, Eskişehir, Turkey;[2] Department of Brain, ESOGU Faculty of Medicine, Eskişehir, Turkey

Objective: Every year, stroke occurs in many people, and stroke is the third most important cause of deaths. Cerebral ischemia is beginning to cause a number of cellular and molecular events leading to cell death and tissue infarction. Cells in the core region, where cerebral ischemia is the largest, are permanently injured for several minutes. However, the presence of residual blood flow in the periphery of the ischemic region, which maintains collaterals, preserves the morphological and biochemical integrity of neurons for a short time. Neurons in ischemic brain tissue of medium or mild degree maintain their structural integrity during the acute phase. This area is called penumbra. Penumbra is not an anatomical area, but a dynamic process in which the ischemic area - depending on the severity and duration of the isthmus - progresses to the infarct. In this model, rats develop the use of neuroprotective agents in the unilateral middle cerebral artery to prevent hemiplegia, which results in permanent or transient ischemia in the cerebral environment.

Methods: After clearing the temporal region in the rats, the head skin is cut in the transverse direction. After the tips of the head skin are extended with implants, the temporal bone is carefully opened with the arcus mandible. In the meantime, try to keep the bone cold with salt water. After obtaining enough weight in the bone, the temporal bone is separated from the brain tissue with the help of a crow-tipped penis. When the bone is opened middle cerebral artery that is exposed temporarily from the top of the diaphragm, transiently cramped with microspheres or suture temporarily. Or permanent ischemia is permanently applied to help the bipolar.

Results: The infarct and penumbra areas that are found in the cerebrum can be evaluated macroscopically and microscopically. Likewise, Penumbra is potentially salvageable through the use of neuroprotective agents. The time interval is limited to

2–3 hours in both experimental and clinical studies. Ischemic studies of middle cerebral artery are an ideal model for the identification of neurological deficits.

Conclusion: Ischemic studies are an ideal model for the identification of neurological deficits.

Keywords: middle cerebral artery, ischemia, infarct, penumbra

O-8

Assesment of doublecortin immunoreactivity on postnatal 7th, 14th and 21st days in hippocampi of Wistar albino rats: a preliminary study

Kaya ÖT[1], Yıldız SD[2], Kandemir C[1], Şehirli ÜS[2], Sırvancı S[1]

[1]*Department of Histology and Embryology, Faculty of Medicine, Marmara University, Istanbul, Turkey;* [2]*Department of Anatomy, Faculty of Medicine, Marmara University, Istanbul, Turkey*

Objective: The formation of functional neurons from progenitor cells, which is named neurogenesis, starts at the embryonic period and continues during lifetime in hippocampal dentate gyrus and subventricular zone of the lateral ventricle in adult brain.

Methods: In the present study, we aimed to investigate developmental process of neurogenesis in the hippocampus of Wistar albino rats. For this purpose, brains were obtained from 7-, 14-, and 21-day-old male Wistar rats by intracardiac perfusion fixation with 4% paraformaldehyde and processed for immunohistochemical and immunoflorescence assessments. 5 µm-thick paraffin sections were labelled with anti-doublecortin (anti-DCX) antibody, as a marker of newly born neuroblasts, to determine neurogenesis. For light microscopic imaging, 3.3'-diaminobenzidine was used as a chromogen, whereas DyLight-550 conjugated secondary antibody was used for flourescence microscopical imaging. Stained sections were examined by a brightfield and flourescence microscope attached to a CCD camera.

Results: DCX immunoreactive cells were dispersed throughout hippocampus in 7-day-old group. However, in 14- and 21-day-old groups, DCX immunoreactive cells were observed only in the hippocampal dentate gyrus in sections labelled both with the two different types of staining Methodss. In 21 day-old group DCX immunoreactive cells were seen to localized especially in subgranular zone of dentate gyrus which is similar to anatomical structure of adult rats.

Conclusion: According to the data from this study, DCX immunoreactive cells may be localized in different parts of the dentate gyrus during developmental process. Further studies are needed in order to understand the mechanism by which the cells at the different levels of the granular layer in 7-day-old rats end up to be localized at the subgranular layer in later stages of development.

Keywords: neurogenesis, doublecortin, hippocampus

O-9

Relationship between the angle of the foot arch and the length of calcaneus and metatarsal bones

Torun Bİ[1]

[1]*Department of Anatomy, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey*

Objective: One of the most important and highly variable characteristics of the human foot is its medial longitudinal arch which provides necessary shock absorption for the foot during activity. The aim of this study was to investigate the relationship between the angle of the medial longitudinal arch and the length of the calcaneus and metatarsal bones.

Methodss: 156 (78 right and 78 left sides) weight bearing lateral X-ray images of 78 patients (16 female, 62 male) aged between 18–75 (m: 18–52, f: 18–75) were evaluated. Images of the patients aged under 18 or with any sign of trauma, surgery or structural disorders were excluded. The length of the 1st and the 5th metatarsal bones and calcaneus and the angle of the medial longitudinal arch (MLA) and calcaneal inclination angle (CIA) were measured on the X-ray images. The results were evaluated statistically with IBM SPSS version 20 software.

Results: The length of the 1st metatarsal bone was significantly different between sides while of the 5th metatarsal bone and the calcaneus were not. There found no relationship between MLA and the length of the measured metatarsal bones and calcaneus but there was a significant relationship between MLA and CIA ($p<0.01$). There was a significant relationship between CIA and the length of the 5th metatarsal bone ($p<0.05$). The angles did not statistically differ between genders while the length of the bones did ($p<0.01$).

Conclusion: There was no relationship between MLA and the length of the tarsal and metatarsal bones but there was a significant relationship between MLA and CIA.

Keywords: medial longitudinal arch, angle, metatarsal bone, calcaneus

O-10

Evaluation of joint cartilage in knee joint osteoarthritis and relation with other osteoarthritic changes

Peker E[1], Akkaya Z[1], Şahin G[1]

[1]*Department of Radiology, Faculty of Medicine, Ankara University, Ankara, Turkey*

Objective: Osteoarthritis (OA) is a disease that affects mainly adults over the age of 50, often involving the knee joint. The main finding of OA is cartilage degeneration. Secondary changes can be seen in cartilage degeneration in neighboring bones. To assess the relationship between cartilage lesions and the other components of the knee by using a scoring system called "Whole Organ Magnetic Resonance Imaging Score" with MR in the patients with OA.

Methods: Fifty-three patients with symptomatic OA of the knee were recruited from the rheumatology clinic. MRI studies of the knees were acquired with a 1.5 Tesla whole-body scanner using a commercial circumferential knee coil. Taking anantomical landmarks, the knee joints were evaluated in 15 different subregions and findings were scored for each region in fully extended position. Images were scored with respect to 9 independent articular features: cartilage signal and morphology, subarticular bone marrow abnormality, subarticular cysts, subarticular bone attrition, marginal osteophytes, medial and lateral meniscal integrity, anterior and posterior cruciate ligament integrity, medial and lateral collateral ligament integrity, synovitis and effusion and loose bodies. The final scores were tabulated as independent values for each feature in each of the three compartments of the knee, cumulative surface (cartilage, marrow abnormality, subarticular cysts, bone attrition, osteophytes) features cores for each compartment, cumulative scores for each feature through out the knee, and a total combined score for the entire knee.

Results: Eighty-five percent of knees showed cartilage abnormalities. This was most frequent in the patello femoral joint, but involvement of the lateral femorotibial joint was the least common.

Conclusion: Among many of the individual features, particularly cartilage, bone cysts, bone attrition, osteophyte, effusion and meniscus were relatively strongly associated. Osseous, sinovial, meniscal and ligamentous pathologies may associate cartilage defects.

Keywords: cartilage, joint, MRI, osteoarthritis

O-11

An anatomical study of normal meniscal roots and their MRI findings

Boduç E[1], Aydın Kabakçı AD[2], Akın D[2], Büyükmumcu M[2], Poyraz N[3]

[1]Department of Anatomy, Faculty of Medicine, Kafkas University, Kars, Turkey; [2]Department of Anatomy, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [3]Department of Radiology, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: The meniscal roots (horns) are very important to sustain normal positions and biomechanical functions of menisci. Meniscal horn tears (MHT) can affect the ability of menisci to eliminate loads through hoop stresses and result in meniscal extraction and increased risk of joint degeneration. The purpose of this study is to determine normal anatomic features of the meniscal horns in the knee specimens of MRI images.

Methods: In this study 198 knees were examined using MRI. All patients were studied in sagittal and coronal planes using multi-slice, spin echo and fasts can techniques. The anterior and posterior horns and the midbody of the menisci were examined for the following parameters: height of the anterior (HAHL) and posterior (HPHL) horns of the lateral meniscus on the sagittal plane, height of the anterior (HAHM) and posterior (HPHM) horns of the medial meniscus on the sagittal plane, width of the anterior horn of the lateral (WAHL) and medial (WAHM) menisci on the coronal plane, height of the lateral (HLM) and medial (HMM) menisci at the mid-portion of a meniscal body on the coronal plane, width of the lateral (WLM) and medial (WMM) menisci at the mid-portion of a meniscal body on the coronal plane.

Results: The average of the parameters were measured as follows: HAHL: 4.47±1.02, HPHL: 5.72±1.14, HAHM: 14.15± 4.07, HPHM: 5.22±1.22, WAHL: 6.44±1.29, WAHM: 7.83± 1.72, HLM: 6.67±1.65, HMM: 5.67±1.15, WLM: 9.73±2.11, WMM: 9.69±3.23. In all patients, the number of healty and teraed menisci were 100 and 98, respectively. Therefore, the measurements were performed on 100 menisci.These were from 63 males and 37 females. Among the healty knees, 64 were on the right side and 36 on the left side.

Discussion: The meniscal roots are essential to sustain the normal positions and functions of menisci, and the normal anatomy of meniscal roots is of great importance for radiologists and orthopedic surgeons. The significance of this study is not only its support to a better comprehension of normal meniscal roots anatomy, but also its implications for allograft meniscal transplantation, meniscal repairs and cruciate ligaments reconstructions. The size and routes of four meniscal horns enrolled by this study will be useful anatomic references for normal meniscal roots.

Keywords: meniscus, MRI, meniscal tears, joint degeneration

O-12

Evaluation of bone densities of lumbar vertebrae by micro-CT

Geneci F[1], Ocak M[2], Uzuner MB[3], Bilecenoğlu B[2]

[1]Department of Anatomy, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey; [2]Faculty of Dentistry, Ankara University, Ankara, Turkey; [3]Department of Anatomy, Faculty of Medicine, Kafkas University, Kars, Turkey

Objective: Vertebrae have a limiting layer composed of compact bone tissue at different thicknesses in the outer parts, which is called the substantia compacta. Inside, there is a weave structure composed of fine bone trabeculae, which is called the substantia spongiosa. Outside of the vertebrae are protrusions (apopysis) for tendons and ligaments. In general, bones are in a continuous process of transformation called remodeling. This adaptation involves, among other things, regeneration of the bone matrix with respect to increased or decreased biomechanical loads. The tensile force is formed by the muscle effect and the lever formed in the bone by means of the lever arm. Complaints about vertebrae are most commonly seen in the waist region, as body weight is transmitted to the waist region in great measure and activity in this region is high. The aim of this study was to contribute to the literature on the bone den-

sities of the lumbar vertebrae, the most active and clinically important region of columna vertebralis.

Methods: In this study, 14 lumbal vertebrae of Kars Kafkas University School of Medicine Anatomy Department and Anatomy Department of Ankara University School of Dentistry were used. Lumbal vertebrae were scanned with a Micro CT device at the Department of Anatomy of the Faculty of Dentistry of the University of Ankara and the obtained images were processed using the software of the same device. With this programs were measured corpusvertebra, arcus vertebrae, and pedunculus arcus vertebrae tissue volume, bone volume, and bone volume to tissue volume.

Results: As a result of measurements, th eratio of bone volume to tissue volume was found to be 32.886% in corpus vertebrae, 76.16% in arcus vertebrae and 69.69% in pedunculus arcus vertebrae.

Conclusion: As a result of the measurements made, it was seen that the ratio of bone volume to tissue volume was highest in arcus vertebrae exposed to muscle force and tensile force. Generally, this ratio is found at the lowest level in the corpus vertebrae where the pressure force acts. In the pediculus arcus vertebrae connecting the arcus vertebrae and the corpusv ertebrae, the bone volume was found to be lower than that of the arcus vertebrae, with a high ratio of tissue volume.

Keywords: lumbar vertebrae, bone density, micro CT

O-13

Normal values of several acetabular angles on pelvis radiographs obtained from Konya region

Korucu İH

Department of Orthopedy and Travmatology, Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: To determine the normal values of several radiographic acetabular angles in individuals of Konya region.

Methods: The acetabular index (AI) angle, acetabular angle (AA) of sharp and the acetabular center (ACM) angle were measured in open triradiate Y cartilage 1458 children's normal acetabulum (n=729, 419 males, 310 females; mean age 6 years; range 3 to 12 years).

Results: The mean AI angle was 13.8±3.9° the upper normal limit for the Hilgenreiners AI

angle was derived as 22°.The mean AA angle was 40.1±4.4°. The upper limits for the AA angle was derived 51°. The mean ACM angle was 41.9±3.3°. The upper limit for the ACM angle in normal hips was assessed as 49°.

Conclusion: This study propose that the normal limits of acetabular angles obtained from our own population be used as reference values in interpreting standard radiographs of the hip.

Keywords: acetabulum, acetabular angle, radiography, pelvis, acetabular angle

O-14

Morphometric evaluation of thoracic and lumbar vertebrae with MDCT in patients with scoliosis

Tatar MC[1], Karabulut AK[1], Öztürk M[2], Güleç A[3], Fazlıoğulları Z[1], Ünver Doğan N[1]

[1]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [2]Department of Radiology, Faculty of Medicine, Selçuk University, Konya, Turkey; [3]Department of Orthopedics and Travmatology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: The number of individuals with congenital and acquired deformities associated with columna vertebralis is quite high in population. Vertebrae surgery is especially applied in situations such as scoliosis, traffic accidents, falling down from a height, cancer, disc herniation. The end result of this study is to decrease the morbidity and mortality that may occur during surgery.

Methods: Patients with non-operated scoliosis or without any scoliosis whose thorax and lumbar vertebrae are visualized by multidedector computed tomography (MDCT) at the Selçuk University Faculty of Medicine Department of Radiology between 2013 and 2017in the study were evaluated retrospectively. Eight male and eight female patients with scoliosis and eight male and nine female patients without scoliosis between 10 and 15 years of age were evaluated. The group over 15 years old was formed in a similar way. In this way, groups were formed with thoracic and lumbar graphy and tomography and Cobb angles were measured on patients' radiographs. The width, height and the distance between the vertebral foramen and transverse process were measured separately on right and left sides of 12 thoracic and 5 lumbar vertebrae for each patient on MDCT images. The width and length of right and left laminae were measured. A total of 768 thoracic vertebrae and 320 lumbar vertebrae were measured.

Results: The mean Cobb angle of the 10-15 year oldl umbar scoliosis patients was found to be 12.75/year in the36.2° average and 12.52/year in the Cobb angle average of 17 patients without scoliosis. In the lumbar scoliosis patients over 15 years of age was found to be 30.75°, 18.68/year, and 2.95° and 22.68/year respectively in 17 patients without scoliosis.

Conclusion: It is aimed that the data we obtain is a guide for surgical instruments, screw, plate developers and clinical specialists.

Keywords: scoliosis, MDCT, vertebral column

O-15

Radiographic examination of talocrural joint morphometry in individuals with normal joint anatomy

Uzuner MB[1], Sargon MF[2], Geneci F[3], Ocak M[2], Sancak T[4]

[1]Department of Anatomy, Faculty of Medicine, Kafkas University, Kars, Turkey; [2]Department of Anatomy, Faculty of Medicine, Hacettepe University, Ankara, Turkey; [3]Department of Anatomy, Faculty of Medicine, Yıldırım Beyazıt University, Ankara, Turkey; [4]Department of Radiology, Faculty of Medicine, TOBB ETU, Ankara, Turkey

Objective: The traumas of talocrural joint is very common in population. Therefore; the anatomy and morphometry of this joint has a great importance. The aim of this study was to examine the morphometry of talocrural joint in a large series of patients according to age and sex in order to add some new knowledge to the literature. However, according to the results of the research, it is aimed to give a way for field-specific prosthesis production to prosthetic producers.

Methods: In the thesis study; the talocrural joint radiographs of 274 anatomically normal patients (134 males, 140 females) were examined. The morphometric measurements of the defined parameters were done and their statistical analysis were performed according to age and sex. From our parameters; measurement of the mediolateral diameter of tibia (TML), measurement of the mediolateral diameter of fibula (FML), surface area measurement of trochlea tali (TTA) and SIGMA angles were firstly defined in this study. Additionally; the iner most distance of talocrural joint (ATI), the outer mostdistance of talocrural joint (ATD), the angle in between the medial malleolus and talus (DELTA), the angle in between the lateral malleolus and talus (BETA) and the sagittal measurement of trochlea tali (TSU) were also measured.

Results: In the comparison of TML, FML, TTA, ATI, ATD measurement sand ALFA angle in both sexes; they were found to be higher in males than in females. However; TSU, SIGMA and BETA angles were found to be higher in females, when compared with males. The DELTA angle was nearly the same in both sexes.

Conclusion: These morphometric analyses were performed in a huge number of anatomically normal patients' radiographs and therefore we believe that the study will add a new knowledge to the literature, will help to the clinicians who are dealing with the ankle joint and will be useful for the companies who are working on implant technology.

Keywords: talocrural joint, ankle joint, anatomy, morphometry, radiography

O-16

Hemispheric differences in brain diffusion values in 3 Tesla MRI

Peker E

Department of Radiology, Faculy of Medicine, Ankara University, Ankara, Turkey

Objective: The purpose of this study was to demonstrate the variability of the diffusion values in different anatomical regions of the brain.

Methods: 3T diffusion MR images of 190 patients that underwent brain imaging were evaluated. Patients were divided into groups according to ages: 20–29, 30–39, 40–49, 50–59, 60–69. The ROIs were placed in the frontal, temporal, occipital, parietal lobes, cerebellum and thalamus, to be of equal size in both hemispheres. The ADC values obtained were standardized by dividing by the ADC values obtained from the ventricle.

Results: 190 patients, 97 men and 93 women, aged between 20 and 69 years, were included in the study. The mean ADC values were: frontal lobe: 726.8×10–3 mm^2 / sec (532–945×10–3 mm^2 / sec), cerebellum: 680×10-3 mm^2 / sec (586–816×10–3 mm^2 / (609–996×10–3 mm^2 / sec) in the temporal lobe, 791.2×10–3 mm^2 / sec (448–945×10–3 mm^2 / sec), parietal: 789.9×10–3 mm^2 / sec (671–935×10–3 mm^2 / sec) and in the occipital: 790.6×10–3 mm^2 / sec (690–973×10–3 mm^2 / sec). Significant differences were found in the frontal, temporal lobes and cerebellum (p=0.600, p=0.430, p=0.227, respectively) and in the thalamus, parietal and occipital lobes when the whole brain was evaluated. (p=0.011, p=0, p=0). There was a significant difference between all age groups for all lobes. When the frontal lobe, cerebellum, thalamus, temporal, parietal and occipital lobes were evaluated, the highest ADC values were obtained between ages 60–69 (748±44×10–3 mm^2/s, 689±34×10–3 mm^2 / s, 731±41×10–3 mm^2 / sec, 827+41* 10–3 mm^2 / sec, 809+56 * 10–3 mm^2/sec, 821+56 * 10–3 mm^2 /sec).

Conclusion: In different anatomical regions of brain, diffusion values are different.

Keywords: diffusion, MRI, brain, asymmetry, lobes

O-17

Morphometric evaluation of vertebrae coccygeae in adult cadavers: a gross-anatomic and micro-CT study

Geneci F[1], Denk CC[2], Uzuner MB[3], Ocak M[4], Gürses İA[5], Çelik HH[2]

[1]Department of Anatomy, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey; [2]Department of Anatomy, Faculty of Medicine, Hacettepe University, Ankara, Turkey; [3]Department of Anatomy, Faculty of Medicine, Kafkas University, Kars, Turkey; [4]Department of Anatomy, Faculty of Dentistry, Ankara University, Ankara, Turkey; [5]Department of Anatomy, Faculty of Medicine, Istanbul University, Istanbul, Turkey

Objective: Our purpose was with micro CT technology investigate the coccyx anatomy accurately and in detail, and to contribute to the data related to the coccyx anatomy.

Methods: 20 coccyges from cadavers were examined with a micro CT device. The inferior part of the sacrum and the vertebrae coccygeae together with the soft tissue surrounding were removed unbroken. The tissue was scanned with a micro-CT device and the scanned data were reconstructed with the programs of micro CT. All parameters were measured with this programs.

Results: Generally the morfometric parameters as mean values was larger in males than in females. In females, coccyx was found to be more flat in the frontal plane and slightly more angular in the sagittal plane than in males.

Conclusion: In our study, it was seenth at the coccyx anatomy was variable and micro CT can be very useful in studies of the morphology of coccyx.

Keywords: coccyx, anatomy, micro CT, cadaver, coccygodynia

O-18

Evaluation of location and morphology of the infraorbital foramen in Turkish population: a preliminary study

Vatansever A, Özcan E

Department of Anatomy, Faculty of Medicine, Balıkesir University, Balıkesir, Turkey

Objective: Anatomical location of infraorbital foramen demonstrates differences within various populations.

Evaluation of anatomical properties of the infraorbital foramen in Turkish population could support additional data among worldwide. Furthermore, determination of anatomical location in more detail of infraorbital foramen leads to decrease iatrogenic injuries to the infraorbital nerve during the facial surgery.

Methods: We examined 60 healthy individuals' (32 women, 28 men) 3 dimensional reconstructed computed tomography images, retrospectively.

Results: According to our preliminary results, age had no effect on the anatomical properties of the infraorbital foramen. The distance of the infraorbital foramen to the midsagittal plane was longer on the both sides in men than women (p=0.03 on left; p<0.001 on left). The distance to the inferior border of the orbit was not different between genders on the both sides (p=0.59 on left; p=0.94 on right). The diameter of the infraorbital foramen was wider in men than women on the left side (p=0.02), while there was no statistically significant difference between genders on the right (p=0.2). The comparisons between right and left sides regardless genders demonstrated a significant difference only for the diameter of the infraorbital foramenin favour to right side (p<0.001).

Conclusion: Our preliminary results indicate detailed information about anatomical location of the infraorbital foramen, thus surgeons should be aware for this region while facial surgeries.

Keywords: anatomy, three dimensional reconstruction infraorbital foramen

O-19

Safe surgical pathways multidisiplinary assessment of planning and resection of complex bone tumor using patient specific 3D model

Öztürk AM[1], Şirintürk S[2], Küçük L[1], Yaprak F[2], Gövsa F[2], Özer MA[2], Çağırıcı U[3], Sabah D[1]

[1]Department of Orthopedic Surgery, Faculty of Medicine, Ege University, Izmir, Turkey; [2]Department of Anatomy Digital Imaging and 3D Modelling Laboratory, Izmir, Turkey; [3]Department of Thoracic Surgery, Faculty of Medicine, Ege University, Izmir, Turkey

Objective: Oncological interventions in thoracic cavity have some important problems such as choice of correct operative approaches varies depending on the tumor, its size and location. Purpose of this study was to evaluate whether patient-specific thoracic cavity model decide pre-operative planning.

Methods: Individual model of this case with thoracic tumor was reconstructed with MIMICS software from the DICOM file of the CT data. Surgical team including six interdisciplinary surgeons explained as theirsurgical experience of the use of 3D life-size individual model for guiding surgical treatment.

Results: The case was surgically difficult as it was required significantly different preoperative plans based on view with diverse angles, allowing the observation of previously unapparent anatomical details. Thoracic cavity with tumor model was enhanced than CT imaging, with this new technology surgeons can observe their planned surgical intervention, explore the patient-specific anatomy, and sharpen their procedure choices. The study helped to establish safe surgical line wherever the healthy tissue were retained and enabled osteotomy by preserving the spinal nerve roots. Finally it helped to determine whether or not the remaining tissue needed reconstruction. The operation went successfully and patient achieved full recovery.

Conclusion: 3D tumor model helps to transfer complex anatomical information to surgeons, provide guidance in preoperative planning stage, for intra-operative navigation and for surgical collaboration purposes. Total radical excision of the tumor and reconstructions of remaining structures using life-size model was the key for successful treatment and better outcomes.

Keywords: osteosarcoma, 3D modeling, thoracic tumor, preoperative arrangement

O-20

The effect of the quadriceps angle (Q angle) on the gait pattern in young adults between the ages of 18–25

Yılmazer Kayatekin AZ, Taşkınalp O, Uluçam E

Department of Anatomy, Faculty of Medicine, Trakya University, Edirne, Turkey

Objective: The quadriceps (Q) angle is a parameter used for the prediction, diagnosis and follow-up of pathologies of the knee joint, since it gives information about the direction and size of forces applied to the patella. It's described as the angle formed by lines drawn from anterior superior iliac spine to the midpoint of the patella, and from the midpoint of the patella to tibial tuberosity. It gives information about the alignment of anatomical structures of the knee joint. We aimed to investigate effects of Q angle upon gait and static balance in this study.

Methods: A sample of 106 female and 105 male healthy subjects at age 18–25 years participated in our study. Bilateral Q angles were measured with goniometer in standing and supine positions. The force platform Zebris © FDM System Type FDM 1,5 and the WinFDM computer program were used for the gait and stance analysis. Spearman correlation test was used for statistical analysis. Statistical significance limit was determined as p<0.05.

Results: We assessed that there was no significant relationship between Q angle and gait analysis parameters. We observed that some of ground reaction force parameters and the butterfly diagram parameters obtained by the gait analysis as well as some of the stance analysis parameters are weak or moderately related to the Q angle. Parameters related to the Q angle didn't show a pattern that would be classified by the Q angle measurement Methods or by the side or by the gender.

Conclusion: We think that it is necessary to conduct more extensive researches in order to clarify the relation between Q angle and walking pattern. We conclude that our research will contribute to the literature as a pioneering study in terms of the relation between the Q angle and gait analysis as well as the stance analysis.

Keywords: quadriceps angle, Q angle, gait analysis, stance analysis

O-21

Morphological investigation of sulcus obturatorius and foramen obturatum and clinical evaluation of the potential role of obturator hernia

Güner N[1,2], Patat D[1,3], Ozan H[1], Kurt AM[2], Nisari M[3]

[1]Department of Anatomy, Faculty of Medicine, Lokman Hekim University, Ankara, Turkey; [2]Department of Anatomy, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey; [3]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey

Objective: Foramen obturatum on os coxae is a large hole delimited by os pubis and os ischium and sulcus obturatorius is located at the upper border. The upper part of the membrana obturatoria is attached to the edges of this sulcus and consist of a channel called canalis obturatorius; between sulcus obturatorius and membrana obturatoria.V. obturatoria, a. obturatoria and n. obturatorius pass through this channel.

Methods: We were obtained ninety os coxae collections of Uludağ University Department of Anatomy and Erciyes University Department of Anatomy. Six parameters were measured using Vernier caliper to 1/20 mm. These parameters include length of sulcus obturatorius, proximal part of sulcus obturatorius width, middle part of sulcus obturatorius width, distal portion of sulcus obturatorius width, transvers lenght of foramen obturatum, vertical lenght of foramen obturatum. The results of this study were statistically evaluated with SPSS 20.0 program, whether there was a significant difference in right and left bone, besides whether there was a correlation between each parameter.

Results: There was only one significant difference between left and right os coxae. Correlation analysis results showed seven positive correlations respectively; length of sulcus obturatorius, proximal part of sulcus obturatorius width (r:0.258)*, middle portion of sulcus obturatorius width (r:0.424)**, between transvers lenght of foramen obturatum (0.358)**; proximal part of sulcus obturatorius width between the middle part of sulcus obturatorius width (r:0.420)** between vertical length of foramen obturatum (r:0.262)*; with middle portion of the sulcus obturatorius width between distal portion of sulcus obturatorius width (r:0.346)**.

Conclusions: Obturator hernia is a rare type of hernia and is more common in older women who have had multiple births. In ourstudy, it was examined whether there was a correlation between foramen obturatum and sulcus obturatorius, which contributes to the consist of canalis obturatorius, which often forms the way out of these hernias. In our next studies, it is planned to investigate whether the parameters correlated positively with sulcus obturatorius and foramen obturatum are important in obturator hernias, detected by CT or MRI images.

Keywords: sulcus obturatorius, foramen obturatum, obturator hernia, morphometry

O-22

The relationship between sella turcica bridging and cephalometric parameters in Turkish adolescent and young adults

Karaman A[1], Kutalmış BS[1], Yaşa Y[2]

[1]Department of Orthodontics, Faculty of Dentistry, Ordu University, Ordu, Turkey; [2]Department of Oral and Maxillofacial Radiology, Faculty of Dentistry, Ordu University, Ordu, Turkey

Objective: Sella turcica bridging occurs with the fusion or calcification of anterior and posterior clinoid processes in the middle cranial region. The purpose of this study was to compare cephalometric parameters among normal shape, partial bridge and total bridge of sella turcica in adolescent and adult subjects.

Methods: This retrospective study was performed on lateral cephalometric radiographs of 410 Turkish adolescent and adult subjects. The subjects were divided into three groups as normal shape sella turcica (128 female and 32 male; mean age 17.7±1.54 years), partial bridge (129 female and 32 male; mean age 17.8±2.15 years) and total bridge (66 female and 23 male; mean age 18.2±1.82 years).Thirteen angular, and 8 linear cephalometric measurements were done by using cephalometric software programme. The data were analysed by using one-way analysis of variance, Kruskal Wallis, and post hoc tests.

Results: Statistically important differences were found for Nperp–A, Nperp–Pg, palatal plane-to-anterior cranial base angle among the groups ($p<0.016$). There were no significant differences between the partial and total bridging groups in terms of other evaluated cephalometric parameters ($p>0.05$).

Conclusion: This study has represented the largest data of cephalometric measurements focusing on degree of calcification of sella turcica in adolescent subjects. Maxilla and mandibula were positioned retrusive in partial and total bridge subjects according to McNamara analysis compared to normal shape sella turcica subjects.

Keywords: adolescent population, craniofacial anatomy, digital lateral cephalometry, sella turcica bridge

O-23

Anatomical features of calcar femorale in healthy individuals

Keven A[1], Aytaç G[2], Özturk S[3], Küçük Biçer B[4], Sindel M[3]

[1]Department of Radiology, Faculty of Medicine, Akdeniz University, Antalya, Turkey;[2] Department of Anatomy, Faculty of Medicine, Yüksek Ihtisas University, Ankara, Turkey;[3] Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [4]Department of Public Health, Faculty of Medicine, Yuksek Ihtisas University, Ankara, Turkey

Objective: The femoral calcar is a normal ridge of dense bone that reaching from the postero-medial endosteal surface of the femoral neck to the lesser trochanter. The femoral calcar can transport compression and redistributes load from the femoral head to the proximal femur. This structure could be important during surgical interventions of this area. Therefore, the aim of this study was to evaluate anatomical description of the calcar femorale in healty individuals.

Methods: 150 patients (87 males, 63 females) undergoing CT for other purposes with no complaints or pathological findings in the hip region were included in the study. These patient's abdominal CT images, that taken with routine parameters, were evaluated retrospectively. Images were evaluated in terms of the shape, dimensions, and density of the femoral calcar. Correlations between these measurements were evaluated.

Results: The femoral calcar was showed various shapes as: ridge-type (31.3%) spur-type (16.7%) and septum-type (40%). Septum was the most common type in both gender. There was no difference in shape in terms of right and left sides. Its mean dimensions were: height 40.1±9.1mm, length 10.3±2.9 mm and thickness 1.4±0.7mm. Its mean density was 788.8±237.3HU. The mean oblique and anteroposterior diameters of the femoral cavity were 42.2±4.9 and 24.4±4.4, respectively. Measurements of femoral calcar height ($p=0.017$) and length ($p=0.039$); oblique ($p<0.001$) and anteroposterior diameters ($p=0.026$) of the femoral cavity were higher in males. There was no difference in density in terms of gender.

Conclusion: Recent studies have shown that the results of femoral calcar preserving arthroplasties are satisfying, and also femoral calcar could be a good reference for stem insertion. For all these reasons, our study was intented to evaluate anatomical measurements of the calcar femorale in healty individuals. Detailed knowledge of the normal anatomy of this structure could be useful during the surgeries of this region.

Keywords: calcar femorale, computed tomography, anatomy, proximal femur

O-24

Evaluation of postur and flexibility in ballet dancers

Öktem H, Kürkcüoğlu A, Pelin C

Department of Anatomy, Faculty of Medicine, Başkent University, Ankara, Turkey

Objective: Ballet dancers require a high level of posture control during performance and positions contrary to human anatomy. Good postural stability refers to the ability to maintain a maximum competence with minimum effort physiologically and biomechanically. A patern of musculoskeletal adaptations occur in classical ballet in order to require postural stability and positions. The flexibility and mobility of the joints defined as an increase of the width of the movement. Flexibility is a physical property that can be developed with regular exercise. The aim of this study was to evaluate the postural control and flexibility between the classical ballets and students as the control group and the effects of classical ballet training on the posture and the flexibility.

Methods: In this study a total of 59, 30 classical ballets of Hacettepe University Ankara State Conservatory and 29 female students of Başkent University participated. Postural analyzes of both groups were performed with the symmetrigraph from anterior, posterior and lateral views. Goniometer was used for angles to evaluate the flexibility and anthropometer was used for distance measurements.

Results: Hallux valgus was observed 90% of classical ballets, 31% of control group students. 66.7% of classical ballets and only 10% of control group had genu varum deformity. Pronation of foot and pes planus are more common in non ballets. Performing as a classical ballet is a significant factor ($p=0.004$) for the presence of genu recurvatum where as can not be considered as a significancy for knee flexion ($p>0.05$). There was a significant association between two groups of medians of trunk flexion and hyperextension ($p<0.001$).

Conclusion: Adaptive changes of posture disorders caused by classical ballet can be evaluated more easily by symmetrigraph. It is necesarry to determine the relationship between posture and flexibility and injures so we can evaluate the disorders on time.

Keywords: ballet, posture, flexibility, symmetrigraph

O-25

Evaluation of cerebellum volume and cerebellar vermis areas on magnetic resonance images by stereological methods

Taman FD[1], Kervancıoğlu PÇ[2], Kervancıoğlu S[3], Turhan B[4]

[1]Aktif Sağlıklı Yaşam Merkezi, Istanbul, Turkey; [2]Department of Anatomy, Faculty of Medicine, Gaziantep University, Gaziantep, Turkey; [3]Department of Radiology, Faculty of Medicine, Gaziantep University, Gaziantep, Turkey; [4]Department of Physical Therapy and Rehabilitation, Faculty of Health Sciences, Hasan Kalyoncu University, Gaziantep, Turkey

Objective: Body size, age and gender are important factors that affecting the cerebellum volume (CV). Many neurological diseases lead changes in CV. The aim of this study is to measure CV and total intracranial volume (TIV) on magnetic resonance (MR) images for both genders, to calculate the CV/TIV volume ratio and also to determine the normal values that can be regarded clinically significant by determining the total vermis area and anterior cerebellar vermis (V1), posterosuperior cerebellar vermis (V2) and posteroinferior cerebellar vermis (V3).

Methods: MR images (without any pathological findings) of 100 individuals (50 females, 50 males) between the ages of 20–40 were used. Cerebellum volume and volume ratios and cerebellar vermis area and area ratios were calculated by using the Stereoinvestigator 8.0 (Microbrightfield, USA) software. The volume calculations were performed by the point counting Methods according to the Cavalieri principle, which is one of the volume calculation methods in stereology. Total CV, TIV and cerebellar vermis areas (V1, V2, V3) were measured for both groups.

Results: The volume of cerebellum was 120.53±11.1 cm^3 in males, 105.99±11.2 cm^3 in females, TIV was 1304.99±91.7 cm^3 in males and 1155.15±85.7 cm^3 in females. CV and TIV were statistically higher in males (p=0.001, p=0.001 respectively). When the CV / TIV ratio was examined, it was observed that the differences between the genders disappeared (p=0.679). The total vermis area was 11.59±1.3 cm^2 in males and 10.85±1.3 cm^2 in females. V1 area, V3 area, and the total vermis area were found statistically higher in males (p=0.05, p=0.006, p=0.007 respectively). When the ratios of V1, V2 and V3 to the total vermis area were examined, it was determined that the area ratio of V2 was higher in females (p=0.03). **Conclusion:** We believe that the normal values of CV, TIV and vermis areas, determined by stereological Methods, will contribute to the diagnosis and the treatment planning of the clinical pathological evaluations.

Keywords: Cavalieri principle, cerebellar volume, stereology, cerebellar vermis area

O-26

The face of my death familiar to me: are we ready to die without dying?

Tekdemir İ

Department of Anatomy, Faculty of Medicine, Ankara University, Ankara, Turkey

Objective: Death is a concept that every living thing will experience through the end of one day's life. According to some people, the spirit is the body, the transition in the dimension of energy according to some, the disappearance according to some, and according to some, VUSLATTIR. The meaning of DEATH in the world of time and space, which is loaded with meaning, has become a cold and thought-provoking concept.

Methods: Mawlana's death understanding of Mevlana; God contains opinions about the universe, human, soul and life. According to Mevlana, the meaning of life in the world system, the immortality of the soul, and the way it is passed on to Allah. Actually dying is the condition of your creation. Death is in our possession, and escaping from it is your escape. Now we will enjoy this life, as well as life has a place of death. Death; it is not the opposite of life, but the other side of the medallion. Because the day we come to the world, we start to live on the one hand and die on the other.

Results: Let's assume we were all dead together and let's get out of ourselves to see ourselves and recognize ourselves, try to look ourselves out as if we were dead. We see our reactions, our relationships with other people, our postponement of life, our love, our sacrifice and our gaze, just like a movie. What will we see? Is it worth it? How meaningful is our lack of love? What do we resist? What do not we accept? Actually, what happens if I get approval? What if we zoom in? What if we are clear and honest? Let's think about one; Do we really lose what we lose? Are we, in fact, the real winners? After all, if life has not worked for you, if you are in vain, what are you afraid of losing it? If we now look at our own reality; where are we? How long have we been able to train our brethren? Are we a passenger in the way of love? Are we ready to die without dying? We need to ask a lot of similar questions. The answers to these questions are the instruction to use life. It is the students 'first encounter in the educational environment with the death which will be a natural part of the physicians' professional life, and they also raise their awareness about the meaning of death and life on the one hand and the confrontation with this shake.

Conclusion: In other words, the experience beyond them confronts them with both death and death, as well as the widespread social prejudice that the dead body can be touched and that various processes are not feasible.

Keywords: Mevlana, death, Vuslat, medical education

O-27

The future of the body donation and using cadavers for medical education in Turkey: assessment and solutions through two donors

Adıgüzel E

Department of Anatomy, Faculty of Medicine, Pamukkale University, Denizli, Turkey

Objective: In this presentation, the solutions to increase body donation will be addressed through the memory of two cadaveric donors, a medical professor and a literate whose donates his body as a cadaver.

Methods: The educators around the world accept that medical training can not be done without anatomy training on the cadaver. It has generally been a problem to supply cadaver for medical education for about two hundred years in our country. This problem, which has been totally solved by the body donations of the people of the western countries in general, needs to be intervened in our country in order to achieve a radical solution. Though the laws are appropriate, it is necessary to lay down the underlying reasons why people do not intend for body donation. Despite the legal authority given to the medical faculties, the lack of knowledge about the cadaver donation and the foundation of the medical faculty administrative staff and teaching staff of the anatomy departments hould be eliminated. A "body donation commission" to be formed within the Turkish Anatomy and Clinical Anatomy Society and a "body

donation line" to which donors can communicate constantly. Within the frame work of the strategy to be established by the Commission members, "research, information and infrastructure" studies and permanent records should be established. The cadaver inventory of anatomy departments in Turkey should be determined by subtracting the total annual number of cadavers, cadaver supplying solution must be produced for the medical schools with cadaver supply problem.

Conclusion: The feed back to be received at the end of the presentation will be shared in the General Assembly of the Turkish Anatomy and Clinical Anatomy Association and a proposal for a resolution with the solution will be proposed.

Keywords: cadaver, body, donation, anatomy, education

O-28

Updating body donation forms

Gürses İA[1], Ertaş A[2], Gürtekin B[3], Coşkun O[1], Üzel M[2], Gayretli Ö[1], Demirci MS[2]

[1]Department of Anatomy, Istanbul Faculty of Medicine, Istanbul University, Istanbul, Turkey; [2]Department of Anatomy, Cerrahpaşa Faculty of Medicine, Istanbul University-Cerrahpaşa, Istanbul, Turkey; [3]Department of Biostatistics, Istanbul Faculty of Medicine, Istanbul University, Istanbul, Turkey

Objective: International professional recommendations and national or international legislations with a narrower scope are present for regulating the ethical use of donated human bodies. Nevertheless, some contemporary topics that recommendations or legislations do not cover have emerged and are being debated. During a profiling study at the Istanbul Faculty of Medicine and Cerrahpaşa Faculty of Medicine, topics that current legislations did not cover such as, level of anonymity, timespan of body part usage, and activities perfomed on the body, were observed. This study aims to evaluate these topics.

Methods: After obtaining Ethics Committee approval (date: 02.06.2014; no: 900), level of anonymity, time bodies and body parts could be used, and acitivities allowed to be performed were investigeated among registered donors.

Results: Among all donors, 74.2% and 81.6% expressed that they would allow their health and personal information, respectively, could be shared with the public or medical students. As for the time their bodies, bodiy parts, and skeletons could be used, 73.8% chose indefinite use, while 20.9% left this decision to the Anatomy Department. Similarly, 19.9% of donors wished their bodies to be used for education and reseacrh, while 64.5% left this decision to the Anatomy Department.

Conclusion: These results indicate that body donors in Turkey have expectations regarding some topics such as anonymity, timespan of their bodies to be used, and activities to be performed that current legislations do not cover. Implementing these topics into donations forms and current legislation should be considered after consulting with their relatives.

Keywords: body donation, body donation forms, legislations, Turkey

O-29

How reliable are the cadavers used for educational purposes?

Özdemir F[1], Karasartova D[2]

[1]Department of Anatomy, Faculty of Medicine, Hitit University, Çorum, Turkey; [2]Department of Medical Microbiology, Faculty of Medicine, Hitit University, Çorum, Turkey

Objective: In cadavers used routinely for training purposes in the anatomy laboratory, dissection is carried out by pre-education teaching members. They are also interacting with students for a long time for educational purposes. Sterilization of cadavers is important both for the lecturers and for the medical students.The aim of this study is to determine whether cadavers used for training in anatomy laboratories detected in formalin solution are contaminating.

Methods: The samples were taken from microbial contaminants from two male and one female cadavers in the Anatomy Laboratory of Hitit University Faculty of Medicine. Two samples from axilla, mouth, ear, nose and perineal regions were taken by the Microbiologist using sterile extubating. In the biosafety cabinet, the samples were plated on the Brain Heart Infusion Broth (BHIB) broth and left to incubate for 5 days at 37 °C. After incubation, these liquid mediums were sown with blood agar and again at 37 °C for 2 days. This procedure was repeated 1 every 3 months.

Results: As a result of the sowing of the samples taken from the surfaces of cadavers treated with 10% buffered formalin, there was no reproduction in the cadavers.

Conclusion: This study emphasizes the importance of standard infection control protocols. The continuation of these controls has shown how important it is for primary protection from the foci of infections that can cause both the education of cadavers and the health of the teaching staff members.

Keywords: cadaver; anatomy education; infection

O-30

Medical students' opinions on the level of anonymity of cadavers: a multicenter survey

Gürses İA[1], Ertaş A[2], Gürtekin B[3], Çelik S[4], Gülekon N[5], Tekdemir İ[6], Taşkınalp O[7]

[1]Department of Anatomy, Faculty of Medicine, Istanbul University, Istanbul, Turkey; [2]Department of Anatomy, Cerrahpaşa Faculty of Medicine, Istanbul University-Cerrahpaşa, Istanbul, Istanbul, Turkey; [3]Department of Biostatistics, Istanbul Faculty of Medicin, Istanbul University, Istanbul, Turkey; [4]Department of Anatomy, Faculty of Medicine, Ege University, Izmir, Turkey; [5]Department of Anatomy, Faculty of Medicine, Gazi University, Ankara, Turkey; [6]Department of Anatomy, Faculty of Medicine, Ankara University, Ankara, Turkey; [7]Department of Anatomy, Faculty of Medicine, Trakya University, Edirne, Turkey

Objective: Current anatomy practice recommends retaining cadaver anonymity. Nevertheless, sharing limited health information including cause of death, diseases, and prior operations

with medical students is widely practiced globally. Recent years have seen a discussion on sharing ID information of the cadavers and creating a more personal student-cadaver relationship. This study was aimed to investigate medical students' opinions on the level of anonymity of the cadavers they are currently studying.

Methods: Following Ethical Committee approval, opinions of second year students at six different medical faculties were evaluated with a questionnaire. The questionnaire included multiple-choice, Likert, and open-ended items. Students were asked to evaluate how much health and personal information about the cadavers could be shared with them.

Results: Total number of respondents was 1610. For sharing health information, 57% preferred a limited information share including age, cause of death, and prior diseases/operations while 31% preferred whole health information of the cadaver to be shared. For personal information, 74% of the students wished the cadavers' ID to be confidential while 12% preferred sharing limited information including name and marital status. Most preferredanonymity option was sharing moderate information (46%) including age, cause of death, diseases, prior operations, marital status, number of children, and occupation.

Conclusion: It is important for the students and donors have similar expectations regarding personal information of cadavers including health and ID information. This study showed that medical students in Turkey think that sharing health information of cadavers could improve the quality of anatomy education. Therefore, various regulations and practices could be planned to share limited health information of cadavers for educational purposes. Although the students did not prefer, personalinformation of cadavers could be used to emphasize body donation awareness among students, develop empathy abilities of students, and eventually increasing body donation rates.

Keywords: anatomy education, ethics, cadaver, anonymization, health information, personal information

O-31

Medical education: clinical anatomy and war surgery relationship

Özden H[1], Ortadeveci A[1], Akbaş Y[1], Hız İ[1], Yeğin B[1], Aslan D[1], Güner M[1], Peker H[1], Alpay M[1]

[1]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Clinical anatomy is an approach to the study of anatomy in terms of regions and / or systems, emphasizing the application of anatomy knowledge to practical applications of clinical problems and / or anatomical knowledge of clinical observations. War Surgery is defined as "a hand of a surgeon who teaches the treatment of injured in a difficult situation of battle, the practice of general and special surgeons' prisons under warfare conditions". In the light of these definitions, clinical anatomy education emerges in terms of war anatomy and surgery. During medical education, the importance of clinical anatomical importance is known. In this study, it was aimed to give relation between clinical anatomy and war surgery.

Methods: We are observations and experiences in the military operations of "Fırat Kalkanı and Zeytin Dalı" as UMKE (National Medical Rescue Team) volunteer. In addition, research assistants are the subject of clinical anatomy in selected seminars for training.

Results: When we encounter emergency medical issues such as head, chest, abdomen trauma during our health support mission as a volunteer of the Turkish Armed Forces as a UMKE volunteer, it is necessary to have anatomical knowledge. Clinical anatomy and physiology information is urgent for attitudes and behaviors of trauma, tracheostomy, intubation, chest tube, nasogastric catheter, fractures, trauma, piercing and cutting injuries. Emergency radiology information is directly related to the clinical and radiological anatomy of the site. Clinical anatomy seminars prepared by researchers and the positive results of sharing them with the students were observed in laboratory training.

Conclusion: Our world and the geography we live in area in giving us the signals that we have to be prepared for the war environment every day. In this situation, medical students and graduates from other health schools should have a good clinical anatomy and physiological background.

Keywords: clinical anatomy, warfare surgery, medical education

O-32

Annual changes in body donation applications

Ertaş A[1], Coşkun O[2], Doğancı ÖI[1], Gürses İA[2]

[1]Department of Anatomy, Cerrahpaşa Faculty of Medicine, Istanbul University-Cerrahpaşa, Istanbul, Turkey; [2]Department of Anatomy, Istanbul Faculty of Medicine, Istanbul University, Istanbul, Turkey

Objective: Increasing awareness on body donation and the procurement of the donors' bodies post humously by institutions are essential for dissection which is a must-have for anatomy education. Every "Body Donation Consent Form" includes vitalin formation such as sex, age, and application time. Therefore, data extracted from registered body donor application forms comprise the basis for campaign activity strategies regarding body donation awareness. This study aims to investigate whether body donation application times change within a calendar year

Methods: The study included the data of body donors at the anatomy departments of Istanbul University-Cerrahpaşa Cerrahpaşa Faculty of Medicine and Istanbul University Istanbul Faculty of Medicine who registered between 2012 and 2018.

Results: Number of body donation applications increased rapidly between 2014 and 2017. A total of 113 (IFM: 53, CFM: 60) womenand 224 (IFM: 103, CFM: 121) men had been registered at both departments. The records revealed increased

donation applications in March, April, and May annually. At IFM, the increase was significant in April and May ($p<0.001$), while at CFM they were significant in November ($p<0.05$). Women were more likely to registerduring April, May, November, and December ($p<0.05$) at IFM, while they were more likely to register during November and December ($p<0.05$) at CFM. Men, on the other hand, were more likely to register during March and May ($p<0.001$) at IFM, while they were more likely to register during September and November ($p<0.001$) at CFM.

Cocnlusion: An evident seasonal increase in body donation applications druing Spring and Autumn at both departments is present. These results indicate that donation applications Show seasonal changes. These data, if expanded within formation from multiple centers from differentcities, could be used to determine appropriate time periods that publicity activities of the National Body Donation Campaign should be focused.

Keywords: body donation, body donation campaign, seasonal changes, Turkey

O-33

How average is the average body donor profile in Turkey?

Gürses İA[1], Ertaş A[2], Gürtekin B[3], Coşkun O[1], Üzel M[2], Gayretli Ö[1], Demirci MS[2]

[1]Department of Anatomy, Faculty of Medicine, Istanbul University, Istanbul, Turkey; [2]Department of Anatomy, Cerrahpaşa Faculty of Medicine, Istanbul University-Cerrahpaşa, Istanbul, Turkey; [3]Department of Biostatistics, Faculty of Medicine, Istanbul University, Istanbul, Turkey

Objective: Profiling body donors can be used for improving awareness campaigns and understanding donation behaviour. Nevertheless, literature shows that average donor profiles may conceal existing subgroups. Although they are essential, profiling studies may mislead donation campaigns.

This study was aimed to analyze possible subgroups within registered and profiled body donors of Istanbul Faculty of Medicine and Cerrahpaşa Faculty of Medicine.

Methodss: A cluster analysis was perfomed to reveal possible subgroups among registered donors. Age, sex, educational level, marital status, and religious choice variables were selected as attributes. Connectivity and Average Silhouette indexes were used to validate the number of clusters. Cluster membership for each case was determined with K-means algorithm. Comparison of validated clusters was donewith Pearson's chi-square test.

Results: Optimal membership was achieved with two clusters solution (Connectivity index 5.44; Average Silhouette index 0.62). Two clusters significantly differed for educational level ($p<0.001$), marital status ($p<0.001$), and religious choice ($p=0.013$). Age ($p=0.821$) and sex ($p=0.14$) were not different among clusters.

Conclusion: This study showed that there are at least two subgroups among the body donor profile in Turkey. These results may help to increase the effectiveness of the National Body Donation Campaign by determining a more appropriate audience.

Keywords: body donation, donor profile, cluster analysis, subgroups, Turkey

O-34

Detailed evaluation of anatomy in computed tomography for the application of lomber transpedicular screw

Eroğlu A

Haydarpaşa Sultan Abdülhamid Han Education and Research Hospital, Istanbul, Turkey

Objective: In our study, the results of morphometric measurements of pedicle diameters and lengths, pedicle angles, and corpus size of the Lomber vertebrae were evaluated.

Methods: 640 pedicle between L1-L5 of sixty-four patients (between 47–75 years) with Lomber Spondylosis was evaluated by computed tomography. Pedicle diameter and length, pedicle angles, corpus size were measured. The length of the line extending from the outside of the facet joint to the anterior facial bone cortex were measured as the angle at which the pedicle was extended from the center of the line to the corpus. The pedicle lengths were the shortest at the L5 distances, and that the pedicle length increased as the upper levels were exited. The corpus size is greater at lower distances, but when the pedicle lengths are considered, the size of the screw used does not increase.

Results: The largest pedicle diameter was L5, the smallest pedicle diameter was L1. The pedicle diameters increased as the lower levels were lowered. It was seen that the screw sending angle was stiffened at the upper levels.

Conclusion: The pedicle angle and diameter increase as Lomber region is lowered, the thickness of screw used increases and the entrance angle increases and it is necessary to be more medial. The screw size does not increase as the lower levels are lowered. The Lomber region pedicle diameter and angles and the anatomy of the corpus size are well known for the safety of the surgeon.

Keywords: vertebra, pedicle diameter, polyaxial screw

O-35

Assessment of relationship between obesity and knee joint morphology in healthy women

En B[1], Karaca Saygılı O[2]

[1]Atatürk Government Hospital, Balıkesir, Turkey; [2]Department of Anatomy, Faculty of Medicine, Balıkesir University, Balıkesir, Turkey

Objective: It is required full extension and at least 117° flexion action in the knee joint to perform daily activities. Obesity is a risk factor for load-bearing joints, especially diseases that occur in the knee joint and it causes normal range of motions (ROM) to

be restricted. According to biomechanical theory, as a result of obesity, axial repetitive loads occur on the knee joint which increases cartilage destruction and subchondral bone deterioration. To investigate the effect of obesity on normal range of motions and knee joint space with in healthy women.

Methodss: 21 non-obese and 21 obese pre-menopausal healthy women 30–40 years of age were participated in our study. Knee joints radiographies were done using DRS brand highlight 1000 DR X-ray device. Radiographies performing on stand (loaded), participants were asked to weight in equal amounts in both legs. In lying down (unloaded), radiographies were performed in the supine position. Knee joint's space were measured on radiographic images, from the medial and lateral compartments of the joint and from the narrowest distance of the joint space. ROM were measured using a universal goniometer. Measurements of the active and passive ranges of motion were made for the right and left knee joints separately.

Results: Mean value of Body Mass Index was 20.91±2 kg/m^2 in non obese women and 34.43±4.5 kg/m^2 in obese women. In the measurements radiographies performed on loaded, a statistically significant narrowing in space of knee joint was observed in both medial and lateral compartments of the right knee joint of obese women compared to healthy women ($p<0.05$). However In the radiographies performed on unloaded, a statistically significant narrowing in space of joint was found in medial compartments of both knee joint of obese women ($p<0.05$). It was detected that especially the right knee joint was affected by obesity. When we have assessed of ROM, passive and active flexion angle of the joint was decrease in obese women in both of knee joints ($p<0.01$).

Conclusion: Our results would be beneficial to increase awareness about obesity and would be a guide to physicians working on knee joint pathology.

Keywords: knee joint, obesity, ROM

O-36

Regression and correlative analysis study of the graft length for reconstruction of medial patellofemoral ligament

Işıklar S[1,2], Babacan S[2], Özdemir S[2], Gökalp G[3]

[1]Medical Imaging Techniques Program, Bursa Uludağ University, Health Services Vocational High School, Bursa, Turkey; [2]Department of Anatomy, Bursa Uludağ University, Faculty of Medicine, Bursa, Turkey; [3]Department of Radiology, Bursa Uludağ University, Faculty of Medicine, Bursa, Turkey

Objective: Recently, for a recurrent patellar dislocation, medial patellofemoral ligament (MPFL) reconstruction has come to be commonly performed. The purpose of this study is to personally calculate the MPFL graft length.

Methods: In this study, knee MR images which were obtained from 3 Tesla MR device at Uludağ University Medical Faculty Hospital, Department of Radiology were investigated retrospectively. 25 males and 23 females, 48 patients (average of age 34, range of ages 19–65) in total, who were confirmed by musculoskeletal radiology specialist that they have no pathology related knee joint, were included in this study. Twenty morphometric parameters on the images were taken from knee joint including MPFL, trochlear sulcus and patella, by using PACS station. The obtained data were evaluated using SPSS 22.0 software.

Results: After the correlation analysis, it was identified that the length of MPFL correlated highly with the femoral trochlear sulcus depth (TSD), lateral trochlear inclination (LTI), patellar height (PH) and distance between tuberositas tibia and patellar joint (TT-PE). As a result of the regression analysis, the formula of "15.31 + (0.922×TSD) + (0.285×LTI) + (0.448× PH) + (0.142×TT-PE)" was developed for calculating the estimated length of MPFL (SEE: 2.74 and Adjusted R2: 0.531).

Conclusion: Individual MPFL reconstruction is a new approach. It is important that the graft used for reconstruction should provide positive outcomes after long term rehabilitation procedure, let the knee acquire normal mechanic and ultrastructural features; it shouldn't damage the extension mechanism of the knee and cause pain in the knee.

Keywords: MPFL, graft length estimation, MRI

O-37

Morphology and clinical significance of forefoot

Özşahin E

Department of Anatomy, Faculty of Medicine, Başkent University, Adana, Turkey

Objective: Forefoot morphology is defined by the foot length. Even if some factors may cause modifications it is genetical and remains stable throughout life. This study is undertaken to assess the forefoot morphology and determine the frequency in population and define the distribution across genders.

Methods:142 hospital workers (142 male, 93 female) from Başkent University Adana Hospital were recruited. After age and gender of the cases were noted the forefoot structure of the cases were assessed according to foot length. There are three forefoot types in literature. Egyptian Foot, Square Foot and Greek Foot. The results were recorded and classified according to forefoot types listed above. Data was analyzed statistically and the frequency of each forefoot type was determined according to gender.

Results: The results of this study showed that the most frequent type of forefoot was Egyptian type (47.7%) followed by Greek type (29.7%) and square type (22.6%). No association was found between gender and forefoot type.

Conclusion: The analysis of normal and pathologic variations of human forefoot morphology is significant for ortopedia, orthesis design, sport sciences and physical anthropology and

important for effective shoe design. We believe the results of our study will form a data base for future studies.

Keywords: gender, Egyptian foot, forefoot morphology, Greek foot, square foot

O-38

The effect of cerebral lateralization on body composition and ankle proprioception

Çevirgen F, Yılmaz N, Şenol D, Altınoğlu M, Canbolat M, Köse E, Özbağ D

Department of Anatomy, Faculty of Medicine, İnönü University, Malatya, Turkey

Objective: Hemisphere dominance in human brain was put forward with the study conducted by Broca on aphasia patients in 1860. Studies on this dominance generally use hand and foot dominance. Hand grip strength (HGS) is an objective parameter in the assessment of upper extremity functions and it is correlated with upper extremity muscle strength. Bioelectrical impedance analysis technique is a technique used to assess body composition. Proprioception is a sense which contributes to joint stability and perception, planning and control of movement in humans. The purpose of this study is to assess the hand grip strength, ankle proprioception and body composition of individuals who have different dominant extremities.

Methods: 46 healthy İnönü University students participated in our study voluntarily. The participants' hand preferences were found with Oldfield hand preference questionnaire and foot dominance was determined with vertical jump test; hand grip strength was measured with Baseline hand dynamometer, body composition was measured with Tanita BC-418 and ankle proprioception was measured with Baseline Digital Inclinometer. The parameters taken from the participants were dominant extremity, right HGS, left HGS, fat and muscle percentage for both extremities. In addition, ankle proprioception measurement was made for both extremities with eyes open and closed at angles of 10º dorsiflexion, 11º plantar flexion and 25º plantar flexion.

Results: According to Mann-Whitney U analysis conducted, statistically significant difference was found between right-handers and left-handers in terms of right HGS, left HGS, right leg GA 11º PF, right leg fat percentage, right leg muscle percentage, left leg fat percentage and left leg muscle percentage ($p<0.05$).

Conclusion: Brain hemispheres show a symmetric structure and they provide left-right symmetry related with the sense and motor functions of the body. This study aims to draw attention to the effect of cerebral lateralization in students. We believe that this study will be a resource for future studies.

Keywords: cerebral lateralization, body composition, ankleproprioception

O-39

Morphometric evaluation of acetabulum

Bağcı Uzun G[1] Değermenci M[2] Uçar İ[3] Arslan A[2], Nisari M[2]

[1]First and Emergency Aid Department, Vocational School, Kapadokya University Nevşehir, Turkey;[2] Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey; [3]Department of Physical Therapy and Rehabilitation, Kırşehir Ahi Evran University, Kırşehir, Turkey

Objective: The acetabulum is a pit which is located on the outer surface of the hip bone and which is articulated with the femur head. Acetabulum consists of three bones: os ilium, os ischii, os pubis. The association of these three bones starts at 14–16 years and continues until the age of 23 years.The purpose of this study is to assist clinicians in hip operations by performing morphometric measurements of the acetabulum.

Methods: In our study, 96 os coxa (50 right, 46 left) were used in the Anatomy Department of Erciyes University.7 parameters including the depth of acetabulum, length of limbus acetabuli, shape of the acetabulum, length of acetabular notch, length between the acetabulum edge of the corpus ischii and the anterior margin of the acetabulum and acetabulum transverse diameter with help of digital callipers on dry bone were assessed. Images taken from the dry bone were transferred to a computer and the area of facies lunata and the length of limbus acetabulum were calculated with the ImageJ program.

Results: The mean depth of acetabulum was 23.90±3.94 mm, facies lunata area was mean 13.44±3.88 cm^2, limbus acetabuli length was 13.65 cm on the right, 13.61 cm on the left (mean 13.63 cm), incisura acetabuli length was 19.12 mm, the transverse diameter of acetabular notch was calculated as 50.99 mm. The shape of the acetabulum was regular in 41, irregular in 8, curved in 27 and angular in 20 bones.

Conclusion: We think that these index values of the acetabulum obtained will contribute to clinicians and the literature in hip dislocation and total hip surgery.

Keywords: acetabulum, morphometry, ImageJ

O-40

Quantitative analysis of jugular foramen in human dry skulls

Hamzaoğlu V[1], Kayan G[2]

[1]Department of Neurosurgery, Faculty of Medicine, Mersin University, Mersin, Turkey; [2]Department of Anatomy, Faculty of Medicine, Mersin University, Mersin, Turkey

Objective: This study aims to compare right-left sides and endo-exocranial orificesof jugular foramen considering vascular and neural compartments.

Methods: Twenty human dry skulls, present in the inventory of Mersin University Faculty of Medicine–Department of Anatomy were included in the study. Numerical values were obtained using a digital caliper and a digital image analysis software.

Results: The length of the endocranial vascular compartment of the jugular foramen was greater on the right than on the left (p=0.03).The right exocranial vascular compartment was wider than left side (p=0.02). However, the width and length of the endocranial and exocranial neural compartments had no statistically significant difference between right and left sides (p>0.05).The exocranial vascular compartment was wider and longer than the endocranial vascular compartment (p<0.001). The exocranial neural compartment was partly wider than the endocranial neural compartment (p=0.03). However, no statistically significant difference between their lengths was found (p=0.06).

Conclusion: Jugular foramen was dominant on the right. Our data show that this is due to the length of endocranial vascular compartment and the width of exocranial vascular compartment of the jugular foramen, clearly.

Keywords: vascular compartment, neural compartment, jugular foramen, internal acoustic canal, sigmoid sinus

O-41

Sinus occipitalis and fossa vermiana and their relationship with grooves in the posterior cranial fossa: an anatomical study

Yıldız S

Department of Anatomy, Gülhane Faculty of Medicine, University of Health Sciences, Ankara, Turkey

Objective: The occipital sinus is lies from the foramen magnum to the confluence of sinuses and important for posterior surgical approaches. The aim of this study is to investigate variations in the groove of the occipital sinus and internal occipital crest of the occipital bone, and to measure parameters of grooves in posterior cranial fossa. Relationship between the groove, internal occipital protuberence and fossa vermiana may be established.

Metod: In this study, 23 dry human occipital bones were investigated. They were examined and measurements were performed using digital caliper. A grid measured 1 cm × 1 cm was applied and the number was counted which represented the percentage of anatomical structures located in each grid. Their anatomical relationship was observed, and distance between internal occipital protuberance and foramen magnum was measured. Every fossa vermiana specified was photographed. Subsequently, vermian fossa was classified into two groups according to their shapes so that each of one had different form.

Results: Mean distance between, the internal occipital protuberance and foramen magnum was 38,68±5,49 mm. 23 dry human occipital bone was found on 5 fossa vermiana. In two of the samples, occipitalis sinus was in the form of a double groove.

Conclusion: This anatomical study about occipital sinus groove with associated anomalies will help surgeons for preoperative evaluation. Knowledge about these variations and its relationship will help to prevent inadvertent injury. Further interpretation and studies regarding preoperative radiological findings are needed.

Keywords: sinus occipitalis, vermian fossa, posterior cranial fossa

O-42

The incidence of inferior vena cava and left renal vein variations in routin abdomen CT

Gündoğdu E

Department of Radiology, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Various congenital variations occur due to the complexity of the embryological development of left renal vein (RV) and vena cava inferior (VCI). In cases where retroperitoneal surgery is required, these unknown variations can lead to mortal complications. In this study, it was aimed to present the types and frequency of left RV and VCI variations in abdominal computed tomography (CT) examinations done with various indications.

Methods: We conducted a retrospective evaluation of abdomen CT examinations performed in our department between January and June 2018. Without contrast examinations and CT scans that were not possible to evaluate due to technical or patient-related reasons were excluded from the study. The remaining 1240 CT scans were evaluated. The CT images were obtained with 64 (Toshiba, Aquilion 64, Japan) or 128 (GE, Revolution EVO, USA) section CT device. During the procedure 1 mL/kg non-ionic contrast material were infused with 3 mL/ sec by the intravenous route from antecubital vein to patients. The scans was performed in portal venous phase (65–70 sec.).

Results: 634 (51.12%) male and 606 (48.87%) female patients were included in the study. Their ages ranged from 16 to 87 (mean 53.8±14.2) years. Left retroaortic RV in 59 (4.75%) patients and left circumaortic RV in 34 (2.74%) patients were detected. One (0.08%) patient had double VCI and 1 (0.08%) patient had VCI which was interrupted in the hepatic segment and continuing with azygos vein. There was not a statistically significant difference in the frequency of left RV and VCI variations between males and females.

Conclusion: In various studies, frequency of retroaortic left RV 0.5–7.4%, circumaortic left RV 0.3–6.3%, and VCI variations were reported as 0.06–0.5%. Our left RV and VCI variation frequency results are consistent with the literature findings. Left RV and VCI variations are relatively common variations in society. They can be easily diagnosed with abdomen CT. Knowing these variations, especially before retroperitoneal surgery and vascular interventional procedures, can prevent serious complications.

Keywords: left renal vein; inferior vena cava; variation; computed tomography

O-43

The effect of metoclopramideon neural tube development at 48 hours chick embryos

Bilir A[1], Aslan E[2], Horata E[3], Güzel H[1], Atay E[1], Turamanlar O[1], Ertekin T[1]

[1]Department of Anatomy, Faculty of Medicine, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey; [2]Department of Histology and Embryology, Faculty of Medicine, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey; [3]Department of Orthopedic Prosthetic-Orthosis, Atatürk Health Services Vocational School, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey

Objective: Nausea and vomiting in pregnancy is a commoncomplaint and when long-standing, pharmacological treatment is often needed. However, thetoxic and teratogenic effects of antiemetic drugs on neural tube development are not clear. Genetic predisposition and some environmental factors play an important role in the development of neural tube defects. This study aimed to investigate the effects diffrent doses of Metoclopramide on the neural tube development in a chick embryo model that corresponds to the first month of vertebral development in mammals.

Methods: Seventy-five fertile, specific pathogen-free eggs were incubated for 28 hours and were divided into five groups of 15 egg seach. Metoclopramide was administered via the subblastoder microute at this stage. Incubation was continued till the end of the 48thhour. All eggs were then opened and embryos were dissected from embryonic membranes and evaluated morphologically and histopathologically.

Results: Use of increasing doses of metoclopramide delayed neural tube closure at the 48 hourse mbryos. Crown- rump length, somite number were significantly decreased by doses. There were statistically significant differences between control group and experimental groups ($p<0.05$) in crown-rump length and somite number. In addition; there were statisticaly significant differences ($p<0.05$) in neural tube positions (open or close) among the groups.

Conclusion: This study showed that development of neural tube are affectedin chicken embryos after administration of Metoclopramide. The exact teratogenic mechanism of Metoclopramide is not clear; tc embryo, neural tube

O-44

The effect of B_{12} vitamin on rat front (upper) extremity development against teratogenic effects of nicotine on embryonal development

Payas A[1], Nisari M[1], Ertekin T[2], Doğan K[1], Susar H[3], Al Ö[1] Yılmaz H[7]

[1]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey; [2]Department of Anatomy, Faculty of Medicine, Afyon Kocatepe University, Afyonkarahisar, Turkey; [3]Department of Anatomy, Faculty of Medicine, Yozgat Bozok University,

Objective: Tobacco smoke produced from tobacco leaves contains more than 4800 poisonous substances which threaten human health. Nicotine, one of these substances, easily crosses the placenta in pregnancy and causes umbilical cord and placental changes, ectopic pregnancy, premature birth, low birth weight, sudden death and developmental retardation. Antioxidants have been used to reduce or completely eliminate the teratogenic effect of nicotine. Vitamin B_{12} (Vit-B_{12}) is a powerful antioxidant. To investigate bone damage and possible protective effects of Vit-B_{12} against nicotine in rats exposed to nicotine at different doses during pregnancy using the double staining method.

Methods: 18 young female Wistar albino rats were used. Pregnant rats were randomly assigned to control, low dose nicotine (LDN), high dose nicotine (HDN), low dose nicotine + vitamin B_{12} (LDN+Vit-B_{12}), high dose nicotine + vitamin B_{12} (HDN+Vit-B_{12}) and Vit-B_{12}. Your pregnancy 1–20. 1 ml / kg of saline was administered to group control, 3 mg / kg nicotine in the LDN group, 6 mg / kg nicotine in the HDN group, group LDN+Vit-B_{12} received 0.5 mg / kg Vit-B_{12} in addition to 3 mg / kg nicotine, 0.5 mg / kg Vit-B_{12} in addition to 6 mg / kg nicotine in group HDN+Vit-B_{12} and Vit-B_{12} 0.5 mg / kg in Vit-B_{12} group. On the 20th day, a dual staining protocol was applied to the frontal limb long bones to examine the skeletal development of the fetuses removed from the uterus by cesarean section. Bone size, ossification length and percentage of ossification were calculated.

Results: There was no statistically significant difference between the LDN group and the control group; The HDN group was statistically significantly lower than the control group ($p<0.05$). It was determined that the neck size was higher in LDN+Vit-B_{12} and HDN+Vit-B_{12} groups than LDN and HDN groups and close to the control group. It was determined that the length of ossification decreased statistically ($p<0.05$) in the LDN and HDN groups compared to the control group and in the LDN+Vit-B_{12} and HDN+Vit-B_{12} groups, the osseous length increased significantly ($p<0.05$) and approached the control group.

Conclusion: It was found that nicotine used in pregnancy delayed ossification, Vit-B_{12} could increase ossification by decreasing this teratogenic effect.

Keywords: rat, nicotine, vitamin B_{12}, ossification, double skeletal staining

O-45

Curcumin reduces the sterile inflammation markers in oxidative stress induced clone 9 liver cells

Şahin E, Şahintürk V

Department of Histology and Embryology, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: The majority reason of liver diseases are oxidant-antioxidant imbalances. Increased free oxygen radicals result in impaired intracellular physiological events and ultimately cell and tissue damage. Sterile inflammation is the main pathway in many liver diseases and oxidative stress is one of the main factor

stimulating the sterile inflammation. Treatment approaches targeting oxidative stress are promising in the treatment of many diseases. Curcumin which can be obtained from various plants, is a powerful antioxidant, suggesting as an alternative treatment agent. The aim of this study is to investigate the effects of curcumin on sterile inflammation markers in oxidative stress induced clone 9 liver cells.

Methods: The groups of our study were control, hydrogen peroxide (H_2O_2), curcumin and H_2O_2 + curcumin. In our study, the IC50 dose (278 µM) of H_2O_2 detected in our previous studies was used to generate oxidative stress in the clone 9 liver cells. The protective dose of curcumin (20 µM) was determined with literature search. A sterile coverslip was placed in each well in six well plates and 5×105 cells were seeded onto this lamellas. After the cells adhered to the lamellas, curcumin was added and the plate was allowed to stand for 24 hours. At the end of the time, the curcumin-containing medium was removed and replaced with H_2O_2 and waited for 24 hours again. At the end of the period, the media were removed and the lamellae immunohistochemically stained with NLRP3 and Caspase 1 antibodies, known as sterile inflammation markers.

Results: NLRP3 and caspase 1 expression were not observed in the control and only curcumin treated group. In the oxidative stress induced group NLRP3 and Caspase 1 expression increased and addition of curcumin decreased the expression of these markers.

Conclusion: Curcumin reduces the expression of NLRP3 and Caspase 1 proteins involved in sterile inflammation in oxidative stress damaged clone 9 liver cells. Thus, curcumin has the potential to be used as an alternative therapeutic agent in the treatment of sterile infarction-based liver diseases.

Keywords: oxidative stress, vlone 9 liver cell, sterile inflammation, curcumin

O-46

Investigation of the potential protective effects of geraniol on cyclophosphamide-induced hepatotoxicity in rats

Canbaz HT[1], Kalkan SS[1], Kocabaş R[2], Sözen ME[3], Cüce G[1]

[1]Department of Histology and Embryology, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [2]Department of Biochemistery, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [3]Department of Histology and Embryology, Faculty of Medicine, Alanya Alaaddin Keykubat University, Antalya, Turkey

Objective: Cyclophosphamide is an alkylating agent used as an immunosuppressive and a chemotherapeutic. Therapeutic uses of cyclophosphamide are associated with organ toxicities due to the oxidative damage, which is occurred by the metabolism of cyclophosphamide. Geraniol is a monoterpenoid found in essential oils of plants such as rose, lavender and lemon. This natural molecule possesses various effects such as antibacterial, anti-inflamatory, antiangiogenic and antioxidative. In our study, it was aimed to investigate the antiapoptotic and anti-inflammatory effects of geraniol in liver damage caused by cyclophosphamide in rats.

Methods: 42 male Wistar Albino rats were used and they divided into six groups. Our study's experiment part took 14 days in total. Only geraniol was administered for the first 7 days, then geraniol and cyclophosphamide used together for the second week. Cyclophosphamide used as 500 mg / 10 ml ampoules and it was injected intraperitoneally. Geraniol was given in two different doses (100 mg/kg and 200 mg/kg) via oral gavage by dissolving in corn oil. The body weights recorded in the beginning and at the end of the experiment. Blood samples were taken to tubes with syringes from the hearts of subjects under the anesthesia at the end of 14 days. Blood serum analyzed for TAS, TOS, ALT, AST. Rats were sacrified after blood samples were taken and the abdominal cavity opened. Subsequently, the liver examined macroscopicially and then harvested for microscopic examination. Tissue sections examined by staining with hematoxylin eosin, toluidine blue and with immunohistochemistry for looking to NF-kB markers. Apoptotic index evaluated with TUNEL. The biochemistry and TUNEL results were compared using one-way ANOVA and immunohistochemistry were compared using the Mann-Whitney U-Test.

Results: We found that both the two dosage of geraniol that we used in our study treats the toxicity of cyclophosphamide.

Conclusion: The antitoxic effect of geraniol has been shown in our study and many other studies. Studies should be continued to determine the ideal dose and duration of usage of geraniol on human.

Keywords: cyclophosphamide, geraniol, liver

O-47

Experimental genital system torsion and ischemia-reperfusion models in rats

Gören H[1], Ay H[2], Özden H[2]

[1]Department of Anatomy, Faculty of Medicine, Düzce University, Duzce, Turkey; [2]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Testicular torsion or spermatic cord torsion is among the most common genital injuries seen in children and young men. The main lesion after testicular torsion is testicular ischemia. In delayed diagnosis cases, there is usually a loss of fertilization. Ovary torsion is a gynecological emergency that often occurs in women, which canbe seen in all ages, especially in premenarche and reproductive years. Adnexial torsion: the ovary or fallopian tube and the infundibulopelvicuteroovarian (UO) ligaments form at least 360 degrees of rotation around their axis. Torsion, often characterized by sudden, continuous, and nonspecific pain in the lower abdomen. The infertility problem results in the loss of both of the ovaryand fallopian tube. We aim to elucidate the experimental genital system ischemia-reperfu-

sion models in rats to understand the genital system torsions and the pathophysiological mechanisms that occur in women and men.

Methods: Methods for forming testicular torsion: 1) Intraabdominal junction of spermatic cord, 2) testis is removed from ilioinguinal incision or scrotal incision and rotated 270, 360, 720 degrees about its own axis.At the end of the desired torsion period, the scrotum skin sutures are cut and the test is manually detorsed counter clockwise to form reperfusion.In the case of ovarian torsion models, vascular clip application is performed by rotating the body around its own axis at least 360 degrees.

Results: It has been shown that the degree of torsion at 720º is sufficient to produce complete ischemia in the testis. The minimum time to damage the rat testicles is 1 hour. It produces a moderate acute vascular response in the 360 ° torsion rat testis generated for two hours. However, in the testis, which is torsioned at 720º for more than 4 hours, blood flow is blocked and focal infarcts are formed. Studies have shown that the formation of ischemia for 5 min with 360 ° torsion of the organ in the ovary produces minimal damage during reperfusion.However, in order to establish an ischemic pattern, the damage to the organ was examined by applying clips to a.ovarica and applying different times.

Conclusion: Torsion was found to be due to damage to the testis and ovary, to the degree and duration of the torsion.

Keywords: ovary, testis, ischemia-reperfusion

O-48

Antioxidant role of curcumin against nicotine's teratogenic effects on embryonic bone development

Yılmaz S[1], Güler H[1], Yılmaz H[2], Tokpınar A[1], Unur E[3], Nisari M[3], Ertekin T[4]

[1]Department of Anatomy, Faculty of Medicine, Yozgat Bozok University, Yozgat, Turkey; [2]Department of Therapy and Rehabilitation, Kozakli Vocational School, Nevsehir Hacı Bektaş Veli University, Nevşehir, Turkey; [3]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey; [4]Department of Anatomy, Faculty of Medicine, Afyon Kocatepe University, Afyonkarahisar, Turkey

Objective: This study aimed to demonstrate the effects of (6mg/kg) doses of nicotine on fetus skeletal system and the protection of curcumin low dose (50 mg/kg) high dose (100 mg/kg) against to these effects via double staining methods. For this purpose, we used 30 adult female Wistar-albino rats.

Methods: Pregnant rats were divided into 6 groups (n:5 rats for each groups). Groups was established as control, low doses of curcumin, high doses of curcumin, low doses of curcumin + nicotine, high doses of curcumin + nicotine and nicotine groups. While curcumin was applied to the experimental group during 1–20 of gestation days, nicotine was given to treatment groups as a preservative againt to curcumin. Fetuses were delivered in birth day on the 21th day of pregnancy and then their weights and lengths were measured. After that fetal bone structures were painted in red with Alizairn Red S, cartilage structures were painted in blue with Alcian Blue by using double staining Methods. Anterior extremity bone were invstigated under a stereo microscope and than their photos were taken. After that, the length of total bone and ossifying area and the rate of ossifying was calculated by using Image J program. The degree of ossification was determined on hand skeleton. Finally, the measured data were analyzed with SPSS.

Results: Considering the length of the bones; no differences were determined between the nicotine and the control groups, altough the total bone lengths were significantly shorten in the high dose of curcumin group ($p<0.05$).

Conclusion: The usage of nicotine during pregnancy causes the delay of skeletal ossification and the curcumin as a powerful antioxidant eliminates the teratogenic effects of nicotine.

Keywords: nicotine, curcumin rat, ossification

O-49

The effects of N-acetylcysteine against ionizing radiation-induced testicular damage

Topcu A[1], Mercantepe T[2], Tümkaya L[2]

[1]Department of Pharmacology, Faculty of Medicine, Recep Tayyip Erdoğan University, Rize, Turkey;[2] Department of Histology and Embryology, Faculty of Medicine, Recep Tayyip Erdoğan University, Rize, Turkey

Objective: Cancer worldwide was estimated to exceed 10 million, and it was predicted that more than six million people would radiotherapy treatment within the following five years. Our study investigated the effects of radiation resulting from RT on the testis at the molecular level, and prospectively considered the potential protective characteristics of antioxidants against testicular damage resulting from pelvic irradiation.

Methodss: TwentyFour male Sprague Dawley rats allocated three groups. The control group received oral saline solution alone for seven days. The ionizing radiation (IR) group, received 2 Gy single-dose irradiation such as to include the pelvic area. Ionizing radiation and NAC (IR+NAC) group, received oral administration of 300 mg/Kg NAC for five days before irradiation. At the end of the seven days, the IR+NAC group received single-dose 2 Gy pelvic irradiation. NAC at 300 mg/kg continued to be administered orally for the drug administration process was thus concluded in one week.

Results: Disorganization and vacuolization were observed in the epithelial layer in atrophic seminiferous tubules in the IR group. In addition, Johnsen's score decreased in the IR group. While testis tissue MDA and GSH tissue levels increased. NAC treatment group Johnsen's score and tissue GSH levels increased than IR group. On the other hand, tissue MDA levels decreased in the NAC treatment group.

Conclusion: The findings showed that ionizing radiation caused apoptosis in germinal epithelial cells led to the oxidative stress-mediated testicular injury. On the other hand, NAC may

be useful in the prevention of testicular injury by suppressed ROS production.

Keywords: N-acetylcysteine, oxidative stress, radiotherapy, rat, testis

O-50

Histological evaluation of the effectiveness of ABS (ankaferd blood stopper) and PRF (platelet-rich fibrin) on the healing of the synthetic bone graft (β-TCP: β-tricalcium phosphate) in rabbit calvaria

Çakır M[1], Ünlükal N[2], Erdoğan E[2], Dursunoğlu D[2], Kalaycı A[1]

[1]Manisa Oral and Dental Health Hospital, Manisa, Turkey; [2]Department of Histology and Embryology, Faculty of Medicine, Selçuk University, Konya, Turkey; [3]Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Selçuk University, Konya, Turkey

Objective: In recent years, a variety of research is being done to shorten the bone healing period. These are ABS (Ankaferd Blood Stopper) which has preliminary studies that showing increase in bone and wound healing and PRF (Platelet-rich fibrin) which is derives autogenously and contains growth factors. The aim of this study is to evaluate the efficiency of ABS+ β-TCP (β-TCP: β-Tricalcium phosphate: synthetic bone graft), TZF+ β-TCP and only β-TCP that placed in rabbit calvarial defects on bone healing in different time intervals

Metod: In this study 21 mature New Zealand rabbits were used. Animals were divided into three groups. 9 mm four bone defects were created on the rabbit calvaria for each. β-TCP only, combination of ABS+ β-TCP and combination of PRF+ β-TCP was performed to defects. One defect was left empty as a control group. The animals in first group were sacrified after 30 days, second group were sacrified after 90 days, third group were sacrified after 180 days. Histological and statistical analysis were performed.

Results: Analyzes showed that either PRF or ABS accelerate the healing of bone defects in early period, but no significantly difference between groups.

Conclusion: The results of this study verified that PRF and ABS increase new bone formation and has a positive effect on early bone healing.

Keywords: bone graft, beta tricalcium phosphate, Ankaferd, platelet-rich fibrin

O-51

Assessment of tongue, uvula and epiglottis radiological measurements in terms of gender

Şenol D[1], Özbağ D[1], Dedeoğlu N[2], Çevirgen F[1], Toy S[1], Ögetürk M[3], Köse E[1]

[1]Department of Anatomy, Faculty of Medicine, İnönü University, Malatya, Turkey; [2]Department of Oral and Maxillofacial Radiology, Faculty of Dentistry, İnönü University, Malatya, Turkey; [3]Department of Anatomy, Faculty of Medicine, Fırat University, Elazığ, Turkey

Objective: Tongue is an important organ innerved by five different nerves, it is made up of muscles, it can take different shapes and positions and it is located within cavitasorispropria. The soft palate, which is made up of muscle and membrane, is suspended from the posterior border of the hard palate in the shape of velum. The soft palate does not have a bone skeleton and it is attached to the posterior of the hard palate. Epiglottis, which has an elastic cartilage structure, is in the shape of leaf and it does not ossify throughout life. Length and thickness of tongue, uvula and epiglottis differ in men and women. The purpose of this study was to show how tongue thickness, tongue length, uvula thickness, uvula length and epiglottis length differed in men and women.

Methods: 90 women and 90 men between the ages of 18 and 65 participated in this study. Radiological images used in the study were obtained by using Newtom 5G (Verona, Italy) make CBCT (Cone beam computed tomography) at İnönü University, Faculty of Dentistry, Department of Oral and Maxillofacial Radiology. The images obtained as a result of CBCT scanning were assessed with NNT software program. Axial section thickness and voxel values of the images which were assessed had values of 0.25 mm.

Results: Women's tongue thickness median value was 31.15 mm, tongue length median value was 70.75 mm, uvula thickness median value was 9.65 mm, uvula length median value was 33.25 mm and epiglottis length median value was 16 mm. Men's tongue thickness median value was 35.34 mm, tongue length median value was 74.85 mm, uvula thickness median value was 10.95 mm, uvula length median value 37.2 mm was and epiglottis length median value was 19.1 mm.

Conclusion: According to Mann Whitney U analysis conducted, statistically significant difference was found between men and women in terms of tongue thickness, tongue length, uvula thickness, uvula length and epiglottis length ($p<0.05$).

Keywords: tongue, uvula, epiglottis, radiological measurements, gender

O-52

Estimating the person-specific location of the mental foramen

Babacan S[1], Işıklar S[2], Yıldız YM[1], Kafa İM[1], Gökalp G[3]

[1]Department of Anatomy, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey; [2]Medical Imaging Techniques Program, Vocational School of Health Service, Bursa Uludağ University, Bursa, Turkey; [3]Department of Radiology, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey

Objective: The mental foramen (MF) locates on the either sides of the antero-lateral aspects of the mandibular body. It provides the pathway for mental nerve and vessels. The knowledge of precise location of MF is quite important for anesthetists in order to block the mental nerve, also for surgeons and dentists for avoiding iatrogenic injuries during treatments. In addition, the zone between MFs is considered as safe zone for dental implants and

surgical procedures because of lack of the neurovascular structures. There have been many variations of the location of MF in the literature. The aim of this study was to develop regression formulas to estimate the person-specific location of MF for individual interventional applications.

Methods: The study was conducted on three-dimensional (3D) computed tomography (CT) images belonging to 50 adults (25 male, 25 female). The 3D-CT samples were taken from Radiology Department of Bursa Uludağ University Medical Faculty. 10 parameters were measured on mandible. SPSS 23.0 was performed for the statistical analyses.

Results: It was dedicated that 46 (46%) MF was mostly located on the vertical line between first and second premolar teeth. According to the results of the comparative statistical analyses, any significant differences between right and left sides weren't seen. The boundaries of MF location area were identified. Regression formulas like; Distance from posterior margin of MF to posterior border of mandible= 0.345 + (0.104 × the height of mandible + 0.706 × the breadth of the body of mandible) R=0.882; Adjusted R^2= 0.772; Standard error of the estimate=2.219 were developed in order to estimate the personel-spesific location of MF.

Conclusion: The precise location of MF could be more reliable for the surgical procedures specific to this region. We believe that the current study will be useful for dentists, anesthetists and surgeons for person-specific treatments.

Keywords: mental foramen, safe zone, individual treatment, mandible

O-53

Analysis of average index values of mandible

Yılmaz S[1], Tokpınar A[1], Güler H[1], Değermenci M[2], Patat D[3]

[1]Department of Anatomy, Faculty of Medicine, Yozgat Bozok University, Yozgat, Turkey; [2]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey; [3]Department of Anatomy, Faculty of Medicine, Lokman Hekim University, Ankara, Turkey

Objective: Mandible is the only viscerocranium bone moving in the skull. Mandible is active in speech and chewing functions; important bone for many areas such as anatomy, dentistry, anthropology, plastic and reconstructive surgery, jaw surgery. The aim of this study is to determine the average index values of the mandible and to contribute to the literature.

Methods: This study was carried out using digital calipers with a sensitivity of 0.01 millimeter (mm) on 15 mandibular dry bone specimens in Anatomy Department of Erciyes University. Age and gender were not differentiated in dry bone samples. Measurements were made on the mandible, mainly on the location of the mental foramen and mandibular foramen, and on the other 20 reference points of the mandible.

Results: In our study, there was no statistically significant difference when bilateral mandible data were compared (p>0.05). The average length of the mandibular foramento the deepest point of the mandibular notchwas found to be 20.39 mm on the right and 19.90 mm on the left. The distance between the mandibular condylar process and the gonion was 57.39 mm on the right and 56.69 mm on the left. The distance between the mental foramen and the tuberculum mentale was measured as 19.55 mm on the right and 19.86 mm on the left.

Conclusion: Knowing the normal anatomic structure and morphometric values of themandibular bone well may avoid any possible complications during operations in this area.

Keywords: mandible, morphometry, mental foramen, mandibular foramen

O-54

Comparison of chronological age with dental age determined using demirjian and willems methods in children living in Konya province

Korkut E[1]

[1]Department of Pediatric Dentistry, Faculty of Dentistry, Necmettin Erbakan University, Konya, Turkey

Objective: The assessment of child growth dentition is one of the most reliable areas of research in age estimation and numerous techniques have been developed on this subject. Morphological, metric, radiomorphological and radiomorphometric methods are used in estimation of dental age. In this study, correlation between chronological age and dental age determined using Demirjian and Willems methods in children living in Konya Province was evaluated.

Methods: The study is conducted on the digital panoramic radiograph of a sample size of 400 subjects (200 males and 200 females) ranging in age from 5 to 14 years. Dental ages were determined on panoramic radiographs using Demirjian and Willems methods and compared with chronological age. Data were analyzed using SPSS 21 software including. descriptive statistic, Kruskal-Wallis analysis.

Results: When the findings were evaluated, it was determined that there was a difference of -0.265 years between the chronological age and the dental age obtained by Demirjian method, and 0.103 years between the chronological age and the dental age obtained by Willems method. As a result of the statistical analysis, it was found that the difference between the chronological age and the dental age obtained by these two methods was not significant (p=0.371).

Conclusion: Determining age using Demirjian and Willems Methods are in consistent with chronological age in children living in Konya Province. It is thought that these two methods can be used as reliable methods in age determination.

Keywords: chronologic age, dental age, Demirjian method, Willems method

O-55

Evaluation of the effect of different voxel resolutions in determination of the fenestration type periodontal defects: an *in vitro* study

Cetmili H, Tassoker M, Sener S

Department of Oral and Maxillofacial Radiology, Faculty of Dentistry, Necmettin Erbakan University, Konya, Turkey

Objective: Periodontal disease is a chronic bacterial infection affecting the gingiva and alveolar bone. For the proper diagnose and follow-up of the periodontal disease, clinicians should be aware of the the technical factors that influence the interpretation of dentoalveolar structures and the quality of the images. When anatomic formations or periodontal defects that can not be detected due to superposition in two-dimensional radiographs are required to be displayed, cone-beam computerized tomography (CBCT) should be preferred as an upper diagnostic methods.The aim of this study was to evaluate the diagnostic accuracy of CBCT and the effect of two different voxel resolutions on the detection of *in vitro* periodontal defects.

Methods: Thefenestration type defects located in the alveolar bone regions of 10 dry skulls which provided in The Department of Anatomy of Necmettin Erbakan University were investigated. Then, two different CBCT scans were obtained from the dry skulls in the resolution of 0.160 mm and 0.250 mm. The data obtained from the CBCT scans at two different voxel resolutions given through the dry skulls were statistically compared.

Results: According to the results of analysis, it was determined that CBCT has sensitivity close to 100% in both voxel resolutions in detection of fenestration type defects.

Conclusion: Since the irradiation parameters used in CBCT scans affect the patient's radiation dose and screening duration, it is recommended to use the smallest possible field of view (FOV) firstly to reduce the radiation dose, rather than voxel size.

Keywords: CBCT, voxel, periodontal defect, fenestration

O-56

Evaluation of the incisive nerve with cone-beam computerized tomography for dental implant surgery

Bozkurt P[1], Görürgöz C [2], Kolsuz ME[2]

[1]Department of Oral and Maxillofacial Surgery, Faculty of Dentistry Ankara University, Ankara, Turkey; [2]Department of Dento Maxillofacial Radiology, Faculty of Dentistry, Ankara University, Ankara, Turkey

Objective: Even though the primary priority of the surgeon is 'Primum non-nocere', the incisive nerve is frequently sacrificed during dental implant surgery. The current study is a pilot study to determine safe surgical margins to protect the incisive nerve during dental implant surgery. The shortest and longest distances between incisive nerve and alveolar bone were assessed with respect to dental implant planning and lingual foramen presence was also evaluated.

Methods: The study was performed with 51 dry human mandibles belonging to the Caucasian race. Cone-beam computed tomography (CBCT) images were taken using a 0.200-mm^3 voxel size (Planmeca Promex-3D Helsinki, Finland). The edentulous crest - incisive nerve, the buccal cortex - incisive nerve, the lingual cortex - incisive nerve, the mandibular lower border - incisive nerve distances, incisive nerve diameters, lingual foramen presence, were assessed at 6 mm intervals. In the same way, the distance of incisive nerve for dental implant surgery was measured by determining the minimum 4 mm bone thickness in the field corresponding to the implant neck.

Results: While the incisive nerve seamed to disappear in the mandibular incisor tooth region, the distance between the incisive nerve and the crest was found to be shortened in the areas near the mental foramen.

Conclusion: Protecting the incisive nerve near the mental foramen area seamed to be harder than the midline. It is thought that using short and thick implants in these areas can preserve the incisive nerve.

Keywords: incisive nerve, dental implant surgery

O-57

Prevalence and distribution of hypodontia

Akkoç RF[1], Emre E[1], Gören H[2], Ögetürk M[1]

[1]Department of Anatomy, Faculty of Medicine, Fırat University, Elazığ, Turkey; [2]Department of Orthodontics, Faculty of Dental Medicine, Fırat University, Elazığ, Turkey

Objective: Hypodontia is used for the innate absence of primary or secondary teeth, except for third molar teeth. In addition, hypodontia refers to congenital absence of 1-5 teeth. There is evidence that there is a significant association between epithelial ovarian cancer and hypodontia. The aim of this study was to determine thef requency and distribution of hypodontia in children between the ages of 8–16 years who applied to Firat University Faculty of Dentistry and Elazig Public Oral and Dental Health Center within a year (01.02.2017–01.02.2018).

Methods: In this study panoramic X-rays of all suitable children applied to all public dental health centers in Elazig in a year were retrospectively evaluated to assess the prevalence and distribution of hypodontia.

Results: The prevalence of hypodontia was 28 in 1219 in females (2.29%), 21 in 1316 in males (1.59%), and 49 in 2535 in total (1.93%). Missing teeth were more prevalent on the left than on the right. The most common congenital missing teeth were the left mandibular second premolar, followed by the right mandibular second premolar.

Conclusion: It was determined that prevalence of hypodontia was higher in girls, hypodontia was more common on the left

side teeth, and second premolar teeth were most commonly missing. In addition, data from this study were considered to be a data source for risk assessment of an important disease associated with hypodontia, namely ovarian cancer.

Keywords: hypodontia, panoramic, prevalence

O-58

Anatomic and clinical assessment of odontoid fractures

Özevren H

Department of Neurosurgery, Dicle University School of Medicine, Diyarbakır, Turkey

Objective: Available data on the distribution of odontoid fracture types are rare. This study was designed for clinical and anatomical evaluation the rates of second cervical vertebra (C2) odontoid fractures and to present the specific incidence of groups according to age and sex.

Methodss: 32 cases of odontoid fractures who applied to our clinic between January 2013 and March 2017 were retrospectively reviewed. C2 odontoid fracture types were defined by evaluating the age, sex, event cause, anatomic, clinical findings and cervical spine CT (computed tomography) sections of each case. The results were evaluated statistically.

Results: There were 32 C2 odontoid fractures [15 (46.9%) male and 17 (53.1%) female] who were referred to the neurosurgical clinic. The mean age was 38.63±21.44 (2–87). The most frequent reasons for application were in-vehicle traffic accidents 18 (56.3%), fall 6 (18.8%), outside-vehicle traffic accidents 4 (12.5%), assault 3 (9.4%), breast Ca. 1 (3.1%) due to metastasis. In terms of odontoid fracture types; Type I 4 (12.5%), Type II 23 (71.9%), Type III was 5 (15.6%). 13 (40.6%) anterior, 7 (21.9%) posterior and 12 (37.5%) nondeplase were applied for odontoid fracture displacement in our cases. Pain and tenderness in the neck region of 29 patients (90.6%) were present in C2 odontoid fractured patients who applied to our clinic, while 3 (9.4%) patients presented with hemiparesia. The Frankel scale of these patients; 1 patient (3.1%) applied with B, 2 (6.3%) with D, 29 (90.6%) with E scale.

Conclusion: Odontoid fractures do not always come to us with spinal cord injury, the initial finding can often be neck pain. Cranial CT is an important diagnostic tool for these patients. In this study, C2 odontoid fracture patients who applied to our clinic were etiologically, anatomically and clinically evaluated. The aim of the study is to draw attention to the importance of this issue by assessing the available data on odontoid fractures that have not been adequately studied in the literature in many respects.

Keywords: odontoid fracture, computerized tomography, Frankel scale

O-59

Anatomic and histological analysis of chiasma plantare and long flexor tendons of the foot on human fetuses

Elvan Ö[1], Beger O[2], Karagül Mİ[3], Uzmansel D[2], Yılmaz ŞN[3], Kurtoğlu Olgunus Z[2]

[1]School of Health, Mersin University, Mersin, Turkey; [2]Department of Anatomy, Faculty of Medicine, Mersin University, Mersin, Turkey; [3]Department of Histology and Embryology, Faculty of Medicine, Mersin University, Mersin, Turkey

Objective: There have been discrepancies regarding gross anatomic and biomechanical studies about formation and composition ofchiasma plantareand long flexor tendon of lesser toes. The aim of present study was to investigate connections between flexor hallucis longus (FHL) and flexor digitorum longus (FDL), detailed structure of chiasma plantare composed of FHL, FDL tendons and quadratus plantae (QP),precise composition of the long flexor tendons of lesser toes.

Methods: Totally 66 feet of formalin- fixed fetus cadavers (25–40 weeks) were dissected. In 28 specimens, identification of the connections between FHL and FDL tendons and morphometric measurements of these tendons and the connection/slip (S) were conducted, bilaterally. Composition and restoration of chiasma plantare and long flexor tendons of lesser toes were traced histological by analyzing movements of the tissues on the sequential coronal sections. To obtain section, entire structure of chiasma plantare and the four long flexor tendons in 5 specimens were removed, bilaterally. The numbers of layers constituting chiasma plantare were counted. The tendons and muscles that formed layers were specified. Each of four flexor tendon arising from the chiasma plantare was analyzed regarding contribution from tendon of FHL, FDL and QP.

Results: In anatomic analyses, Sfrom FHL to FDL (48/56 sides) and cross connections (8/56 sides) between these tendons were seen. When compared width and length parameters of S, FDL and FHL, no statistically significant differences were observed regarding side and gender. In histological analyses, S of FHL to FDL separated from lateral and/or deep side of FHL tendon. In 6 out of 10 sides, S separated from FHL with tight connective tissue and 4 out of 10 sides, it separated from FHL withloose connective tissue. The involvement of S to FDL and QP: it was in 6/10 sides only to deep surface of QP and in 4/10 sides loosely to FDL and tightly to QP, together. The constitution of chiasma plantare: single layer in 2/10 sides, two layers in 6/10 sides and triple layers in 2/10 sides were found. Variable contributions of FDL, S and QP were seen on formation of layers. The participation of S to long flexor tendons: S participated only second toe in 5/10 sides, second and third toes in 3/10 sides, second to fourth toes in 1/10 side. S participated to the third and fourth toes, very rare in literature, in only one side. The composition of long flexor tendons of lesser toes: Different from literature, second toe composed of only S, third toe composed of only QP and fifth toe composed of only QP in one side of three cases. By

analyzing tissue movements throughout the sequential sections, we exposed the layers constituted the chiasma plantare andcomposition of second to fifth long flexor tendons of the toes.

Conclusion: This study was the first about FHL/FDL tendons and QP that evaluate composition of the chiasma plantare and long flexor tendons of foot histologically. The findings of this study can help to explain variable results of clinical, functional and gross anatomical studies.

Keywords: chiasma plantare, long flexor tendons, flexor hallucis longus, flexor digitorum longus, quadratus plantae, fetus

O-60

Can palmaris longus muscle tendon abscess be associated with carpal tunnel syndrome?

Yılmaz B, Bahadır K, Ünver Doğan N, Karabulut AK, Fazlıoğullari Z

Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: The aim of this study was to determine the presence and number of tendon (MPLT) of palmaris longus muscle in patients with carpal tunnel syndrome (CTS) and to investigate the relationship between MPLT variations and CTS by sex.

Methods: The study consisted of two groups of 100 controls (without CTS) and 88 CTS individuals. MPLT was evaluated by conventional Methods in the right and left upper extremities. The data of the KTS group were obtained from a total of 100 CTS extracts of 88 volunteers who received and treated CTS between 2011–2018. The descriptive statistics and chi-square test were used to evaluate the significance of the data in the "SPSS 16.0" statistical program.

Results: In the absence of MPLT, 28% of the control group (32% in females, 19.7% in males) and 45% (4% in females and 67.5% in males) of the control group were observed. One tendon of MPLT was observed in 67% (65.8% in females, 69% in males) of the control group, 50% (51% in females, 67.5% in males) of CTS individuals. (1.5% in healthy women, 11.2% in healthy men, 4.3% in female patients, and 12.5% in male patients) in control and 2% of CTS individuals with MPLT.

Conclusion: Variations in the number of MPLTs and CTS presence were higher in women than in men. While there was no significant difference in the number of tendons in control and CTS subjects in women, it was determined that the incidence of CTS in non-MPLT subjects was high in males. As a result, it was determined that the absence of MPLT in men was associated with CTS.

Keywords: palmaris longus muscle, carpal tunnel syndrome, tendon variation

O-61

An overview of the curvature measurement methods in scoliosis

Gölpınar M[1], Say F[2]

[1]Department of Anatomy, Faculty of Medicine, Düzce University, Düzce, Turkey; [2]Department of Orthopaedics and Traumatology, Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey

Objective: Scoliosis is defined as a lateral curvature of the spine in the coronal plane generally accompanied by the spinal rotation. Several approaches have been described for assessing coronal curvature of the spine. The aim of this study is to provide overview of the existing approaches for quantitative evaluation of coronal curvature in scoliosis.

Methods: Several methods have been described to evaluating the degree of the scoliosis on medical images. According to literature radiographic measurement techniques were evaluated for measuring coronal curvature of the spine.

Results: Cobb method is most frequently used technique because it provides a simple and quick assessment of coronal curvature in scoliosis. Lateral tangent method is practical approach for coronal curvature measurement but its measurements can affected by the concave shaped lateral wall of the vertebrae. Ferguson and Centroid methods involve multiple steps and are easily influenced by morphological changes in vertebral body.

Conclusion: Cobb method is most widely used technique for quantitative evaluation of the lateral deviation of the spine in clinical practice. This methodis also accepted the gold standard to quantifying the magnitude of the scoliosis curvature in the anteroposterior radiographs.

Keywords: Centroid method, Cobb method, lateral tangent method, measurement, scoliosis

O-62

Radiological evaluation of lateral acromion angle, critical shoulder angle, acromion type and acromion index in supraspinatus tendon pathologies

Asal N

Department of Radiology, Faculty of Medicine, Kırıkkale University, Kırıkkale, Turkey

Objective: Rotator cuff tears may be due to intrinsic, extrinsic, traumatic causes. Extrinsic factors such as acromial morphology and variable scapulothoracic movement cause rotator cuff compression. In the study, it was aimed to determine the morphologic variations of supraspinatus tendon pathologies on magnetic resonance images (MRI).

Methods: In this study was determined 109 patients who underwent shoulder MRI between June 2017 and March 2018 in the study as retrospectively. Supraspinatus tendon and acromion morphology were evaluated; lateral acromion angle (LAA), critical shoulder angle (CSA), subacromial distance and

acromion index were measured. Supraspinatus tendon pathologies were categorized as 0, 1 2, 3. Acromion type were evaluated as 1: flat, 2: curve, 3: hooked, 4: convex. In statistical analysis; Bonferroni correction was made to prevent materiality inflation. Correction formula (p=0.05/ number of comparisons: p=0.05 / 6: p<0.0083) was considered significant.

Results: There were 51 male and 58 female in patients. The mean age was 49.7±14 years. In supraspinatus tendon groups 0: normal (n=27), 1: tendinosis (n=22), 2: partial tear (n=37), 3: full thickness tear (n=23). There was significant difference between LAA and CSA values between the groups (p<0.0083). Subacromial distance and acromion index values were not significant (p>0.0083). In the LAA values; there was not found a significant difference between groups 2 and 3 (p>0.0083), there was significant difference between the other subgroups (p<0.0083). In the CSA values; there was significant difference between groups 0 and 3 (p=0.003), no significant difference between the other subgroups (p>0083). There was a negative correlation between LAA and CSA (R=-0.531, p=0.000). In addition, type 3 acromion were more common in tendinosis, partial tears and full-thickness tears.

Conclusion: Type 3 acromion, an effective factor in supraspinatus tendon ruptures. In addition, decreased LAA and increased CSA was detected in tendon ruptures.

Keywords: acromion, magnetic resonance imaging, supraspinatus

O-63

Searching incidence of plantaris tendon in ankle MRI

Aslantürk O[1], Çimen AÖ[2], Çavuş F[3], Özbağ D[4]

[1]Department of Orthopaedics and Trauma, Malatya Educational Research Hospital, Malatya, Turkey; [2]Department of Radiology, Malatya Educational Research Hospital, Malatya, Turkey; [3]Department of Physiotherapy, Malatya Educational Research Hospital, Malatya, Turkey; [4]Department of Anatomy, Faculty of Medicine, İnönü University, Malatya, Turkey

Objective: Musculus plantaris is a short, slim muscle with a long tendon, orginating from lateral supracondylar aspect of femur and inserting on medial aspect of calcaneus. In literature, it has been shown that the musculus plantaris is absent about %2.5–20 of the people. In current study, we aimed to evaluate incidence of plantaris tendon in ankle magnetic resonance imaging (MRI).

Methods: Ankle MRI's studies performed between January and April 2018 in Malatya Educational Research Hospital retrospectively evalulated. Inclusion criterias were patients age 16 or older and axial sections 4 mm or thinner.

Results: Two hundred and fifty four ankle MRI of 231 patients included to study. All images evaluated by a radiologist and an orthopaedist. Mean age of patients was 38.46 years (range 16–68 years). One hundred and sixteen of patients were male, 115 were female. Right ankle was studied in 107, left ankle in 101 and 23 bilateral. Plantaris tendon was visualized in 143 (%56.29) ankle and was not visualized in 111 (%43.7) ankle. In our study, incidence of plantaris tendon was %56.29 whisch is too low from previously reported incidences (%80–100) in cadaveric studied in literature.

Conclusion: In an MRI study, Saxena et al. reported incidence of plantaris tendon as %62.8 in 86 ankle. In same study authors implies that section thinner than 4 mm could be helpful to determine plantaris tendon. We evaluated sections 4 or 3.5 mm intervals in our study. In conclusion, we think pozitive predictive value of MRI to detect plantaris tendon is reliable but absens of the tendon is not reliable.

Keywords: plantaris tendon, ankle, radiology

O-64

Lomber facet joint tropism research in Turkish population: morphometric study

Eroğlu A

Haydarpaşa Sultan Abdülhamid Han Education and Research Hospital, Istanbul, Turkey

Objective: In this study, we demonstrated the angular and facet tropism (FT) rates of lumbar facet joints by magnetic resonance imaging (MRI).

Methods: Lumbar MRI examinations of 93 patients (42 females, 51 males) between the ages of 23 and 78 with lumbar spondylosis were performed on L1-2, L2-3, L3-4, L4-5, L5-S1 bilateral facet joints The angle was measured on the axial plate between 2016 and 2018 years. Standard values (SV) were found by calculating all angles. If the difference between the reciprocal facet joint angle of both sides is 6 ° C smaller than SD, there is no tropism and 6 ° bigger than SD is considered as tropism. A total of 930 angles were measured. Bilateral facet angles to the L1-2 L5-S1 distance were measured at the axial section. In each level, the number of Facet tropism and the average facet angles were calculated.

Results: A total of 930 facet angles were measured in 93 patients with Lomber Spondylosis. At L1-2 level, there was no tropism at 90.3% (n=84), 9.6% (n=9), at middle level tropism, at L2-3 level; There was no tropism in 82.7% (n=77), 17.2% (n=16) in tropism, 75.2% in L3-4 level (n=70) and no tropism in 24.7% -5.5% (n=49) had no tropism, 47.3% (n=44) had tropism, 65.5% at L5-S1 level had no tropism and 34.4% (n=32) 'was found to be tropism. Facet angle averages are in L1-2; 33.76±4.55 at L2-3; 35.23±5.34 at L3-4; 36.54±5.43 in L4-5; 41.38±4.29 at L5-S1; 44.67±4.2. The number of facet joint tropism increased as the lower distance increased. The increase in L4-5, L5-S1 distance was statistically significant (p<0.05). While the mean angle of the facet joints increased significantly (p<0.05 for all values), the increase in facet joint angle difference did not reach a significant level (p>0.05 for all values).

Conclusion: This study shows that facet angles are not the same at different levels of the lumbar spine. The average facet angles gradually increase from L1-L2 to L5-S1. The high

prevalence of FT in L4-L5 and L5-S1 may explain the more frequent occurrence of degenerative disorders at these levels.

Keywords: facet tropism, lomber spondylosis, MRI

O-65

Morphometric assessment of the external aperture of carotid canal for lateral surgical approach

Özalp H[1], Beger O[2]

[1]Department of Neurosurgery, Faculty of Medicine, Mersin University, Mersin, Turkey; [2]Department of Anatomy, Faculty of Medicine, Mersin University, Mersin, Turkey

Objective: This study aims to compare right-left sides of the external aperture of carotid canal (CC) and to determine the location according to certain anatomical landmarks.

Methods: Twenty human dry skulls were included in the study, present in the inventory of Mersin University Faculty of Medicine – Department of Anatomy. A digital caliper and a digital image analysis software were used to obtain numerical values.

Results: The surface area, length and width of CC were found as 37.86±11.24 mm^2, 8.02±1.09 mm, and 6.86±0.90 mm, respectively. The angles between lateral wall-CC-zygoma root and lateral wall-CC-mastoid process were determined as 37.11±6.87 and 42.22±6.40, respectively. Distances between CC and mastoid process, zygoma root and lateral wall were respectively found as 26.71±2.92 mm, 30.46±1.95 mm, and 26.19±2.84 mm.

Conclusion: Significant side difference was not observed in relation with the numerical data of CC. Surgeons can reach the carotid canal when they move medially to the base of the skull, at an angle of about 40 degrees to the mastoid process or the zygoma root, and at 2.5 cm depth.

Keywords: carotid canal, zygoma root, mastoid process, skull, lateral approach.

O-66

A trial of the gender determination using the measurement of the lengths of the phalanges and the proportion of each phalanx to the total length of phalanges on direct hand X-ray

Özsoy T[1], Öner Z [2], Öner S[3]

[1]Department of Anatomy, Institute of Health Sciences, Karabük University, Karabük, Turkey; [2]Department of Anatomy, Faculty of Medicine, Karabük University, Karabük, Turkey;[3] Department of Radiology, Faculty of Medicine, Karabük University, Karabük, Turkey

Objective: Anthropometric measurement of bones is widely used in gender determination as it is a cheap and easy Methods. The sternum, metacarpals, the phalanges and especially the pelvis and all cranial bones are used in gender determination. In this research, the length of the phalanges and the proportion of each phalanx to the total length of the related finger phalanges and their usability in gender determination are examined through direct hand X-ray images.

Methods: In this research, X-ray images belonging to 60 individuals (30F, 30M) between the ages of 20–40 were taken from the hospital archive with the approval of the university's local ethics committee. Length measurements of phalanges were made with the Horos software. The proportion of each phalanx's length to the total length of the related finger phalanges was calculated. The data's effectiveness in gender determination was assessed by the discriminant analysis test applied to the data.

Results: According to results of measurement, average lengths of proximal, middle and distalphalanges were measured as 4.17 cm, 2.62 cm, 2.03 cm in males respectively and 3.82 cm, 2.40 cm, 1.79 cm in females respectively. Males' phalanxes were longer than that of females' ($p \leq 0.05$). The proportion of the proximal, middle and distal phalanges to each phalanges length of the related finger is measured as 50.76%, 29.37%, 25.75% in males respectively and 51.22%, 29.55%, 25.14% in females respectively (p: 0.292, p: 0.405, p: 0.545). There were differences between phalanges proportion of males and females. When the proportion of each phalanxes to total length of the related finger phalanxes was examined through Discriminant Analysis. It was seen that analysis predicted the males with 63.3% accuracy and the females with 70.0% accuracy ($p>0.05$). When all finger lengths and the proportion of each phalanxes to total length of the related finger phalanxes are examined together with Discriminant Analysis, it was seen that the male individuals were predicted with 80.0% accuracy and the female individuals were predicted with 83.3% accuracy ($p>0.05$).

Conclusion: Although it is possible to determine gender through Discriminant Analysis by using phalanges lengths and their proportion, its discrimination power is low. However, by using phalanges lengths and their proportion together with Artificial Neural, we believe that the discrimination power in gender determination can be increased.

Keywords: phalanx, length, gender analysis, direct radiography, discriminant analysis

O-67

The evaluation of distances among the foramina of the cranial fossae and the midline in high-resolution cranial CT images

Verimli U[1], Buğdaycı O[2], Yıldız SD[1], Özkılıç E[1], Özdoğmuş O[1]

[1]Department of Anatomy, Faculty of Medicine, Marmara University, Istanbul, Turkey; [2]Department of Radiology, Faculty of Medicine, Marmara University, Istanbul, Turkey

Objective: Asymmetries encountered in human skull are notably common and they are crucial in clinical interventions in the region. The asymmetries of the right and the left sides of the skull may be due to numerous reasons such as genetic and envi-

ronmental factors, or the combination of the previous two. The detailed anatomical knowledge of the base of the skull iscrucial in complex surgical procedures where various approaches are used. The aim of this study is to evaluate the relationship among the foramina in the base of the skull and the midline in both adult genders using high-resolution cranial CT images.

Methods: 55 female and 64 male cranial CT images of adult patients (18 to 40 years of age) without any apparent cranial pathology were obtained from Marmara University School of Medicine Department of Radiology and were evaluated utilizing Radiant Radiological Evaluation Software. The results were statistically evaluated via paired t-test using GraphPad Prism v 5.0 software.

Results: According to the statistical results obtained, significant differences were found between the distances of foramen ovale (right and left) to the midline (p=0.0294), between the distances of the hypoglossal canal (right and left) to the midline (p=0.0159) in the females. In the males, significant differences were found between the distances of foramen spinosum (right and left) to the midline (p=0.0013) and in both genders, significant differences were found between the distances of internal acoustic meatus (right and left) from the midline (p=0.0104).

Conclusion: To the best of our knowledge, such measurements of cranial asymmetries may help to describe anomalies encountered in radiological evaluations and contribute to the surgical interventions related to the skull base region.

Keywords: foramen, middle cranial fossa, posterior cranial fossa, midline, distance

O-68

Congenital anomalies of the pancreas: computed tomography findings

Kadıyoran C

Department of Radiology, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: We aimed to present congenital anomalies of the pancreas in our study in the presence of CT findings of our patients

Methods: Anatomic anomalies of the pancreas are classified as either a fusion anomaly (pancreas divisum), migration anomaly (annular pancreas, ectopic pancreas), or duplication anomaly (numbe ror form variation). We evaluated anatomic variants predisposing to pancreatic anomalies, specific pancreatic or peripancreatic diseases in the context of CT findings.

Results: The main ones of these congenital diseases are; Annular pancreas: It is a rare condition in which the second part of the duodenum is surrounded by a ring of pancreatic tissue. This malformation is diagnosed in the first weeks of life, and few cases have been reported in adults. Annular pancreas is a rare congenital anomaly in which a ring of pancreatic tissue surrounds the duodenum. It is estimated that it occur in one of every 12.000–15.000 live births. The annular pancreatic tissue forms a complete (25%) or partial (75%) ring around the descending duodenum. The incidence of annular pancreas has been reported to be 0.005%–0.015%. It is frequently associated with other congenital abnormalities such as esophageal atresia, imperforateanus, congenital heart disease, malrotation of the midgut, and Down syndrome. Pancreas divisum (PD): It is the absence of fusion or incomplete fusion of the ventral and dorsal pancreas, mainly of the drain age ducts (Wirsung' and Santorini). PD is the most common congenital malformation of the pancreas. By definition, it is a pancreas with two separate ducts and independent drain age orifices. Pancreas divisum is the most common congenital anomaly of the pancreas. The ventral and dorsal ducts fail to fuse together ,resulting in pancreas divisum. The body, tail, andpart of the head of the pancreas (dorsal pancreas) drain through Santorini's duct into the minor papilla, while another part of the head (ventral pancreas) drains through Wirsung's duct into major papilla. This anomaly is found with an incidence of 3%–7% in patients who are undergoing ERCP. Common bile duct syndrome: It is a congenital malformation of the pancreatic and biliary ducts, whose clinical relevance results from the anomalous pancreatic obiliary junction. Ectopic pancreas: It is defined as pancreatic tissue in an aberrant location, with no connection to the main organ. Dorsal pancreatic agenesis: It is a rare congenital anomaly of the pancreas characterized by the absence of the corpus and tail of the pancreas Congenital pancreatic cyst: It is a rare disease, particularly in adults. The cysts are located in the body and tail of the pancreas and have no communication with the pancreatic duct. Choledochal cysts: Which are rare and more common in female than male patients, approximately 33%–50% of reported cases come from Japan, where the frequency in some studies has approached %0.1.

Conclusion: The pancreas is an organ in which different congenital anomalies are seen, and in order to recognize the pathogenesis of congenital pancreatic diseases, the developmental stages of the pancreas and its anatomy will be helpful in diagnosing the diseases

Keywords: pancreas, congenital anomalies, computed tomography

O-69

Kâmus-i Teşrih: an unknown and probably the first Latin-Turkish dictionary of anatomy

Aldur MM, Fırat A

Department of Anatomy, Faculty of Medicine, Hacettepe University, Ankara, Turkey

Objective: In this presentation we want to introduce an extremely rare book published in Germany (Morgen und Abendland Verlag, Berlin, Karlstr. 10 – Kaviani Matbaası, Berlin, Leibnizstr. 43) in 1923 called 'Kâmus-i Teşrih'. This book can be accepted as the first Latin-Turkish dictionary of anatomy when considered seperately from the medical dictionary called 'Lugat-ı Tıb'.

Methods: 'Kâmus-i Teşrih' as a word means 'dictionary of anatomy' in intralinguistic translation. This Latin-Turkish dictionary is written in Latin and Ottoman Turkish. The heading of the dictionary in Latin is 'Vocabularium anatomiaea'.

Results: Kâmus-i Teşrih was written by Zeki Haşmet Kiram, M.D. First six pages of the book composed of the title, dedication, abbreviation, legends and preface. Between pages 7–84, anatomical terms are listed in Latin in alphabetical order and their meanings are written in Ottoman Turkish. Pages 85 and 86 includes the last word of the author. In page 87 you will find the list of other books of the author. Last pages includes some medical advertisements. The original copy is found in the National Library (Code: 06 Mil EHT A 36083).

Keywords: anatomy, dictionary, Latin, Turkish, Ottoman language

O-70

Miftâh-ı Teşrih: an unknown and probably the first Ottoman Turkish atlas of anatomy

Aldur MM[1], Şeker M[2]

[1]Department of Anatomy, Faculty of Medicine, Hacettepe University, Ankara, Turkey; [2]Department of Anatomy, Meram Faculty of Medicine, Necmettin Erbakan University, Ankara, Turkey

In this presentation we want to introduce an extremely rare book published in Ottoman Turkish (Ottoman School of Medicine Printing House) in 1873 called 'Miftâh-ı Teşrih'. This book can be accepted as the first Ottoman Turkish atlas of anatomy. 'Miftâh-ı Teşrih' as a word means 'key of anatomy' in intralinguistic translation. This anatomy atlas is a translation of Dr. Joseph Nicolas Masse's 'PETIT ATLAS COMPLET D'ANATOMIE DESCRIPTIVE DU CORPS HUMAIN' in French. Miftâh-ı Teşrih was translated by Hristo Stanbulski, M.D. [Vice President of Ottoman School of Medicine Anatomy Department].The book contains 229 pages [4+6+112+14+93] totally. [Özege: 13513]

Keywords: anatomy, atlas, Latin, Turkish, Ottoman language

O-71

A new method for sectional and radiologic anatomy education: play-dough modelling

Gürses IA

Department of Anatomy, Istanbul Faculty of Medicine, Istanbul University, Istanbul, Turkey

Objective: Sectional and radiologic anatomy educationis formatted as comparison of cadaveric sections with radiologic images of different modalities. This classical Methods provides a limited level of knowledge and competence for medical students. Nevertheless, this Methods fails to simplify complex anatomic relations and usually is not student centered. Development of a student centered and efficient educational Methods encouraging active learning, which may be an alternative to classical sectional radiologic anatomy education and presentation of this new Methods was aimed.

Methods: Sectional anatomy practices using play-dough modeling in various laboratory hours are beeing carried out at the Istanbul Faculty of Medicine since 2013. Lectures within different system sections consist of building models of anatomic structures with colored play-dough, consecutive sectioning of these models, and comparison of sections with cadaveric or radiologic images.

Results: Student feed-back revealed; increased interest in anatomic regions with complex anatomical relations such as periventricular nuclei and thorax, simplification of three dimetional relations, and building different models during free time.

Conclusion: Following student attraction, this new educational Methods was implemented as an elective for the 2018-2019 academic year. Additionally, new research studies are planned for evaluating the effectiveness of this method compared with classical educational model. Furthermore, research on the integration of play-dough modeling into post-graduate clinical training could be performed.

Keywords: anatomy education, cross-sectional anatomy, radiologic anatomy, play-dough modelling

O-72

Assessment of theses in the field of anatomy between 1969–2018 in Turkey

Bahşi İ[1], Orhan M[1], Karatepe Ş[2]

[1]Department of Anatomy, Faculty of Medicine, Gaziantep University, Gaziantep, Turkey; [2]Student of Medicine, Gaziantep University, Gaziantep, Turkey

Objective: The aim of this study was evaluate the qualitative characteristics, types and contents of the thesis written in anatomy in Turkey.

Methods: The theses (master, doctorate and specialty in medicine) in the field of anatomy were searched in the database of the National Thesis Center of The Council of Higher Education between 1969–1 March 2018. The type of the materials used, the advisor's academic title and the universities that graduated postgraduate students were examined.

Results: Between 1969 and March 1, 2018, there were 700 theses in the field of anatomy. 322 (46%) of these theses are master thesis and 252 (36%) are doctoral thesis. 574 of these theses originated from institute of medical sciences, 126 (%18) originated from faculty of medicine, of which are the specialty in medicine. 514 (73.4%) of these theses were reached the full text, 186 (26.6%) were not reached. 129 of these theses that were reached the content were classified as rat/animal, 125 as cadaver/fetus, 59 as live subjects, 52 as anthropometric measurements, 13 as bone measurements and 136 as other studies. 378 (54%) of the advisor's academic titles were professors, 214 (30.6%) were associate professors and 93 (13.3%) were assis-

tant professors. In 15 theses, the advisor information was not available. It was observed the second advisor in 54 theses. 30 (55.6%) of second advisor were professors, 15 (27.8%) were associate professors and 9 (16.7) were assistant professors. There are 43 universities giving the graduate education. There are 25 universities give masters, doctoral and specialist education. Four universities graduated only master, 4 universities master and specialty in medicine, 5 universities master and doctorate, 2 universities doctorate and specialty in medicine, 2 universities only specialty in medicine and 1 university only doctorate.

Conclusion: It is noteworthy that the number of graduates of specialty in medicine is very low compared to graduates of doctoral education. Inadequate quotas and full-time training are among the reasons for this situation. In this study, it is thought that the anatomy of the post-graduate education programs will be determined and will illuminate future graduate education programs.

Keywords: thesis, master, doctorate and specialty in medicine

O-73

From non-cadaver education to tech-advanced anatomy laboratories in historical process

Yılmaz S[1], Kafa İM[2], Erer Kafa S[3]

[1]Medical History and Ethics, Institute of Health Sciences, Bursa Uludağ University, Bursa, Turkey; [2]Department of Anatomy, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey; [3]Department of Medical History and Ethics, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey

Objective: The studies and trainings focused on cadavers in our country have not been made or deficient for many years before the breakthroughs in modern medicine education. With the opening of the Modern Medical School (1827), a modern medical education has begun and the anatomy lessons have been able to begin with the cadaver after the permission of cadaver dissections in 1841. After the permission, there have been problems with how and from whom the cadaver will be supplied. The most important problem today is also cadaver donation and supply. In this case, the technological developments that show up in each area have opened many windows in medical education and one of the fields benefiting from these opportunities has been "anatomy". In this paper the importance and the indispensability of cadaver in the anatomy education in the historical process, the process of transition to the tech-advanced anatomy laboratories and the place of "Cyber Anatomy Laboratory", in Bursa Uludağ University as one of the examples in our country, in medical education will be mentioned.

Methods: In accordance with the purpose, a literature review was made and the place of anatomy in medical education was examined along with the historical process and its current state.

Results: In the "anatomy" education in our country, before the opening of the modern medical school, printed works, figures and models were used, but with the modernization process and limited after the cadaver leave, cadavers started to be used. With various hardware and techniques such as plastination, holographic imaging techniques, virtual reality, 3D printers were used in order to provide a solution and support in cadaver supply with the developing world and technology. In some faculties, anatomy laboratories using digital enhancements have been established and started to be used in education. The "Cyber Anatomy Laboratory" which was opened in the Faculty of Medicine of Bursa Uludağ University for the first time among the state universities was first begun as an elective course, opened to 10–12 students of study groups and used in education regularly.

Conclusion: Depending on the age groups of the students who are studying, it seems that education is also given a different direction with the hardware, including virtual reality, three-dimensional images and equipments. However, it should not be forgotten that even though the technology has developed, based on the cadaveric perceptions formed within the anatomy education, thinking about human being as a valuable asset after the death can be developed and learned on a real cadaver.

Keywords: tech-advanced anatomy, history of anatomy education, cadaver

O-74

Virtual reality technology in anatomy education

Topuz Y[1], Özdener DN[2]

[1]Beykoz University, Istanbul, Turkey; [2]Department of Anatomy, Faculty of Medicine, Marmara University, Istanbul, Turkey

Objective: Virtual reality technology attracts attention as one of the innovative educational materials. The technology has the ability to embody abstract concepts, to animate situations that are difficult to see in reality, and to show relationships between structures. The technology can be used as an aid to anatomy education which is known to be a serious problem in terms of real-life experience and is the basis of medical education. The aim of this research is to examine the effect of using virtual reality technology as an instructional material in anatomy education academic achievement of students, compared to three-dimensional desktop training practice or model-based training. The academic success of Experiment-II group using virtual reality training simulation is significantly higher than Experiment-I group using three-dimensional desktop training material.and control group. Anatomical structures naming skill scores of Experiment-II group using virtual reality training simulation is significantly higher than Experiment-I group using three-dimensional desktop training material and control group.

Methods: The study was carried out with a full experimental model with pre - test and post - test control groups and participants of the research are 68 students in 3rd year of Marmara University Faculty of Medicine in 2017–2018 school year. Students were divided into three groups (Control: 22 people, Experiment-I: 23 people and Experiment-II: 23 people) according to the scores they received from the previous anato-

my committee. In order to measure academic achievement, the Nervous System Academic Achievement Test developed by researchers and using the KR-20 reliability coefficient of .80 and weekly practice tests were used.

Results: According to findings in the research, it has been found that using virtual reality training simulation in anatomy training is significantly more effective in terms of academic achievement than both models used as current training material and three dimensional desktop training material.

Conclusion: As a result, it has been found that virtual reality applications are more successful in establishing the meronymy between the structures, making the complex subjects more concrete by embodying the contents that cannot be seen or examined in detail, positively contributing to the education process.

Keywords: virtual reality, medicine education, anatomy education

O-75

Tips to increase the acceptance of manuscripts in the field of anatomical sciences submitted to international journals

Apaydın N

Department of Anatomy, Faculty of Medicine, Ankara University, Ankara, Turkey

It is undoubtedly one of the greatest desires and happiness of a scientist to see that their intensive laborious scientific researches are published in respected international journals. In our country, a great deal of scientific research is carried out in the field of Anatomy and sent for evaluation to international journals for publishing. But most of the time, the submitted articles are subject to intensive revisions and can be rejected at high rates. As Turkish anatomists, we are in the top 3 countries to send articles for publication to two of the most popular journals in area of clinical anatomy which are "Surgical and Radiological Anatomy" and "Clinical Anatomy" for many years. But, acceptance rates of the manuscripts sent from Turkey remains below the general acceptance rate of these Journals. However, if some points that can be easily applied are taken into consideration before the plan of the study and especially during article writing phase, this ratio will increase. In this presentation, it was aimed to provide tips that could facilitate the publication of young researchers' articles in international journals.

Keywords: scientific article writing, clinical anatomy studies

O-76

Symmetry in human motion: the secret behind biomechanical principles

Durgun B

Department of Anatomy, Faculty of Medicine, Çukurova University, Adana, Turkey

Objective: Symmetry is the correspondence in size, form, and arrangement of parts on opposite sides of a plane, line, or point. In mathematics, symmetry means the exactly matching of two parts, when one half is the same as a mirror image of the other half, or when one part can take the place of an other if it is turned 90° or 180°. Symmetry shows the excellence of proportion. Symmetry plays an important role in beauty, aesthetics, and attractiveness both for the body and for body movements. The purpose of this work is to interpret the secret of symmetry behind the biomechanical principles in the human movement.

Methods: This study is not merely a review of the literature, but is the author's interpretation of symmetry in the human motion, from his own point of view.

Results: Biomechanical principles give symmetry in human motion. Geometry and physics knowledge is used to prove a balance of similarity in an object. Many things in nature evolve into symmetry due to gravity. The most common type of symmetry is bilateral symmetry. Nature offers us many examples of bilateral symmetry. Of course, there is no perfect symmetry (staticsymmetry) in nature, and when an object folded in the middle axis, two parts of it do not exactly match. What exists in nature is the dynamic symmetry. Dynamic symmetry begins with movement, and where there is a movement, there is also the "time" concept. For human motion, the gravitational axis can be regarded as a line of symmetry. If the motion is performed near the gravitational axis, it appears more accurate and more aesthetic. Movement and directional coupling depend on the synchronization of objects in time and velocity. Force is also symmetrical, particularly in the context of Newton's third law. This symmetry means that when an object applies a force to the other, the force-bearing object encounters a force of the same magnitude and opposite direction (action-reaction law).of the same magnitude and opposite direction (action-reaction law).

Conclusion: The biomechanical principles underlying the correct, efficient and aesthetic movement in the human body also lead to the symmetrical movement, which gives a harmonious balance and proportional sensation, and from this to the perceptual importance of symmetry.

Keywords: attractiveness in motion, balance of similarity, biomechanics, human motion, symmetry

O-77

Correlation of static postural control data of patients with ankylosing spondylitis and healthy subjects

Karahan M[1], Parlak M[1], Yılmazer Kayatekin AZ [1], Uluçam E[1], Taştekin N[2]

[1]Department of Anatomy, Faculty of Medicine, Trakya University, Edirne, Turkey; [2]Department of Physical Medicine and Rehabilitation, Faculty of Medicine, Trakya University, Edirne, Turkey

Objective: Ankylosing spondylitis (AS) is a chronic inflammatory rheumatic disease. AS affects the vertebral column from head

to sacrum and limits the movement. Peripheral effects of AS are mostly seen on the lower extremity joints. The aim of this study is to compare the static posture analysis data of patients with AS with healthy individuals. We can identify if AS has any effects on static posture by the data we gathered.

Methods: Thirty-five patients diagnosed with AS and treated for AS at Physical Medicine and Rehabilitation Polyclinic and 31 healthy volunteers were included in this study. Analyzes were performed by using the force platform (Zebris ©, FDM System Type FDM) and the WinFDM computer program. Analyzes were repeated three times in the eyes open and closed positions, respectively. Data of length of minor axis, length of major axis, confidence ellipse area, path length of center of pressure, center of pressure angle, vertical standart deviation of COP and horizontal standart deviation of center of pressure were obtained by analyzes.

Results: There was no statistically significant corelation between two groups in terms of age, height, weight and body mass index ($p>0.05$). In analyzes performed in eyes open position, there was no statistically significant correlation between length of minor axis, length of major axis, confidence ellipse area, center of pressure angle and vertical standart deviation data's in two groups ($p>0.05$). Path length and horizontal standart deviation values were significantly increased in AS group ($p<0.05$). In analyzes performed in eye closed position, only the path length data were significantly different on patient group ($p<0.05$). There was no significant difference in other parameters ($p>0.05$).

Conclusion: AS has negative effects on some parameters of static posture analysis. Researches with larger patients and healthy volunteer groups will provide more effective results.

Keywords: ankylosing spondylitis, posture, center of pressure

O-78

Comparison of traditional physical therapy and Mulligan mobilization technique in treatment of cervicogenic headache

Arğalı Deniz M[1], Köse E[1], Öner S[2], Yağar D[3], Bakır M[4], Özbağ D[1]

[1]Department of Anatomy, Faculty of Medicine, İnönü University, Malatya, Turkey; [2]Department of Radiology, Faculty of Medicine, Karabük University, Karabük, Turkey; [3]Department of Physical Therapy and Rehabilitation, Malatya Training and Research Hospital, Malatya, Turkey; [4]Department of Neurology, Malatya Training and Research Hospital, Malatya, Turkey

Objective: In this study, the traditional physical therapy method and Mulligan mobilization techniques used in the treatment of cervicogenic headache (CH) were compared.

Methods: Forty patients who were diagnosed according to the 2004 CH diagnostic criteria of the International Headache Society were included in the study. Group 1; traditional physical therapy and Group 2; Mulligan mobilization was formed. While Group 1 was applied with Hotpack, US, TENS and exercises therapy for 2 weeks, 5 days a week, Group 2 was applied SNAG technique and upper cervical region traction for 3 days a week every other days. All patients were evaluated before and after treatment measurement of neck lordosis angle by radiological imaging methods, passive / active neck ROM with universal goniometer, head and neck anthropometric measurements.

Results: While neck lordosis, passive / active neck ROM were significantly increased in post-treatment as compared to pre-treatment administration in both groups ($p<0.001$), there was no difference in head-neck anthropometric measurements ($p>0.05$). Both treatment groups indicated significant increased in neck lordosis, but this increase was greater in group 2. On the other hand, the measurement of ROM improved equally the neck extension and right neck lateral flexion values in both groups, while neck flexion, left lateral flexion of the neck, left and right rotation of the neck were statistically higher in Group 2 increased.

Conclusion: Both treatments were found to have positive effects on the radiological and clinical findings of CH, but it was concluded that Mulligan mobilization techniques were more effective than traditional physical therapy methods. However, both treatment methods

Keywords: cervicogenic headache, traditional physical therapy, mulligan mobilization technique, neck exercises.

O-79

Comparison of gait analyzes of long-term ankylosing spondylitis patients with normal subjects using force platform

Parlak M[1], Uluçam E[2], Taştekin N[3]

[1]Department of Anatomy, Faculty of Medicine, Bezmialem Vakıf University, Istanbul, Turkey; [2]Department of Anatomy, Faculty of Medicine, Trakya University, Edirne, Turkey; [3]Department of Physical Medicine and Rehabilitation, Faculty of Medicine, Trakya University, Edirne, Turkey

Objective: The aim of our study is to determine deviaton of the spatial and temporal gait parameters of patients with ankylosing spondylitis (AS) compared to healthy individuals and to obtain a standard AS patient gait pattern in this direction.

Methods: In our study, gait analyzes, ground reaction force and centre of pressure butterfly diagram data were obtained from 50 patients with ankylosing spondylitis who were followed up by the Physical Therapy Policlinic of Trakya University Medical Faculty and 40 healthy volunteers. Measurements were made using Zebris FDM System Type FDM 1.5 force platform. 21 patients receive anti-TNF alpha therapy, 21 patients receive non-steroidal anti-inflammatory drug treatment, 1 non-steroidal anti-inflammatory drug and salosoprine. 7 patients did not receive any treatment.

Results: Compared with control group, decrease in step width, right step length, double step length, right loading phase and

left single support phase parameters of the obtained spatial temporal gait parameters were statistically significant ($p<0.05$). The differences in the remaining spatial temporal parameters were not statistically significant. In addition, no statistically significant difference was found in the data of the ground reaction force and the centre of pressure butterfly diagram.

Conclusion: The increase in step width was consistent with the cautious gait tendency in the literature for AS patients. Furthermore, we believe that hip and spinal involvement in AS and treatments of patients is effective in results of gait analysis.

Keywords: ankylosing spondylitis, gait analysis, spatial temporal, force platform, Zebris

O-80

A comparison of biomechanical features modified Larssen fixed, 10% formalin fixed and fresh frozen cadavers

Yörük MD[1], Pekedis M[2], Binboğa E[3], Çelik S[1], Bilge O[1]

[1]Department of Anatomy, Faculty of Medicine, Ege University, Izmir, Turkey; [2]Department of Mechanical Engineering, Ege University, Engineering Faculty, Izmir, Turkey; [3]Department of Biophysics, Faculty of Medicine, Ege University, Izmir, Turkey

Objective: 10% formalin (F10) solution widely used in anatomy laboratories for embalming. F10 solution is cheap, easy to prepare and efficient for embalming but it has disadvantages such as disturbing smell, mucosal irritation, discoloration and changing biomechanical features like flexibility. Because of these reasons, fresh frozen cadavers (FF) are widely used for surgical researches and training courses. FF cadavers have some disadvantages such as infection and putrification in the short term and could not be used more than one. Therefore fixation solutions are needed which provide close biomechanical features to FF cadaver. It is known that Modified Larssen Solution (MLS) is one of the fixation solution that used for surgical researches and training courses to prevent disadvantages of FF cadavers. The aim of our study was to compare biomechanical features of tissue samples that obtained from MLS fixed, F10 fixed and FF cadavers.

Methods: Muscle, artery, bone and skin tissue samples were obtained from the MLS fixed, F10 fixed and FF cadavers to compare biomechanical features. All tissue samples were collected from the same regions. 8 cadavers for each group and totally 96 tissue samples were used. Once the geometrical measurement have completed for all groups' samples then they were tested with a biomechanical tensile machine (Autograph AG-IS 5 kN, Shimadzu Co. Kyoto, Japon). The data in each of the skin, muscle, artery and bone samples for each group were collected, the biomechanical parameters such as stiffness, elastic modules, maximum stress, and force have been evaluated and compared statistically using ANOVA F hypothesis statistical test.

Results: Results have showed that there is a statistically difference between the three groups in terms of stiffness (N/mm), elastic Modulus (MPa), maximum stress (MPa) and maximum tensile force (N) ($p<0.05$). In addition to that MLS fixed cadaver tissue samples have closer biomechanical features to fresh frozen cadaver tissue samples compared to F10 fixed tissue samples.

Conclusion: MLS fixed tissue samples have closer biomechanical features to FF tissue compared to F10 fixed tissue. MLS fixed cadavers may be preferred surgical researches and education, especially postgraduate surgical training courses. Besides MLS fixed cadavers may reduce disadvantages of FF cadavers such as putrification, infection and also provides long term using. MLS fixed cadavers may be used multiple so it is cost effective Methods for surgical education and researches.

Keywords: cadaver, formalin fixation, modified Larssen solution

O-81

Comparison of isokinetic strength, balance and walking functions through stroke type in hemiplegic patients

Kızılay F[1], Toy Ş[2], Çiftçi R[2], Akyol B[3], Özbağ D[2]

[1]Department of Physical Education and Sport, Institute of Health Sciences, İnönü University, Malatya, Turkey; [2]Department of Anatomy, Faculty of Medicine, İnönü University, Malatya, Turkey, [3]Department of Exercise and Sports Education in Disabilities, Faculty of Sport Sciences, İnönü University, Malatya, Turkey

Objective: Stroke is the third leading cause of mortality following heart disease and cancer, according to the World Health Organization. In surviving patients, the area of cerebral lesion has opposite paralysis and widespread-focal cognitive dysfunction, balance problems, and sensory perception motor association disorders. The etiology of the stroke is 75–80% ischemic, 20–25% due to subarachnoid or intracerebral hemorrhage. Depending on stroke type, there may be differences in function loss. The effect of the stroke type on the loss of function has not been well researched in the literature. For this reason, the study aimed to investigate the effect of stroke type on basic motor functions such as force, balance and walking.

Methods: Twenty volunteers aged 30–65 years who had stroke from hemorrhagic and ischemic type were included in the study. Force and balance measurements were performed using Biodex System (BS) (Biodex Medical Systems, Shirley, 2000, NY). The force measurements were made in concentric / concentric mode at 900 / sec angular velocity, and the balance test was performed on the balance platform, with eyes open statically and dynamically in the medial / lateral and anterior / posterior directions. Walking function was performed using a 6-minute walking test and a chronometer on the marked floor, and the results were recorded in the patient information form.

Results: The mean age of the patients was 45 (32–61) in the ischemic stroke group and 52.5 (31–62) in the hemorrhagic stroke group. There was no significant difference in height, weight and Body Mass Index (BMI) values in ischemic and hemorrhagic stroke groups ($p>0.05$). There was no statistically significant difference between the two groups in knee flexion-

extension peak torque, average power, total work and hamstring / quadriceps muscle strength ratios measured in strength evaluation (p>0.05). There was no statistically significant difference between the groups in anterior / posterior, medial / lateral, total test time parameters evaluated in balance test (p>0.05). There was no statistically significant difference between the groups in walking distance measurement (p>0.05).

Conclusion: As a result, there was no statistically significant difference in strength, balance and walking functions in hemiplegic patients according to type of stroke.

Keywords: stroke, strength, balance, walking

O-82

Evaluation of feet muscle strength, balance and quality of life in person with pes planus

Solgun S[1], Çetin A[1], Ceylan MF[2]

[1]Department of Anatomy, Faculty of Medicine, İnönü University, Malatya, Turkey; [2]Department of Trauma and Orthopaedic Surgery, Faculty of Medicine, İnönü University, Malatya, Turkey

Objective: Pes planus (PP) or flat feet is defined as a deformation which caused by the shortage on longitudinal arc or total collapse of it. Deformities that caused as PP's primer or seconder effects, significantly diminish individuals' quality of life. This research aimed to examine PP's affects on feet pain, feet strength, ankle proprioception, antropometric measurements, how it affects static and dynamic balance, PP's relation with BMI & hypermobility, determination of musculoskeletal complications that are related to PP and understanding how it affects patience's quality of life.

Methods: We evaluated 100 individuals in our research. This group consisted on people between 8 to 25 ages and half of them (50) diagnosed with pes planus and the other 50 healty person. We conducted strength with manual muscle test, pain with VAS and proprioception tested with digital inclinometry and anthropometrical measurement with metric and caliper. We tested static and dynamic balance with standing on single leg test, four step square test, timed up and go tests. According to hypermobility Beighton diagnosis criteria: quality of life evaluated with SF-36 and KINDL tests.

Results: Assessment among the groups showed that muscle strength; significantly differences were observed that dorsiflexion- inversion and plantarflexion – inversion of the left foot in females (p<0.05). The evaluation of proprioseption significantly differences were observed those of female right ankle active and passive eversion and also male left ankle passive inversion (p<0.05). Significantly differences were observed the most of male and female left and right foot antropometric evaluation (p<0.05). Also significant differences were observed in females for static balance evaluation for the right stand on one foot while eyes are open, in males for both right and left stand on one foot while eyes are closed, and in female's and male's dynamic balance evaluation in four-step square and time-to-go walk test (p<0.05). In the KINDL test, statistically significant differences were found in the subheadings of emotional well-being (p=0.009), self-esteem (p=0.001), social relations (p=0.001), school (p=0.011) and disease (p=0.001). There were no significant differences in other evaluations.

Conclusion: Pes planus can be caused numerous health issues in our society which do not give enough importance to the feet health.

Keywords: pain, antrophometry, balance, hypermobility, force, flat feet

O-83

MR images, morphological changes in the frontal cortex of schizophrenia, schizoaffective disorder and psychotic bipolar disorders

Kurbetli N, Akyer ŞP, Özdemir MB

Department of Anatomy, Medicine Faculty, Pamukkale University, Denizli, Turkey

The lobus frontalis, the largest of the lobes, is located at the front of the sulcus centralis. This large area accounts for 20% of neocortex. The frontal cortex can be examined in three different parts; motor, premotor, and prefrontal cortex. The premotor cortex covers Brodmann domains 6 and 8 and can be studied in four different parts; premotor cortex, suplementary motor cortex, frontal eye area, supplear eye area. The lateral lateral premotor area for humans was enlarged as Broca area (area 44). Previous studies have found that schizophrenia (SZ) causes morphological changes in brain structure, schizoaffective disorders (SZA) and psychotic bipolar disorders (BD). The aim of this study is to increase the comprehensibility of the morphological abnormality underlying psychotic disorders by performing volumetric measurements of frontal cortex structures. For this purpose, MR imaging brain structures were compared with 186 healthy controls (67 women and 119 men) in 174 psychotic patients (58 women and 116 men). Twelve frontal cortex structures thought to be associated with psychotic disorders were evaluated. In almost all structures in SZ, a decrease in volume was observed, whereas in BP the morphometric reduction was less than SZ and SZA. The changes were found to be associated with Positive and Negative Syndrome Scale (PANNS). It is concluded that psychotic disorders have a different effect on gender.

Keywords: anatomy, brain, morphometry, psychotic disorder, schizophrenia, schizoaffective disorder, psychotic bipolar disorder

O-84

Renal ischemia / reperfusion model in rats

Ortadeveci A[1], Öz S[2], Şentürk H[3], Özden H[1]

[1]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi Univetsity, Eskişehir, Turkey; [2]Health Care Vocational High School, Eskişehir Osmangazi University, Eskişehir, Turkey; [3]Department of Biology, Faculty of Science, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: To prevent acute renal failure, dialysis still remains as the only effective Methods. Therefore, the development of new therapeutic Methodss for acute renal failure has great interest for researchers. In order to produce solutions for this problem, it is very important to establish similar renal injury models and to apply all of these models on experimental animals to solve all the mechanisms underlying the problem. A good animal model needs to fully represent the "disease" or "lesion" that is being studied. It should also be compatible with the possibilities of many researchers and most animal laboratories. In addition, it should be useful for histological investigation. The main purpose is to investigate the protective, therapeutic or stabilizing effects of the model for experimental animals in a suitable experimental protocol.

Methods: Model animals are anesthetized with Rompun-Ketalar. Animals under anesthesia are incised from the median line. Left renal artery is isolated and blood flow is stopped by a clamp for 15-45–60-75 minutes. Immediately after the ischemia period, reperfusion is performed for at least 24 hours. With the end of their perfusion period, blood and tissues are taken and sent to the laboratory for histological and biochemical examinations. The results are evaluated in terms of numerical significance with international statistical techniques.

Results: Preparations obtained using different dyes are evaluated with many parameters such as tubular necrosis grade, hemorrhage, cystformation, endothelial and epithelial damage, vascular injury, infiltration of inflammatory cells and coagulation. Apart from this, the preparations stained with some special Methodss can also be examined in terms of 'apoptosis' and determine the variety of the damage and its effect.

Conclusion; Neither kidney nor other organs have been able to elucidate all the underlying mechanisms of ischemia / reperfusion injury. Studies aiming at achieving different approaches to the prevention and / or treatment of injury are still in progress.

Keywords: rat, kidney, ischemia/reperfusion, renal artery

O-85

Comparison of MDA and GSH in the rat tissues of hypoxia and obesity

Dağ M

İnönü University, Faculty of Medicine, Turgut Özal Medical Center, Malatya, Turkey

Objective: Obesity is defined as the amount of fat in the body that increases in a way that affects health negatively. Obesity is an important public health problem due to the fact that it is now associated with many chronic disease risk factors. Chronic diseases and obesity as well as all over the world and in Turkey is one of a growing global public health problem. According to World Health Organization data, diabetes, heart disease, chronic respiratory diseases, stroke and cancer, etc. are responsible for 60% of all deaths in the world. In Turkey, it is observed that about 22 million adults experience one or more chronic disease and this number is increasing day by day. Obesity is a condition due to the risks posed by the on going topicality in the world and Turkey.

Methods: In this study, it was aimed to compare malondialdehyde (MDA) and reduced glutathione (GSH) in rat tissues due to obesity and hypoxia. Male Sprague Dawley rats were used for the study. Rats; Four groups are divided into Normal Feeding / Normal Oxygen (NF / NO), Normal Feeding / Low Oxygen (NF / LO), High Calorie Feeding / Normal Oxygen (HCF / NO) and High Calorie Feeding / Low Oxygen (HCF / LO). It was built in a closed system with low oxygen level, 17–18% oxygen. After the desired 20–25% weight gain was achieved in the obese rats, liver, kidney and brain tissues were sacrificed by rats. In the receiving tissues, MDA analysis was performed by Uchiyama et al., GSH by spectrometric measurement by the Methods described by Ellman.

Results: There was a significant increase in the MDA levels in the liver, NF / LO and HCF / LO in the brain. When GSH amounts were taken into consideration, it was determined that there was a significant increase between NF / LO and HCF / LO in the liver and NF / LO and HCF / LO in the brain. In the kidney, it was determined that there was a decrease in the other groups according to the control group (NF / NO).

Conclusion: MDA and GSH have been shown to be protective against hypoxia and obesity in the liver and brain, whereas the kidney is not.

Keywords: hypoxia, obesity, MDA, GSH

O-86

The effect of gilaburu *(Viburnum opulus)* juice on experimentally induced kidney stone in rat

Ömerli A[1], Ülger H [2], Nisari M [2], Ertekin T [3], Susar H [2], Al Ö[2]

[1]Faculty of Health Science, Nuh Naci Yazgan University, Kayseri, Turkey; [2]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey; [3]Department of Anatomy, Faculty of Medicine, Afyon Kocatepe University, Afyokarahisar, Turkey

Objective: Urolithiasis is a third pathologica case which affecting the urinary system, after urinary infections and prostate pathology. Gilâburu *(Viburnumopulus L.)* grows in a wide area in Central Anatolia and its fruit juice is known to dissolve kidney Stones among the people in the Kayseri region. It has been used for years by people to reduce kidney stones. The aim of this study was to investigate the effect of gilâburu juice on experimentally induced kidney stone in rats.

Methods: 40 Sprague Dawley rats that having an average weight of 190–320 g were used in this study. During 8 days 0.75% ethyleneglycol (EG) and %1 ammoniumchloride (AC) were added to the drinking water, so that kidney Stones occurred. Extract of gilaburu juice corresponding to half the daily drinking water was dissolved and given by gavage. While the the extract was given to the animals during thefirst 8 days

to test the protectiv eeffect of gilaburu, it was given for 12 days from the day of the 8th to test its therapeutic effect. After measuring of the urine samples amount, calcium, uricacid, magnesium, creatinine, oxalate and citrate were tested in theurine. At the end of the experiment, blood samples were taken and serum urea, creatinine, calcium and magnesium values were measured. Kidneys measured macroscobic and kidney sections were stained hematoxylin-eosin (HE) and Pizzolato's (PZ) staining Methods were evaluated histopathologically.

Results: The urine calcium, magnesium, uricacid, creatinine, oxalate and citrate values were closer to the negative control group compared to the positive control group in both the protecting group and the treatment group animals. The HE stained kidney sections from the protecting and the treatment groups of animal showed similar structure to negative control group when compered to the positive control group. The number of stone crystals that were evaluated from the PZ stained sections were significantly decreased in the protecting and the treatment groups kidneys compared to positive control group. As a result; gilaburu juice caused an improvement from the values measured in the urine and reduced the crystal deposition in the kidney.

Conclusion: It can be said that the gilaburu juice may have the rapeutic effects on the urolithiasis. To confirm these data and determination of preventive and theuropathic mechanism of gilaburu juice, it requires further studies in this subject.

Keywords: Renal stone, gilaburu juice, *Viburnum opulus*, rat

O-87

Comparison of curcumin and beta-carotene effects ovarian damage caused by cisplatin

Ceyhan A, Yay A

Department of Histology-Embryology, Faculty of Medicine, Erciyes University, Kayseri, Turkey

Objective: The use of antioxidants is the most commonly used alternative treatment Methods to reduce tissue damage during the use of chemotherapeutics. In the present study, it was aimed to investigate histopathologic, histochemical and biochemical evaluation of possible protective effects of Curcumin (CUR) and Beta-Carotene (BK) on Cisplatin (CİS) application, to evaluate these results statistically and to compare the effects.

Methods: İn the study, 56 Wistar albino female rats were used and randomly divided into 7 groups(n: 8).In the first administration, sham group received only sesame oil orally (1 mg/ kg); CİS group, received injection of cisplatin (5 mg/kg week, ip); CUR group, orally treated with curcumin (200 mg/kg); BK group, treated with beta-carotene (100 mg/kg) orally; CUR+CİS group, pretreated with curcumin (200 mg/ kg) 30 min prior to the cisplatin injection, then received cisplatin (5 mg/ kg/week, ip); BK+CİS group, pretreated with beta-carotene 30 min prior to the cisplatin injection, then received cisplatin (5 mg/kg/week, ip). The second application was performed 1 week after the first application, and the operations in the first application were repeated. On the 5 day after application, the ovarian tissues were removed and routine histological tissue was performed and paraffin blocks were obtained. Serial sections from the blocks were applied with hemotoxylin-eosin and masson tricrom staining Methodss. Follicle counts were performed to determine the ovarium reserve. Expression of AMH (anti-mullerian hormone) and NFk-B (nuclear factor kappa-beta) was detected in the ovarian tissues. Apoptotic cells were counted by TUNEL method. ELISA method was used to determine malondialdehyde, superoxide dismutase and catalase levels.

Results: CUR and BK showed protective properties in the number of primordial, primer, preantral, secondary, and tertıary follicles decreasing after CİS application. There was an increased number of atretic follicles in the CİS group. The intensity of AMH immunoreactivity in the follicles was observed to be close to control in the CUR+CİS group. The results of NF-κB immunoreactivity intensities suggest that both antioxidants may have a protective effect. Apoptotic cell count results showed that BK and CUR had an antiapoptotic role but CUR was more effective. Catalase and malondialdehyde measurement results also supported that CUR is more protective than BK for ovarian damage caused by CİS, similar to other results.

Conclusion: In this study, damage to the ovary by CiS was shown to have a protective effect of CUR more than BK. It is thought that CUR may play an important role in the prevention of ovarian function and infertility in cancer patients treated with CİS.

Keywords: ovary, cisplatin, curcumin, beta-carotene

O-88

Nifedipine enhances breast cancer cell proliferation and inhibits the apoptotic effect of everolimus through TRPM2 channels

Övey İS[1], Candan B[2], Günal MY[1], Avnioğlu S[2]

[1]Department of Physiology, Faculty of Medicine, Alanya Alaaddin Keykubat University, Antalya, Turkey; [2]Department of Anatomy, Faculty of Medicine, Alanya Alaaddin Keykubat University, Antalya Turkey

Objective: Today, many women are fighting with heart diseases as well as breast cancer andthere is an inverse association between the use of calcium channel blockers (CCBs) and the development of breast cancer. Hence, we aimed to investigate the effects of nifedipine alone and in combination with everolimus on MCF7 cells through TRPM2 channel activation.

Methods: The cells were divided into 7 main groups as Control, Everolimus, Everolimus+Anthranilicacid (ACA), Everolimus+ Nifedipine, Everolimus+Nifedipine+ACA, Nifedipine, Nifedipine+ ACA. All groups were stimulated with Cumene-hydroperoxide, a TRPM2 channel agonist before or during the analysis. The levels of reactive oxygen species (ROS), caspase-3, caspase-9, mitochon-

drial depolarization, apoptosis, intracellular free calcium and MTT (cell viability) were measured. Data were evaluated by using Mann Whitney-U and one-way ANOVA tests.

Results: The ROS production, apoptosis, caspase-3 &–9 and mitochondrial depolarization values were significantly higher in the Everolimus group than in the Control group and the samevalues were significantly lower in the Everolimus+ACA ($p<0.001$), Everolimus+Nifedipine ($p<0.001$) and Everolimus+Nifedipine+ACA ($p<0.001$) groups than in the Everolimus group. Furthermore, the ROS production, apoptosis, caspase-3 &–9 and mitochondrial depolarization values were markedly lower in the Evorolimus+Nifedipine+ACA group compared to the Everolimus+Nifedipine group ($p<0.001$).

Conclusion: In conclusion, everolimus could be used as a potent drug against breast cancer due to the apoptotic effect mediated by TRPM2 channels activation, however, nifedipine could not be used in combination with everolimus in patients with breast cancer because it reduces the death of cancer cells.

Keywords: everolimus, breast cancer, Nifedipine, TRPM2, apoptosis

O-89

Effects of Triclosan on *in vitro* embryonic rat development

Çayan D[1], Unur E[2], Nisari M[2], Patat D[3]

[1]Niğde Zübeyde Hanım School of Health, Niğde Ömer Halisdemir University, Niğde, Turkey; [2]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey; [3]Department of Anatomy, Faculty of Medicine, Lokman Hekim University, Ankara, Turkey

Objective: Triclosan is a non-natural, non-ionic, oil-soluble material and is produced in laboratories. This substance, which has a wide-range of chlorinated bisphenol ring structure, shows its antimicrobial effect by breaking down the fatty acid synthesis, which is necessary for the survival of bacteria. Studies conducted so far have detected the presence of Triclosan in the plasma, urine, feces and breast milk; however, have not investigated its effects on the embryo. Rat Embryo Culture Technique was developed for toxicology and teratology studies, which became important when the Thalidomide Disaster emerged in the world in 1960s. By using this method, the purpose of the present study is to investigate the effects of triclosan in *in vitro* conditions on embryonic rat development, and to determine the caspase values that lead the cells to apoptosis.

Methods: In our study, a total of 40 rat embryos that were 9.5 days old were used. According to the triclosan dose that was added to the culture flask, the control and the 3 study groups (100 ng/ml, 200 ng/ml and 300 ng/ml) were formed. After the embryos were added to the culture flasks, they were given gas as follows; 5% O_2 on the first day; 20% O_2 on the second day; and 40% O_2 on the third day. After 48 hours of culture period, the embryos were subjected to morphological scoring for developmental evaluation. The data that were obtained in this way were analyzed statistically by using the SPSS Software Program.

Results: In terms of the amount of triclosan, the morphological scoring was 62.8 in the Control Group and regressed to 30.4, 14.9 and 1.8, respectively, in the study groups. Statistically significant regressions were detected in other 17 morphological scoring parameters ($p<0.001$).

Conclusion: In this respect, it was determined that the use of Triclosan during pregnancy caused retardation in the embryonic development, and this increased in a dose-dependent manner.

Keywords: triclosan, whole embryo culture, in vitro, apoptosis, gene expression

O-90

The effects of moderate and high doses of vitamin A on the placenta of rats: a stereological study

Aslan D, Ay H

Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Maternal nutrition during pregnancy plays an important role in the regulation of placental-fetal development. The placenta, which is an interface organ between dam and fetus, has versatile functions with nutrient transport, drug metabolization and hormonal activities as well as barrier function. For this reason, it is a very sensitive organ for drug or chemical agents induce deffects. Vitamin A and its derivatives are necessary for the normal development of the embryo and the maintenance of cell differentiation in the adult organism. its inadequacy prevents the development of the embryo and causes abortion. High doses of vitamin A; it is known that it has teratogenic for embryo, and has membranolitic and hepatotoxic effects in adulthood. Because the morphological studies about the effects of vitamin A on the placenta are rare; we aimed to investigate the effects of vitamin A doses on the placenta that were not previously reported in the literature as teratogenic or non-teratogenic.

Methods: Pregnant rats were divided into 6 groups. On the 10–12 (G10–G12) days of pregnancy, the first group received 10,000 IU / kg, the second group received 20,000 IU / kg, the third group received 50,000 IU / kg, the fourth group received 100,000 IU / kg and the fifth group received 2,000,000 IU / kg oral vitamin A On the same day, 1 ml of sun flower oil was given to the control group. Rats receivedces are an section and placenta in G19. The obtained placenta was stained with Mason-tricrom following the histological tissue. The volumes of the placentals (V), the volume of the decidua basalis layer (Vdc) and their ratios (Vv) were calculated by stereological method. The results were evaluated statistically.

Results: When compared with the obtained control group, It was observed that the placenta volume of the group receiving 200,000 IU / kg of vitamin A was higher. It was also observed that Vdc of 50,000 IU / kg a group of vitamins was increased significantly compared to all other groups. While the total volume of the experimental groups did not show any difference

according to the control group, Vvof 50,000 IU / kg group was found to be higher than all other groups.

Conclusion: As a result, observing that the Vdc, Vv of 50,000 IU / kg of vitamins are higher than the other groups, this dose shows a critical effect on placental morphology and development, suggesting that it suppresses the programmed cell death which must be realized to ward stheend of pregnancy.

Keywords: placenta, retinol, desidua basalis, stereology

O-91

The protective role of vitamin E against teratogenic effect on nicotine embryonal bone development

Güler H[1], Aycan K[2], Yılmaz S[1], Nisari M[2], Ertekin T[3], Al Ö[2], Atay E[3], Yılmaz H[4]

[1]Department of Anatomy, Faculty of Medicine, Yozgat Bozok University, Yozgat, Turkey; [2]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey; [3]Department of Anatomy, Faculty of Medicine, Afyon Kocatepe University, Afyonkarahisar, Turkey; [4]Department of Therapy and Rehabilitation, Kozaklı Vocational School Nevşehir Hacı Bektaş Veli University, Neşehir, Turkey

Objective: According to the World Health Organization, around 1.5 billion people use to bacco products in the world and Turkey ranks 10th when compared to other countries. The frequent use of tobacco is the basic psycho active substance nicotine which leads to the dependence of internal cigarette form. Nicotine was detected both in the amniotic fluid and in the fetal cord blood and it was determined that the placental barrier passed. Nicotine exposure during pregnancy increases placenta previa, still birth, congenital heart disease, musculoskeletal system defects. Antioxidants are used as preservatives against teratogenic substances such as nicotine. In this study, the protection of vitamin E was investigated against possible changes in nicotine low (3 mg/kg) and high (6 mg/kg) doses that would occur in the anterior and posterior limb bones of rat fetuses.

Methods: In eachgroup, 3 groups of pregnant rats were divided into 6 groups. Working groups; control, vitamin E, nicotine low dose, nicotine low dose + vitamin E, nicotine high dose, nicotine high dose + vitamin E. Experimental group severy day received nicotine at 1 and 20 days of gestation; Treatment group sreceived 60 mg/kg vitamin E along with nicotine. On the 20th day of pregnancy, rats were sacrificed and fetuses were removed.

Results: The weight sand head-to-tail lengths of the fetuses were determined. Anterior and posterior extremity bone development was assessed by double skeletal staining technique. The shortest measurement of bone and ossification length was in the high dose group of nicotine. It was also found that the lowest surface nicotine levels were found in the high dose group. Shortening in length and constriction in surface area were statistically significant when compared with control/ vitamin E groups ($p<0.05$). Extension of total bone and ossification length and enlargement of ossification surface area were determined in the treatment groups and the increase was statistically significant ($p<0.05$).

Conclusion: As a result of our study, it was found that nicotine, which is exposed during pregnancy, delays ossification and negatively affects the skeletal system, while antioxidant vitamin E reduces the negativity in the skeletal system.

Keywords: rat, nicotine, vitamin E, double skeletal staining

O-92

The effects of high and moderate doses of vitamin A on the fetal rat kidney: a stereological study

Ortadeveci A, Aslan D, Ay H

Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Vitamin A (retinol) and its derivatives are necessary for the normal development of the embryo and the maintenance of cell differentiation in the adult organism. Along with that; It is known that excessive doses of vitamin A have teratogenic effects in the embryo. Retinoic acid receptors play a critical role, in the development of urogenital structures. There are insufficient studies on the effects of low and moderate doses of retinol on the urinary system. The aim of our study is to investigate the effects of moderate and low doses of vitamin A on the fetal kidney.

Methods: Pregnant rats were divided into 6 groups. At the 10th–12th days of pregnancy (P10–P12). The first group received 10,000 IU / kg, the second group received 20,000 IU / kg, the third group received 30,000 IU / kg, the fourth group received 40,000 IU / kg and the fifth group received 50,000 IU / kg oral vitamin A. At the same days; the control group received only 1 ml corn oil. At P19 fetuses were removed via C-sections. Fetuses were fixed with cardiac perfusion and their kidneys were excised. After histological preparation, the slides were stained with hematoxylin and eosin. The volume of the kidneys (V), the number of glomeruli per unit area (Na) and the diameter of glomeruli (D) were calculated by stereological Methodss. The results were evaluated statistically.

Results: When compared with the obtained control group, it was observed that the kidney volume was higher in the group that received 20,000 IU / kg of retinol. It was also seen that the Na values of groups that received 20,000, 30,000 and 40,000 IU / kg of vitamin A were higher than control values. While glomeruli diameters of the experimental groups did not show any difference compared to the control group, the glomerular diameters of the group given 20,000 IU / kg retinol were found to be higher than those of the groups that received 10,000 and 40,000 IU / kg vitamin A.

Conclusion: In conclusion, in the light of the estimated higher V, Na, and D values of the group that received 20,000 IU / kg of vitamin A, we can suggest that this particular has a significant effect on kidney morphology and development.

Keywords: rat, kidney, vitamin A, teratogen

O-93

Transoral endoscopic thyroidectomy vestibular aproach (TOETVA): anatomo-histological analysis

Çelik S[1], Makay O [2], Yörük MD [1], Koçer IB[1], Özdemir M[2], Kılıç KD[3], Bilge O[1], Uyanıkgil, Y[3], Dionigi G[4]

[1]Department of Anatomy, Faculty of Medicine, Ege University, Izmir, Turkey; [2]Department of General Surgery, Faculty of Medicine, Ege University, Izmir, Turkey; [3]Department of Histology and Embryology, Faculty of Medicine, Ege University, Izmir, Turkey; [4]Department of General Surgery, Faculty of Medicine, Messina University, Messina, Italy

Objective: Transoral endoscopic thyroidectomy vestibular approach (TOETVA) is newly and centers that executed this approach is limited. The aims of study are execution of approach in modified Larssen solution (MLS) fixed cadavers and determining anatomy and histology of structures that trocars pass through for education and research.

Methods: Two MLS fixed cadavers and two 10% formalin fixed cadavers were used in the study. In two MLS fixed cadavers skin under dermis and part of superficial fascia above platysma dissected as a flap to determine chin, lower lip and neck muscle that trocars pass through.A formalin fixed cadaver used for comparison.Another formalin fixed cadaver were used for histological sampling, and it is stained with Hematoxilen& Eosin and Masson-Trichorme for histopatological analysis of nerves, muscle and other structures of lower lip.

Results: The steps of operation can make in cadavers. Median trocar (MT); passes below lower border of orbicularis oris muscle and between fibers of mentalis muscle that attaches to skin of chin above the periosteum. The inferior tip of MT determined in subplatysmal plane just below chin. Lateral trocar (LT) passes from inside to outside below orbicularis oris muscles without laceration. Than LT passes to superficial plane (epiplatysmal) between fibers of depressor labii inferior muscle. The direction of the trocar was close to the direction of the muscle fibers and fibers of muscle is sepataed by trocar.In a side of cadaver fibers of cadaver depressor anguli oris muscle reach over trocar.In a side of cadaver neck LT passes between fibers of platysma muscle to subplatysmal plane again. Other two LT pass to subplatysmal plane without penetration platysma. Lower part of LT is superficial to mental foramen and it pass over foramen. After histological examination degenerative changes and types in nerves, muscle and other structures were determined.

Conclusion: Hydrodissection, traction of the skin can easily make and TOETVA training is possible on MLS fixed cadavers. Anatomical passage of trocars in chin and neck regions is described in detail. Those findings may help surgeons to evaluate and monitoring patient during and after executing operation.

Keywords: TOETVA, surgical anatomy, lower lip-chin muscle, platysma, mentalis nerve

O-94

Lunate dislocation and anatomy of the space of Poirier

Erçakmak Güneş B, Ilgaz HB

Department of Anatomy, Faculty of Medicine, Hacettepe University, Ankara, Turkey

Objective: Chronic wrist pain is a common problem that may be related to the carpal instability. Carpal instability is centered around the lunate and frequently the result of a severe trauma. The classification of carpal instability involves 4 progressive stages. Stage I and II are characterized by disruption of the scapholunate and capitolunate jointsrespectively. The third stage is the perilunate dislocation of the carpus. In the fourth stage radiolunate joint disruption results in volar dislocation of the lunateinto the carpal tunnel through the space of Poirier. Space of Poirier is an interval between the inferior margin of radioscaphocapitate ligament and the palmar horn of the lunate. It may torn in perilunate injuries. The aim of this study is to describe and emphasize the clinical importance of the space of Poirier.

Methods: In this study one fixed and 2 fresh cadavers' wrist jointswere dissected. The attachments and the courses of the radioscaphocapitate, radiolunate ligaments and the space of Poirier were identified. Hyperextension was performed and movement of lunate through the space was observed.

Results: Space of Poirier is a weak interval without any supportive tissue and may easily be torn as a result of hyperextension.

Conclusion: Isolated lunate dislocation is an uncommon injury. It occurs due to severe trauma resulting in forced dorsiflexion of the wrist. The volar dislocation of the lunate into the carpal tunnel may result in compression of the median nerve and also has the potential risk of avascular necrosis of carpus and post-traumatic osteoarthritis. This is an uncommon cause of entrapment neuropathy and should be considered as one of the important differential diagnoses.

Keywords: lunate dislocation, poirier space, carpal dislocation

O-95

The temporofrantal branch of the facial nerve in terms of forehead and eye region aesthetic surgery - an anatomical study

Gilan İY[1], Bobuş A[1], Gilan VB[2], Tezer MS[3]

[1]Department of Anatomy, Faculty of Medicine, Mersin University, Mersin, Turkey; [2]Department of Computer Technology and Information Systems, Mersin University, Mersin, Turkey; [3]Department of Oral and Maxillofacial Surgery, Faculty of Medicine, Istanbul University, Istanbul, Turkey

Objective: Facial nerve (FN) is divided into two main trunk inside the parotid gland. The temporofrontal and zygomatic branches emerge from the ascending trunk; buccal, marginal mandibular and cervical branches emerge from the descending

trunk. To know the route of these branches before the operation would shorten the duration and eliminate the unnecessary incisions and complications. The temporofrontal branch (TF) is at risk in face lift surgery and rhytidectomy. In this study, we aimed to assist neurosurgeons who want to approach or protect the nerve by describing the detailed ianatomy of the TF.

Methods: The incision was made in front of the tragus and the skin was deviated anteriorly in 20 sides of formalin fixed cadavers. The parotid gland, the FN and its branches emerging from the anterior border were revealed by dissection. The Pitanguy line (PL, the line lying from a point 5 mm below the tragus to the point 15 mm lateral to the lateral end of the eyebrow) is determined using pins. The length of this line was measured and compared with the TF branch in terms of level. Besides, the data is compared in terms of side and gender.

Result: The PL was measured as approximately 6,67 mm. The TF was encountered superior to the PL in 6 sides, inferior in 3 and on the line in 11 sides.

Conclusion: In this study, we found that the TF branches were on or superior to the PL. So, this area is determined as risky area for these nerves. To protect the TF branches and achive succesfull outcomes, the clinicians should know this risky area and should take it into account in face lift surgery or interventions like dermal filling and botox.

Keywords: facial nerve, temporofrontal branch, cadaver, anatomic study

O-96

There are relations between the clinical cognitive tests and the volume of the subcortical structures of the brain in the Parkinson's disease patients with mild cognitive impairment: a brain segmentation study

Şahin B[1], Nahir M[2], Akan G[3], Hanoğlu L[4]

[1]Department of Anatomy, Faculty of Medicine, Karabük University, Karabük, Turkey; [2]Department of Anatomy, Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey; [3]Department of Radiology, Faculty of Medicine, Istanbul Medipol University, Istanbul, Turkey; [4]Department of Neurology, Faculty of Medicine, Istanbul Medipol University, Istanbul, Turkey

Objective: The relation between the function and structure of the brain is under interest of the scientist. This relation gives information to the clinician to diagnose or monitor the neurodegenerative diseases. However, there are limited studies on clinical tests and structural analysis of the brain. In the present study, we evaluated the correlation between the cognitive tests and size of the subcortical structures.

Methods: 26 Parkinson's disease patients with mild cognitive impairment (7 females and 19 males) included to the study. The mean age of the patients (±SD) is 67.1±10.3 years. Cognitive tests were done in the clinic and the structural analysis of the subcortical structures were done on magnetic resonance (MR) images. Brain segmentation was done using the BrainSuite software. The correlation analysis is done between the cognitive tests and the size of the hippocampus, amygdala, caudate nucleus, putamen, globus pallidus and nucleus accumbens of the right hemisphere.

Results: The size of the hippocampus, amygdala, caudate nucleus, putamen, globus pallidus and nucleus accumbens were 3770.2±483.1, 2874.2±506.7, 3007.0±1115.8, 5009.5±912.7 and 1876.9±327.4 cm^3 in the right hemisphere. The hippocampus was bigger in the patients who had high SBST learning mark (r=0.555; p=0.003). The amygdala was bigger in the patients who had high verbal memory learning score (r=0.420; p=0.03). There were positive correlations between size of the caudate nucleus and fruit&human (r=0.454; p=0.02), stroop error (r=0.457; p=0.02). There was also negative correlation between the nucleus accumbens and UPDRS (r=-0.446; p=0.02). There was not any correlation between the size of the globus pallidus and the cognitive tests.

Conclusion: Our findings revealed that there are strong correlations between the cognitive tests and the size of the subcortical structures. Our findings are also reveals that the above mentioned cognitive test could be accepted as powerful tests in clinic.

Keywords: Parkinson's disease, mild cognitive impairment, cognitive tests, magnetic resonance imaging, brain segmentation

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Morphological investigation of cerebral sulci and gyri of human brain cortex

Güner N[1,2], Kafa İM[1]

[1]Department of Anatomy, Bursa Uludağ University, Faculty of Medicine, Bursa, Turkey; [2]Department of Anatomy, Lokman Hekim University, Faculty of Medicine, Ankara, Turkey

Objective: Human cortex consists of gyri and sulci that give the characteristic folded appearance of the brain. Because of the variable appearances of sulci and gyri of the brain cortex, neurosurgical approaches can become more challenging and complex. These structures may vary not only among brains of different individuals but also between two hemispheres of the same individuals' brains.

Methods: In our study, twenty-five hemispheres were obtained from cadavers of Anatomy Department of Uludağ University Faculty of Medicine. Initially, the brains were cleaned from the membranes and veins at the outer surface. From digital images, primer sulcus lengths were measured and gyrus areas were calculated with Image J (ver. 2.1.4.7) software. Seventy-four parameters were measured and then compared according to the right and left hemispheres. Analyzes of the findings were made in the statistical program SPSS (Statistical Package for the Social Sciences / ver.22). Furthermore, the variations of the cerebral cortex sulci were investigated and classified.

Results: Three significant results were found between the right and left hemispheres in total. These parameters were gyrus frontalis inferior length (p=0,049), sulcus frontalis inferior length (p=0.047), gyrus temporalis superior length (p=0.042). Additionally, seventeen different variations of the primer sulci were also recorded.

Conclusion: We believed that quantitative data obtained from this study and additional findings related to the variations will contribute to the neurosurgical and neuroanatomical studies.

Keywords: sulci, gyri, brain, cortex, morphometri, variation

O-98

Evaluation of internal organ weights at forensic autopsies

Zeybek V, Kutlu E, Acar K

Department of Forensic Medicine, Faculty of Medicine, Pamukkale University, Denizli, Turkey

Objective: Human body organs play a significant role in almost all branches of medical sciences including forensic science, as any deviation in weight from the normal range suggests some pathological change in the organ and thus helps in interpreting the opinion regarding the cause of death in various pathological conditions. Examine the normal adult internal organ weight and its relationship with body height, estimated body weight, body mass index (BMI) and age.

Methods: Retrospective analysis of data from 208 forensic autopsies in Denizli from 01.01.2017 to 31.12.2017 which met criteria for inclusion in the study are included. Individual organs were excluded if there was significant injury to the organ that could have affected the weight. Statistical correlation was analyzed between organ weights and the age, height, estimated body weight, BMI of the deceased.

Results: The weight of organs were collected from 161 males and 47 females between 15 and 99 years. The decedents ranged in length 140 to 195 cm with an avarage length of 167.95 cm. BMI ranged in 10.27 to 48.68 with an avarage of 27.45. The mean brain weight was 1337 g (range, 1000–1755 g); heart mean weight 389 g (range, 105–845 g); liver mean weight, 1656 g (range, 685–3360 g); spleen mean weight, 187 g (range, 40–710 g); right lung mean weight, 577 g (range, 115–1630 g); left lung mean, 503 g (range, 155–1235 g); right kidney mean weight, 164 g (range, 50–1165 g); and the left kidney mean weight, 159 g (range, 40–985 g). All organ weights except spleen were statiscally significant between male and female. All organ weights except lungs were statiscally significant between BMI.

Conclusion: These results can be used as standard organ weights to determine abnormal evidences in Forensic and Pathologic corpses. However such results have to be regularly updated by pathologists in order to keep organ weight as a good criterion used in postmortem diagnosis.

Keywords: forensic medicine, normaly organ weights, body mass index

O-99

Histomorphological comparison of formaldehyde-based fixation with ethanol-based (FineFIX®) fixation

Bilişli E[1], Söztutar E[1], Cumbul A[2]

[1]Department of Anatomy, Facultyof Medicine, Yeditepe University, Istanbul, Turkey; [2]Department of Histology and Embryology, Faculty of Medicine,Yeditepe University, Istanbul, Turkey

Objective: In order to provide effective practical anatomy training, fixation of human materials and storage of fixed materials in appropriate conditions has importance. Frequently used formaldehyde-based fixatives are classified as "carcinogenic" by the International Agency for Research on Cancer (IARC). Alcohol-based fixatives are safe alternative by providing fast fixation in small-sized tissues and are not carcinogenic. In this study, the tissues that are fixed with formaldehyde-based and ethanol-based (FineFIX®) solutions were compared histomorphologically.

Methods: Five different tissues (liver, lung, muscle, skin and nerve) were taken from 2 formalin-fixed cadavers. The samples were divided into 2 groups: As group A tissues were stored in 10% formalin; as group B tissues were stored in FineFIX® solution for 90 days. In addition to the cadaveric samples, equivalent tissue samples were taken from 4 rats. The samples were divided into 3 groups: For 90 days, the tissues in group A were kept in only formalin; the tissues in group B were kept in FineFIX® solution following formaldehyde; the tissues in group C were kept in FineFIX® solution only. Paraffin blocks were prepared from the samples. Sections with a thickness of 5 microns were stained for histopathological evaluations and examined on Leica DM 6000 microscope with the Leica Application Suite Image Analysis Software. In the histological scoring, the level of degeneration of the tissues was taken into consideration: Scored as none: 0, minimum: 1, mild: 2 and severe: 3.

Results: The histomorphological degeneration score of the lung and liver samples were significantly higher in the formalin group than in the FineFIX® group ($p<0.001$). Significant results were also obtained in muscle, nerve and skin samples ($p<0.05$). In human cadaveric samples, histologically tissue damages were observed.

Conclusion: As a result, by microscopic examination, it can be concluded that FineFIX® fixation better preserves histological properties of the tissues.

Keywords: formaldehyde, FineFIX®, fixatives, fixation

O-100

The middle branches of the facial nerve in terms of facial surgery: an anatomical study

Gilan İY[1], Bobuş A[1], Gilan VB[2], Tezer MS[3]

[1]Department of Anatomy, Faculty of Medicine, Mersin University, Mersin, Turkey; [2]Department of Computer Technology and Information Systems, Mersin University, Mersin, Turkey; [3]Department of Oral and Maxillofacial Surgery, Faculty of Medicine, Istanbul University, Istanbul, Turkey

Objective: Anatomical knowledge of the facial nerve (FN) and its branches are the basis for the facial surgical procedures. The main donor branches are mainly the middle branches of the FN in surgical interventions on facial region such as facial transplantation, facial paralysis, nerve graft operations. Although there are many studies on its lower and upper branches in literature, there is not much on the course and number of its middle branches and the innervation of the zygomaticus major muscle (MZM). In this study, we aimed to determine the number of branches innervating the MZM via the surrounding structures. By this way, complications would be reduced, useless incisions would be avoided and duration of the operations would be shortened. Besides, the relations of the zygomatic branches and the point that is called as Zucker'spoint (ZP) in literature are evaluated.

Methods: 20 sides of 11 formalin-fixed cadavers were dissected. The incision line was performed vertically in front of the tragus. A needle is inserted to the midpoint of labial commissura and root of the helix which is determined as Zucker's point. The parotid gland, branches of the FN diverging from the anterior border of the gland and the MZM are dissected. The number of branches innervating the MZM are determined and the distance of them from the Zucker's point are measured. The results are compared in terms of sex and side.

Results: The course of the branches innervating MZM were about 3,6 mm below the Zucker's point in 14 sides, about 0,7 mm superior in 1 side and on the Zucker's point on 5 sides. The zygomaticus major muscle was innervated by one branch in 5 sides, by 2 branches in 12 sides and by 3 branches in 3 sides.

Conclusion: The region superior to the line from the labial commissura to the root of the helix is thought to be safe area to protect the innervation of the perioral muscles in facial surgeries. We believe the findings of the study would be heplful for the clinicians who will do invasive and surgical interventions on facial region.

Keywords: facial nerve, zygomaticus major muscle, cadaver, anatomic study

O-101

Rare liver abnormalities during surgical operation: ectopic liver-clinical experience

Yıldırım MA

Department of General Surgery, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: Ectopic liver tissue is a rare condition. Their detection are mostly coincidental.

Methods: Ectopic liver tissue was seen during laparoscopy in 6 of our patients. One of our patients was female, 5 were female. All of our patients had additional illnesses they had been treating since childhood. These include thalassemia media, familial mediterranean fever, pulmonary stenosis and ankylosing spondylitis.

Results: Our patient applied because of the right upper abdominal pain after 4 patient intermittent meals. The etiology of abdominal pain was investigated in 2 of our patients. Ultrasonography was performed by considering the polyp / gall bladder tumor in the gall bladder incidentally. Preoperative preparations of all patients are completed and taken into operation. Diagnostic laparoscopy showed ectopic liver tissue at the same localization on the biliary suture. Six patients with laparoscopic cholecystectomy were successfully applied. Histopathology of the patients was reported as ectopic liver tissue in 4 patients with nonspecific chronic hepatitis in 2 patients. Our clinic was also performed because of hepatocellular carcinoma with nonhepatic resection. In 2 of our patients, Hepatocellular carsinoma (HCC) was completely located in the right kidney and the liver was normal.

Conclusion: Ectopic liver tissue is observed in many organs, most commonly bile duct, less frequently umbilical cord, hepatic ligament, stomach, pancreas, retroperitoneum, and thoracostomy due to embryological development. Abdominal pain, abdominal hemorrhage, and symptoms of the pressured organs can give confusion. Often seen incidentally during laparoscopy or laparotomy. Preoperative recognition of these lesions is very difficult. Ectopic liver tissue may show malign transformation or may be associated with some anomalies. In asymptomatic people, the diagnosis is difficult. USG and other imaging may be confused with stony cholecystitis and bile duct tumors. In general, when encountered during surgery, it was observed that the meso structure was present in the organs in which it was adhered, and that the nourishment was provided from the surface of the tissue that was implanted. We think that it may cause HCC to settle on the right kidney. As a result, if ectopic liver tissue is detected during laparotomy, it should be excised because it may show malign transformation. Ectopic liver tissue can be observed coincidentally. Resection of the ectopic liver tissue is a viable option due to later malignant transformation possibility of the tissue. As we did in our patients, ectopic liver tissue can be observed with congenital abnormalities and congenital diseases.

Keywords: ectopic liver, congenital abnormalities

O-102

Clinical significance of clavicula morphometry

Yılmaz S[1], Güler H[1], Tokdemir A[1], Patat D[2]

[1]Department of Anatomy, Faculty of Medicine, Yozgat Bozok University, Yozgat, Turkey; [2]Department of Anatomy, Faculty of Medicine, Lokman Hekim University, Ankara, Turkey

Objective: Clavicula is one of the shoulder joint bones that connects the upper free bone to my body. It is the bone that first began to ossify in the human body and the ossification last completed. It makes joint with acromion of the lateral scapula and sternum medially. This study was conducted to determine the morphometry of clavicula.

Methods: In this study, 66 clavicula (10 left, 10 right) belonging to adult Anatolian people with no gender were used. Morphometrically the clavicula; maximum length of acromial tip superior inferior thickness, acromial tip anterior posterior thickness, distance between claviculalateral border and lineatrapezoidea middle point, maximum width of impressies ligament costoclaviculare, maximum length of facies sternalis, maximum width of facies sternalis maximal length of facies acromialis and facies acromialis the maximum width is measured.

Results: The maximum length of Clavicula was 133.728 mm, superior inferior thickening of acromial tip was 8.91 mm, acromial tip was anterior posterior thickness of 17.03 mm, distance between claviculater and lineatrapoidea was 23.29 mm, impressio ligamenti costoclaviculare maximal length was 14.09 mm, impressio ligamenti costoclaviculare maximum width 6.60 mm, maximum length of facies sternalis 19.74 mm, facies sternalis maximum width 14.55 mm, facies acromialis maximum length 15.03 mm, facies acromialis maximum width 8.11 mm.

Conclusion: The anatomical structure and morphometric measurements of clavicula are important for clinicians working in this area.

Keywords: clavicula, width, length, morphometry

O-103

Morphometrical properties of cavum trigeminale

Develi S

Department of Anatomy, Gülhane Faculty of Medicine, University of Health Sciences, Ankara, Turkey

Objective: Trigeminal neuralgia is one of the most common clinical conditions in craniofacial pain. It is usually seen unilaterally and neurovascular compression is one of the most accepted theories in etiology. Nerve decompression in the region of impressio trigeminalis is the Methods used for treatment. Impressio trigeminalis and ganglion trigeminalis is covered with the dura mater and the gap between the two structures is called the cavum trigeminale which is the target area for nerve decompression. In this text; it was aimed to obtain morphometric features of cavum trigeminale and its projection on cranium which could be useful in terms of surgical interventions.

Methods: 30 formalin-fixed craniums with open calvaria were included in the study. Foramen ovale, foramen spinosum, and processus clinoideus posterior were chosen as the landmarks and the distance between landmarks and the midpoint of the impressio trigeminalis was measured. The dimensions of the impression trigeminalis were measured. The projection of the impression trigeminalis with respect to the inner surface of the temporal bone was marked with a ruler. The marked point on the inner surface of the temporal bone was marked by a laser pointer towards the outer surface of the bone. Thus, the projection of the cavum trigeminale was detected from the outside of the cranium.

Results: The mean dimensions of the impressio trigeminalis were measured as 6.23×4.17 mm. The mean distance between impressio trigeminalis and foramen ovale, foramen spinosum, proc. clinoideus posterior were measured as 6.49 mm, 7.19 mm, 18.26 mm, respectively. The projection of the cavum trigeminale (impressio trigeminalis) was measured 4.57 mm superior to the junction of the root of the proc. zygomaticus os temporale with pars squamosa.

Conclusion: The obtained data was discussed with the literature data and evaluated in terms of surgical interventions.

Keywords: trigeminal nerve, trigeminal neuralgia, cavum trigeminale, trigeminal impression

O-104

The relationship between digit ratio and age at menarche in female university students

Ulusoy M[1], Petekkaya E[1], Bolatlı G[2], Acar M[3], Zararsız İ[4]

[1]Department of Anatomy, Faculty of Medicine, Beykent University, Istanbul, Turkey; [2]Department of Nursing, School of Health Sciences, Beykent University, Istanbul, Turkey; [3]Department of Physical Therapy and Rehabilitation, Faculty of Health Sciences, Necmettin Erbakan University, Konya, Turkey; [4]Faculty of Health Sciences, American University, Nicosia, Turkish Republic of Northern Cyprus

Objective: Menarche is an important beginning in a woman's life as it is considered a sign of femininity and fertility. The age at menarche (AAM) is known to be influenced by genetic (e.g.; maternal menarcheal age) and environmental (e.g.; nutrition, exercise, educationl evels, climate, body size) factors (Karapanou and Papadimitriou, 2010, Lyu et al. 2014). Excessive prenatal androgen exposure, adolescent and adulthoods exsteroids levels influence physicals sexual dimorphism. The most obvious physical properties that are thought to be influenced by prenatal sex steroid are index finger (2D) and ring finger (4D) (Manning ve Fink 2011). The ratio of these condand fourth finger lengths (2D:4D) is sexually dimorphic and used frequently as a non-invasive retrospective biomarker for prenatal androgen exposure.The aim of this study was to examine the association between menarche age and 2D:4D ratio of female university students who have adolescence and adulthood period characteristics.

Methods: A total of volunteer 285 female university students participated in the study. Students were asked to fill out a form. This form included questions on age, height, weight, history of physical health, medicine use, and AAM. The relationship between AAM and 2D:4D ratios were compared with correlation analysis.

Results: The mean age of the female students was 19.2±1 years. The mean AAM was 13.3±1.1 years. The mean 2:4 digit measurements of right and left hands were avareged. According to Spearman's correlation analysis we could not find an association between 2:4 digit and AAM.

Conclusion: Testosterone affects the development of 4th finger, while estrogen is effective on the development of 2nd finger, respectively (Zheng Z, Cohn MJ 2011). For this reason, the

male's ring finger is longer than his index finger. In our study, we could not find an association between 2P: 4P finger ratios and AAM in which estrogen effect was examined on female students.

Keywords: menarche age, 2: 4 finger ratio, androgen exposure

O-105

Examination of the concord between tests used for revealing of palmaris longus and flexor digitorum superficialis muscles in a Turkish population

Demir M

Department of Anatomy, Faculty of Medicine, Kahramanmaraş Sütçü İmam University, Kahramanmaraş, Turkey

Objective: The aim of our study is to evaluate the concord of several tests that are conducted to reveal palmaris longus and flexor digitorum superficialis muscles.

Methods: 182 male and 240 female volunteers with a mean age of 29±11 years participated in the study. In addition, the participants' height and weight were noted. Four tests (A. Schaeffer Test, B. Pushpakumar Test, C. Thompson Test D. Mishra Test) were conducted for projection of participants' m. palmaris longus in the right and left forearms and a single test was conducted for projection of m. flexor digitorum. All these tests were performed by the same researcher and the results were recorded in the prepared questionnaire form. Coherence between the tests was studied with the Cohen Kappa coefficient test.

Results: A total of 422 volunteers, 182 (43.1%) male and 240 (56.9%) female, participated in the study. It was seen that the Thompson Test detected the most m. palmaris longus at a maximum of 281 (66.3%) on the left forearm. M. flexor digitorum superficialis was detected in 277 (65.5%) left forearms. On the right side, it was seen that the Pushpakumar Test detected m. palmaris longus at 288 (67.9%) forearms. On the same side, m. flexor digitorum superficialis was detected in 292 (69%) forearms. On the left forearm was also found to be the best concord between the Schaeffer Test and the Pushpakumar Test (κ=0.855; p<0.001) with similar results. There was also no statistical correlation between m. flexor digitorum superficialis test and other tests with the left forearm (p=0.12). On the right forearm, the best concord was found among the Schaeffer Test and Pushpakumar Test (κ=0.836; p<0.001) and Mishra Test II (κ=0.765; p<0.001). On the right forearm there was no statistical correlation between m. flexor digitorum superficialis test and other tests (p=0.851).

Conclusion: The best fit between the tests used in the detection of m. palmaris longus was found to be between the Schaeffer test and the Pushpakumar test for the right and left side. Also, we think that having the knowledge about the presence/absence of m. flexor digitorum superficialis and m.palmaris longus at the forearm will contribute clinically to orthopedic surgery.

Keywords: forearm, palmaris longus muscle, flexor digitorum superficialis muscle, locomotor system.

O-106

Morphometric assessment of important landmarks on skull intended for Vidian nerve surgery

Üçerler H[1], Aktan İkiz ZA[1], Yörük MD[1], Boduç E[2], Öztürk L[1]

[1]Department of Anatomy, Ege University, Medicine Faculty, Izmir, Turkey; [2]Department of Anatomy, Kafkas University, Medicine Faculty, Kars, Turkey

Objective: The Vidian nerve passing through the pterygoid canal combines sympathetic and parasympathetic fibres separately derived from the greater petrosal branch of the facial nerve and the profound petrosal branch of sympathetic plexus of internal carotid artery. Thus, the Vidian nerve is essentially secretomotor to the nasal mucosa and lacrimal gland. The Vidian nerve surgery may be required some cases like severe intractable secretomotor rhinopathy. The aim of our study was to determine guide parameters for clinicians by morphometric assesment of important landmarks on cranium intended for Vidian nerve surgery.

Methods: For the study 23 half-skull bases, 40 skull bases and 40 skulls were obtained from the Department of Anatomy, Ege University School of Medicine. All specimens were dry. Parameters which we determined were meausered direct digital caliper if possible. If it was not possible to measure direct by caliper, we put thin wire between two points, determined distance on wire then measured distance on wire by digital caliper.

Results: Vidian canal was existed bilaterally on all specimens and connecting pterygopalatine fossa and foramen lacerum. Anterior opening of the Vidian canal was observed as funnel shaped on 58 specimens (%31.7), oval shaped on 64 specimens (%35), septate on 4 specimens (%2.2). Vidian canal was embedded type to sphenoidal sinus on 54 specimens (%52.4), protrude type to sphenoidal sinüs on 27 specimens (%26.2) and there were dehiscence on 22 specimens (%21.4). Anterior opening of the Vidian canal was assesed according to medial lamina of pterygoid process. It was located medially 196 of specimens (%92.3) and laterally 14 specimens (%7.7). Horizontal diameter of sphenopalatine foramen was mean 5.7±1.6 mm, vertical diameter was mean 5.7±1.6 mm. Distance between anterior opening of the Vidian canal and lateral side of piriform aperture was mean 53.3±5.3 mm.

Conclusion: Vidian canal and Vidian nerve are structures which very difficult to reach on skull. These constitute important landmarks in terms of microsurgery and endoscopic approaches to Vidian nerve. We concider that known of anatomical features of Vidian canal and preoperatif imaging by CT support choosing and planning safely surgical approach.

Keywords: Vidian canal, Vidian nerve, Vidian neurectomy, skull

O-107

Morphometric features of parietal foramen and its clinical importance

Develi S, Kocabıyık N

University of Health Sciences, Gülhane Faculty of Medicine, Department of Anatomy, Ankara, Turkey

Objective: The foramen parietales are the openings found on the sides of sagittal sagittalis which v.emissaria parietalis pass through. Generally, it is seen at the posterior of the suturasagittalis, near the "lambda". The point of imaginary line passing through the foramen parietale and intersecting the suturasagittalis is called "obelion" which is an anthropometrically used sign. The accessory fontanel, also known as the third or sagittal fontanel, conforms to this region. Besides v. emissaria parietalis, it was reported that a meningeal branch of a.occipitalis passed through foramen parietale. V. emissaria parietalisconnects sinus sagittalis superior with the SCALP veins and it is also called the Santorini-vein. SCALP infections can be carried into cranium via this valveless vein. Anatomic variations related to this region may also be associated with underlying congenital anomalies.In this study, it was aimed to evaluate morphometric properties and variations of foramen parietal in terms of clinical and anthropological aspects.

Methods: 39 calvaria and 40 isolated parietal bones (19-right, 21-left) were included in the study. Specimens were examined macroscopically and morphometric features such as existence, location, number, diameter of foramen parietale, distance between sutura sagittalis-Bregma-Lambda or presence of median foramen were evaluated.

Results: Foramen parietale was observed in 33/39 calvaria (85%), in 29/40 isolated parietal bones (72.5%). Bilateral foramen was observed in 14/33 cases (42.5%) and median foramen in 9 samples (27%). Pozzi's subsagittal suture was found in one sample.

Conclusion: The mean distance between landmarks, mean diameter and number of foramen parietale were determined and discussed with literature data in terms of morphometric and anthropometric aspects.

Keywords: foramen parietale, vena emissaria, sutura sagittalis, Lambda

O-108

Evaluation of lower extremity anthropometric measurements with pes planus and healthy subjects aged 11 to 14 years

Solgun S, Çetin A, Özbağ D

Department of Anatomy, Faculty of Medicine, İnönü University, Malatya, Turkey

Objective: It causes different types of feet complications due to plantar arc varies in population. Pes planus (PP) or flat foot is defined as decrease in feet longitudinal arc, total collapse of it. Another reason for PP is broad base foot. Disruption of the mechanical balance of the pes planus foot of the stresses, especially the lower extremity joints and the lumbar vertebrae. This study dedicated to compare Pes planus patients and healthy individuals in terms of detecting their antropometric measurements, indexes, feet types, and understanding their relationships.

Methods: We have studied 100 people from 11 to 14 ages in our research, 50 of them was diagnosed with PP and other 50 of them was healthy. In our study, lower extremity length, thigh, leg, foot length; waist, hip, thigh, leg, bimalleolar and foot circumference measurement; tarsal height and medial longitudinal arc height were measured. For these measurements, caliper and metric were used. Leg index, foot index and foot types were calculated with various anthropometric ratios.

Results: Assessment among the groups showed that significant differences were observed in female's height and weight measurements ($p<0.05$), right and left thigh lengths and environmental measurements, waist and hip circumference measurements and right foot bimalleolar circumference measurements ($p<0.05$). Significant differences were found in male's right and left foot bimalleolar measurements and leg indices ($p<0.05$). There were significant differences in right and left lower limb and leg lengths, right and left feet in MLA and tarsal heights both in females and males ($p<0.05$). There were no significant differences in other evaluations.

Conclusion: Pes planus did not only affect foot anthropometric measures but also lower extremity measures.

Keywords: lower extremity anthropometric, lower extremity index, flat foot

O-109

Incidence of the *os incae* (interparietal bone)

Çimen K, Otağ İ, Çimen M

Department of Anatomy, Faculty of Medicine, Sivas Cumhuriyet University, Sivas, Turkey

Objective: Os occipitale is one of the singular neurocranium bones that make up the back of the cranium. It consists of four different parts; pars squamosa, pars basilaris and two pair of the pars condylaris. Pars squamosa of os occipitale consists of two different parts as pars supraoccipitalis and pars interparietale. Sometimes the pars interparietale can remain as a separate bone from the pars supraoccipitale by a transverse sutura and than it is called *os incae* or os interparietale. The cranial variations in the developmental period lead to the presence of one or more individual bones in the superior squamous occipital bone, called os incae. Inca bones are less frequent than other sutural bones such as wormian bones. The presence of the sutural bones is usually associated with cranial and central nervous system anomalies.

Methods: 77 male (52 male, 25 female) skulls with out any sign of trauma or primer cranial surgery were studied which belong to the laboratories of Cumhuriyet University, Faculty of Medicine Department of Anatomy, Faculty of Letter, Department of

Anthropology. The presence and types of fine bones were determined macroscopically by observation. Kadanoff&Mutafov's method was used as a method of typing.

Results: There were 77 skulls used in the study and 4 (5.19%) *os incae* were found in 2 (8%) females and 2 (3.85%) males.

Conclusion: In terms of clinical information requirements, the presence of os incae, presence rates, sex-specific morphologyand how many fragments are important for clinicians. This study can be base for clinicians when they need to inform about population's cranial variations which they working with.

Keywords: os incae, interparietal bone, skull, human anatomy

O-110

Lesions of lower extremity confused with fractures: anatomical and radiologic evaluation

Çalışkan S[1], Çay N[2]

[1]Department of Anatomy, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey; [2]Department of Radiology, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey

Objective: Anatomical variations or some developmental conditions of lower extremity may cause fracture like signs in radiologic images. Radiologic views of the patients with Salter Harris fracture, multipartite patella, bipartite patella, os trigonum, accessory navicular bone and normal ossification centers of tibial tuberosity may mimic fractures. Salter Harris fracture is a form of child fracture involving epiphyseal plate. Multipartite patellae and bipartite patellae are congenital abnormalities which are commonly diagnosed with incidental findings. They are a result of failure of ossification during development. Os trigonum is an accessory bone of the foot located at posterolateral aspect of talus. Accesorry naviculer bone is an anatomical feature presenting as a sesamoid in the posterior tibial tendon or as an enlargement of the navicular itself. Normal seperate multiple ossification centers of the tibial tuberosity may mimic fractures. In the present study our aim is to review fracture like congenital variations and variants of normal anatomy which are a result of developmental stages in lower extremity to enlight clinical approach.

Methods: Included in this study were patients with fracture like signs. Records of the cases were retrospectively analysed by radiologist specialized in musculoskeletal system. All data were obtained from radiology department of Ankara Atatürk Training and Research Hospital.

Results: Diagnostic MR images of the patients with aforementioned conditions were collected and presented in this study.

Conclusion: Particular care is needed in assessing radiologic images in patients with non spesific symptoms or pain in the lower extremity. Aforementioned conditions must be kept in mind by doctors dealing with lower extremity to prevent misdiagnosis.

Keywords: fracture, lower extremity, radiologic anatomy, variation

O-111

Normal thyroid gland sizes in children in Aydın city: an ultrasonographic study

Polat Y[1], Metin Tellioğlu A[2]

[1]Department of Radiology, Faculty of Medicine, Aydın Adnan Menderes University, Aydın, Turkey; [2]Department of Anatomy, Faculty of Medicine, Aydın Adnan Menderes University, Aydın, Turkey

Objective: Iodine deficiency, which is avoidable, is an important factor for permanent brain damage and mental retardation at childhood. Aydın City is a region with intermediate iodine deficiency. Ultrasonography is the most efficient screening Methods for the evaluation of thyroid gland size for children. The aim of this study is to evaluate the normal size of the thyroid gland in children aged 0–18 years, with thyroid ultrasonography. We aimed to find the reference values for the normal thyroid gland sizes of children in this region.

Methods: Ultrasonographic thyroid gland dimensions were retrospectively evaluated for the last 3 years in total of 374 children (151 males and 223 females) who were admitted to our Department of Radiology with no pathology related to thyroid diseases. We used 'Anteroposterior diameter (cm) × transverse diameter (cm) × craniocaudal diameter (cm) × 0.479' formula for the evaluation of the lobe volume. All data obtained were analyzed using the SPSS 18.0 program. Descriptive statistics were shown as mean±ss.

Results: A total of 374 images were examined, 68 of which were 0–2 years (group 1), 69 were 3–6 years (group 2), 116 were 7–12 (group 3), 121 were 13–18 (group 4). Respectively, mean right and left lobe volumes of the groups were as follows. Group 1: 0.54±1.42 / 0.48±1.32, Group 2: 1.19±1.73 / 1±1.72, Group 3; 2.83±2.37/2.27±1.97, Group 4; 5.3±3.7 / 4.16±2.51 cm^3. There was a positive correlation between the age and the thyroid gland size

Conclusion: With this study, we think that we were able to determine normal thyroid gland sizes in our region. Our study could be a guiding program for future studies in our country and for the literature.

Keywords: thyroid volume, children, ultrasonography

O-112

Volumetric analysis of the putamen in Parkinson's disease with ultra-high field magnetic resonance imaging

Altunsoy E[1], Plantinga BR[2], Uludağ K[1,4], Temel Y[4], Şahin B[1]

[1]Department of Anatomy, Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey; [2]Biomedical Image Analysis, Eindhoven University of Technology, Eindhoven, The Netherlands; [3]Maastricht Brain Imaging Center, Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, The Netherlands; [4]Department of Neuroscience, Faculty of Medicine, Maastricht University, Maastricht, The Netherlands

Objective: The basal ganglia play important role in movement and mood related behaviours. Regarding neuroimaging Methods,

advances in magnetic resonance (MR) imaging technology contributed to a better understanding of the anatomical changes in patients with Parkinson's disease (PD). The aim of this study was to investigate the volume of the putamen and its subdivisions with ultra-high field MR imaging in PD.

Methods: This study was conducted at the Maastricht University Medical Center. The groups consist of age and sex matched 9 healthy controls (3F, 6M; mean age 61.44±6.02) and 5 PD patients (2F, 3M; mean age 65.80±7.40). Putamen absolute volumes were calculated on ITK-SNAP version 3.4.0 beta software. To compensate for bias due to inter-subject variations in intracranial volume, we normalized the nuclei volumes to the intracranial volume. The boundaries of these nuclei were delineated by manually. Additionally, we segmented the putamen in itself and obtained eight subparts of the putamen to describe the localization of volumetric difference more detailed using FMRIB Software Library (FSL) tool FNIRT.

Results: Normalized volume (Vn) of the right putamen were 0.256±0.021 % and 0.213±0.035 % in control and patient groups respectively. Vn of the left putamen was 0.256±0.029 % in controls and 0.219±0.019 % in patients. The volumes of right and left putamens were bigger in the controls (p=0.040, p=0.019). Vn of the right putamens in the second, third and eighth sub-regions were 0.0216±0.0022% and 0.0171±0.0032%; 0.0120±0.0018% and 0.0072±0.0018%; 0.0453± 0.0051% and 0.0372± 0.0062% in control and patients, respectively. The subdivisions of the putamen were bigger in the controls (p=0.019, p=0.001, p=0.042). Vn of the left putamens in the fourth, fifth and eighth sub-regions were 0.0094±0.0018% and 0.0065±0.0015%, 0.0462± 0.0089% and 0.0387±0.0065%; 0.0415±0.0046% and 0.0352±0.0033% in control and patients, respectively. The subdivisions of the putamens were bigger in the controls (p=0.019, p=0.042, p=0.012).

Conclusion: Our results showed that the normalized volumes of the putamen and its subdivisions were bigger in the controls than that of the PD group for right and left sides. We concluded that the atrophy of the putamen and its subdivision occur in PD.

Keywords: volume, putamen, Parkinson's disease, ultra-high field, magnetic resonance imaging

O-113

Examination of the relationship between the liver and spleen volumes by the computed tomography images in healthy subjects using the Cavalieri principle

Acar Güdek M[1], Şahin B[2]

[1]Department of Anatomy, Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey;[2] Department of Anatomy, Faculty of Medicine, Karabük University, Karabük, Turkey

Objective: The increased pressure in the splenic vein is the main cause of the increase of the liver volume. Thus, hepatomegaly and splenomegaly often appear together. It could be proportional relation between spleen and liver sizes. In this study, we aimed to estimate the liver and spleen volumes of healthy individuals on the computed tomography (CT) images using the Cavalieri principle of sterelogical methods and determine the proportional relation between them.

Methods: This study was approved by the Ondokuz Mayıs University Ethics Committee. The liver and spleen volumes measurements were performed in 57 individuals (30 males and 27 females), without pathologies in the abdomen. Female and male average ages (±SD) were 55.89±11.62 and 54.73±16.77 years, the heights were 1.60±0.10 and 1.76±0.09 meters in length and the weights were 74.33±19.88 and 86.20±16.67 kg. Each subjects scanned by CT in axial direction and the section thickness was 1mm. Images were transferred to the ImageJ software and the sectional cut surfaces of the liver and spleen were measured using the planimetry and the volumes of them were estimated using the Cavalieri principle.

Results: Body mass indexes (±SD) were 29.40±9.46 and 27.84±5.00, for women and men, respectively. The liver volumes of the females and males were 1521.11±366.56 and 1726.15±361.21 cm^3, respectively. The spleen volume measurements were 269.53±145.21 and 370,92±256.54 cm^3, respectively.

Conclusion: It was determined that there was a significant positive correlation between the liver and spleen volumes in male and female subjects (r=0.538. p≤0.05 and r=0.380, p≤0.05, respectively)

Keywords: volume, computerized tomography, Image J, Cavalieri principle, liver, spleen

O-114

Comparison of effectiveness of the calculation of isolated organ volumes with Cavalieri principle by using planimetry and graphical tablets

Nahir M[1], Şahin B[2]

[1]Department of Anatomy, Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey; [2]Department of Anatomy, Faculty of Medicine, Karabük University, Karabük, Turkey

Objective: The volume of organs or structurers can be estimated using the Cavalieri principle of the stereological techniques. This process could be done on films or digitalized images using the computers. However, the graphical tablets are easy to handle the processes. We haven't seen a study comparing the results of computer and graphic tablets. This study aims to compare the advantages and disadvantages of computer interfaces used for organ volume measurement according to the criteria of consistency, duration and comfort based on the Cavalier principle.

Methodss: In our study, abdominal computed tomography (CT) images of axially oriented, 3 mm thick consecutive sections of 22 women and 21 men were obtained from the radiological imaging center of Ondokuz Mayıs University Radiology Department. Ethical approval is taken for the study. Images are

arranged in the required format using Horos software. With ImageJ software, spleen and kidney volumes were calculated on CT images with using the Cavalieri Principle. Computer mouse and graphic tablet were used during calculation. Repeated measurements were taken with each device to determine the intra-class reliability.

Results: The mean of the first volume measurements of the kidney using a computer mouse was 181.53±51.72 cm^3. In the second measurements of the kidneys with the same device, the volume of the kidney was measured as 180.64±51.29 cm^3. The mean durations of the first and second volume measurements taken on the kidney using a computer mouse were 283.55± 56.03 secs and 237.11±63.28 secs, respectively. The mean value of the first volume measurements of the kidney using a graphic tablet was 179.34±51.36 cm^3. In the second measurements of the kidney performed with the same device, the volume of the kidney was measured as 179.09±51.34 cm^3. The mean durations of the first and second measurements taken on the kidney using graphite tablets were 128.79±33.32 secs and 119.55± 31.35 secs, respectively.

Conclusion: Based on what we have gained in the study, we have shown that graphical tablets are a device that can be used as an alternative to computer software during the application of the Cavalieri principle.

Keywords: kidney, Cavalieri, spleen, volume, stereology

O-115

Evaluation of the volume of brain in epileptic children by stereological methods

Adanır SS[1], Cihan ÖF [1], Özcelik AA[2]

[1]Department of Anatomy, University of Gaziantep, Faculty of Medicine, Gaziantep, Turkey; [2]Department of Pediatric Neurology, University of Gaziantep, Faculty of Medicine, Gaziantep, Turkey

Objective: The developmental process of the human brain lasts about 15 years after fertilization. In the first 2 years of life, the brain attains to 80% of adult weight. With age 5, brain size reaches 90% of adults. Brain volume is important for many diseases, both in children and adults.The aim of this study is to assess brain volume development of epileptic children and the effect of brain volume on epilepsy.

Methods: Permission was obtained from Gaziantep University Clinical Research Ethics Committee before the study (Decision Number: 2018/29). Cranial MRI of 67 (29 female, 38 male) epilepsy patients aged 3–16 (8.5±3.8) years whowere followed in the pediatric neurology polyclinic of Gaziantep University Faculty of Medicine were investigatedretrospectively in the Stereo Investigator 8.0, MicroBrightField, USA program. Cerebralcortex, whitematter, cerebellumand total brainvolumewerecalculated.

Results: Volume of cerebellum was 59.01±39.84 cm^3 in females andit was 71.78±47.30 cm^3 in males. Volume of cerebral cortex was 261.66±106.64 cm^3 in females andit was 295.65±107.97 cm^3 in males. Volume of white matter was 127.89±63.95cm^3 in females and it was 134.23±53.29 cm^3 in males. In females, volume of total brain was 612.54±430.29 cm^3 and it was 682.52± 466.99 cm^3 in males. For all four parameters, female subjects had less volume compare the male subjects. But the difference was not statistically significant (p>0.05).There was no statistically significant difference in all parameters in children with partial and generalized epilepsy (p>0.05). Cerebellum, cortex and total brain volumes showed a statistically insignificant increase with age (p>0.05).There was a statistically significant increase in white matter volume with age (p=0.026). Examination of brain volume in children with epilepsy is important to elucidating the anatomic changes underlying the disease. The findings obtained in this study are thought to contribute to the literature.

Keywords: epilepsy, brain volume, MRI, stereology

O-116

Is there a relationship between the number of middle colic artery and transverse colon length? A study of radiological anatomy with 3D CT

Pashapoor S, Gürsoy A

Departments of Radiology, Ankara University Faculty of Medicine, Ankara, Turkey

Objective: Preoperative knowledge of the normal pattern and variations of the mesenteric arteries is substantially important in the successful surgery. In this study we identified the relationship between middle colic artery (MCA) variations and the transverse colon length using 3-D multidetector CT.

Methods: We included 293 randomizing patients in the study who underwent abdominal multidetector CT for various clinical reasons in Ankara university hospital between July 2014–May 2016.

Results: From the total 293 patients 168 (57.3%) were male and 125 female (42.7%) and the median age was 53. The median length of transverse colon was measured 439 mm in the whole patients. There was 80 patients with double and 213 patients with one MCA. The median length of transverse colon in patients with one MCA was 425 mm where it was 465 mm in whom with double MCAs (p<0.001).

Conclusion: The different colon disease which requires surgical treatments, operation technics and strategies have extremely important role in subsequence prognosis. Therefore pre operation awareness of vascular anatomy and the length of colon have a crucial importance to the surgeon before colon resection. In this regard 3-D computed tomography has an important role to show the colon and the vascular anatomy. The transverse colon supplies by the MCA which is the first branch of SMA (superior mesenteric artery). MCA has the variety of branching variations. Although in some patients the MCA is absent (25%) but in some patients there is more than one MCAs (10%). In our study there was no any absent MCA

and any patient with more than two MCAs. In this study 27.3% of patients had double MCAs. We could define a significant relationship between double MCA and the length of transverse colon ($p<0.001$). Preoperative 3D-CT is informative and very helpful for surgeons in colonic resections. In this study the transverse colon was longest in patients with double MCA in comparison with the patients with one MCA.

Keywords: middle colic artery, transverse colon, computed tomography

O-117

Evaluation of prostatic artery origin with 128 slice computed tomography angiography

Çelebioğlu EC[1], Akkaşoğlu S[2], Çalışkan S[2], Günenç Beşer C[3]

[1]Department of Radiology, Faculty of Medicine, TOBB University, Ankara, Turkey; [2]Department of Anatomy, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey; [3]Department of Anatomy, Faculty of Medicine, Hacettepe University, Ankara, Turkey

Objective: Knowledge of radiological anatomy of prostatic arteries has important clinical and surgical implications. The morphometric changes observed in the vessel is valuable in the diagnosis of many disorders. Pelvic vascular anatomy is very difficult to evaluate in cadavers. Computed tomography angiography (CTA) is gold standard for showing pelvic arterial anatomy. Aim of the present study was to define prostatic arterial anatomy which is important for surgeons and radiologists dealing with prostatic arterial embolization.

Methods: In this study; the morphometric analysis was performed by CT angiography in 121 patients. All data were evaluated retrospectively in Radiology Department of TOBB ETU University. The ages of the patients were between 41–89. Each pelvic side was considered separately. In 121 patients diameters and origin of the 242 prostatic arteries were evaluated.

Results: The diameter of the right prostatic artery was 0.9–2.4 mm. The diameter of the left prostatic artery was 0.9–2.7 mm. In 47 cases (39%) the right prostatic artery originated from the inferior vesical artery. Remaining right prostatic arteries originated from internal pudendal artery [43 cases (36%)], gluteopudendal trunk [9 cases (7.4%)], obturator artery [7 cases (5.8%)], inferior gluteal artery [4 cases (3.3%)], middle rectal artery [one case (0.8%)], umbilical artery [one case (0.8)], vesical trunk [one case (0.8%)], inferior rectal artery [one case (0.8%)]. In the 43 cases (36%) the left prostatic artery originated from inferior vesical artery. Remaining left prostatic artery originated from internal pudendal artery [38 cases (31%)], obturator artery [16 cases (13%)], gluteopudendal trunk [11 cases (9.1%)], vesical trunk [three cases (2.5%)], inferior gluteal artery [three cases (2.5%)].

Conclusion: In patients with atherosclerosis CTA is crucial for better planning of the surgery. The data obtained in this study are important for the determination of pelvic vascular disorders.

Keywords: computed tomography angiography, origin, prostatic artery anatomy

O-118

Saphenofemoral region major superficial vein variations evaluated by ultrasonography technique

Yılmazsoy Y[1], Baltu Y[2]

[1]Department of Radiology, Bolu İzzet Baysal State Hospital, Bolu, Turkey; [2] Department of Plastic Surgery, Dr. Abdurrahman Yurtaslan Ankara Oncology Training and Research Hospital, Ankara, Turkey

Objective: This study aims to detect the frequencies of variations of the major superficial venous tributaries according to the anatomical classifications by ultrasound.

Methods: Between February 2018 and June 2018, 79 patients who applied to our radiology department for the examination of lower extremity venous doppler ultrasound imaging were included in the study and a total of 158 safenofemoral venous vascular anatomy was evaluated by ultrasonography. The saphenofemoral venous drainage pattern was evaluated in detail, classified anatomically and the frequencies were calculated.

Results: The incidence of anterolateral accessory saphenous vein was found to be 64% and the incidence of posteromedial accessory saphen vein was found to be 46%. According to the Daseler classification type VIII was the most frequent variation followed by type VI and type V [2]. According to the Glasser classification, type 2c was the most common type, whereas type 2b and type 2a were less frequent [3]. When classified according to the number of trubitaries, three tributaries was the most frequent (49%). In 3% of the cases, the superficial external pudendal vein was directly drained to the main femoral vein.

Conclusions: The examiantion of the venous anatomy and variations of the saphenofemoral region of each patient by ultrasound will contribute to a reduction in the recurrence rate after surgical or endovascular treatment of venous insufficiency. At the same time, during inguinal dissection, surgeons should not ignore the incidence of accessory saphen veins.

Keywords: saphenofemoral region, venous variation, ultrasound, anatomic classification

O-119

The morphometric development of fetal cadaver mandible

Kastamoni Yaşar Y[1], Dursun A[1], Şanlı OC[1], Yüzbaşıoğlu N[2], Albay S[1]

[1]Department of Anatomy, Faculty of Medicine, Süleyman Demirel University, Isparta, Turkey; [2]Department of Anatomy, Faculty of Medicine Istanbul Medipol University, Istanbul, Turkey

Objective: The mandible is the largest, strongest and only moving bone of the head skeleton. The lower jaw bone, which forms the lower part of the face skeleton, consists of one body of mandible horizontally extending and the teeth are located and two ramus of mandible extending vertically at the back. In this study, we aimed to better understand the development of

mandible by measuring some morphometric properties of the mandible in fetal cadavers.

Methods: Study was performed mandibles of 35 fetuses (18 male, 17 female), aged between 21 and 40 weeks. Fetuses were examined in 3 groups according to developmental stages; 2nd trimester, 3rd trimester and full term. Both right and left sides of each mandible; mandibular notch anterior-posterior length, mandibular notch depth, gonion-condyle distance, angle of mandible, mental foramen upper-lower borders distances, mental foramen-gonion distance, mental foramen-mandibular symphysis distances were measured. In addition, bigonial distance measurement was done for each mandible. Measurements of mental foramen were performed using digital caliper, and other measurements were performed using the ImageJ program. Data obtained were analyzed with the SPSS 20 for Windows program.

Results: There was no significant gender difference for all parameters. According to trimesters, all parameters, except the angle of mandible, increased naturally with the development of mandible. It was observed that the decrease from the 2nd trimester to the 3rd trimester and the increase from the 3rd trimester to the full term of angle of mandible.

Conclusion: We believe that this study will provide a better understanding of mandible development and will be useful for early detection of pathologies and anomalies.

Keywords: fetal cadaver, mandible, development

O-120

Foot morphometry in human fetal cadavers

Deniz İ[1], Şeker M[2], Akın D[2], Yılmaz MT[2]

[1]Isparta University of Applied Sciences, Isparta, Turkey; [2]Department of Anatomy, Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: The foot is the distals segment of the body that touches the floor. It has a very specialized structure consisting of bones, muscles, joints and ligaments, which have important functional tasks in normal daily activities such as walking upright, moving body weight, etc. In this study, we was aimed to make morphometric foot measurements according to gestational age and gender in human fetuses.

Methods: In this study, 7 (23.3%) patients in the third trimester and 23 (76.7%) in the second trimester and 19 (63.3%) were male and 11 (36.7%) were female were performed on abortion fetuses in total 30 in the Necmettin Erbakan University Meram Medical Faculty Anatomy Department. Microdissection tools, microdissection microscopy (Kaps Sam 62), caliper (Stainless hardened) with 0,01 mm precision and camera (Canon D1000) were used in the study.Acropodian-pernion measurement (AP), 2nd, 3rd, 4th, 5th finger-pternion measurements, metatarsaltibia-metatarsalfibula measurements (MT-MF), 1st, 2nd, 3rd, 4th, 5. Footfinger length, malleolwidth (MG), proximal metatarsal width (PMG), distal metatarsal width (DMG) dorsal face measurements were taken. The obtained data were evaluated in the SPSS 21.0 program.The data were evaluated both in terms of descriptive (mean, Standard deviation, maximum and minimum values and percentages) and statistical significance. The results were evaluated in 95% confidence interval and statistically $p<0.01$ was considered significant.

Results: Average values for all parameters were determined. When the left and right foot measurements of male and female fetuses were compared, no statistically significant value was found between the parameters. Inaddition, correlations between many parameters have been determined. In the second trimester measurements, AP-1 length was found to be 30.64± 6.91 mm and AP-1 length in the third trimester was 55.57±7.31 mm. The difference between trimester was found significant in all measurements.

Conclusion: It is important that normal values of fetal parameters in fetal development are obtained according to gestational age, each community determines its normal values for its own population and fetal growth curves are extracted. Especially the studies on the anatomy of the foot in the fetal period are more limited. It has been concluded that the knowledge obtained from our study would be useful to surgeons to know fetal foot anatomy in terms of examining other studies and fetal foot developments related to this subject.

Keywords: foot, abortion fetuses, gestational age

O-121

Investigation of the sciatic nerve development using microscopic method in human fetuses

Özen KF[1], Kaya D[1], Akyol Bahçeci S[2], Malas MA[1]

[1]Department of Anatomy, Faculty of Medicine, Izmir Katip Çelebi University, Izmir, Turkey; [2]Department of Histology and Embryology, Faculty of Medicine, Izmir Katip Çelebi University, Izmir, Turkey

Objective: In studies with human fetuses, research about macroscopic morphometric analysis and variations is often confronted. There are few studies examining the changes in the number of axons, especially the ratio of parenchyma to stroma, with the increase in gestational age, including the intrauterine period. We aimed to investigate the development over axon numbers and parenchyma/stroma ratio with a stereological approach in human fetuses.

Methods: Non-external anomalous 20 human fetuses (12 to 38 gestational weeks) from fetus collection of Izmir Katip Celebi University Medical Faculty were studied. On the histological specimens prepared from sections of proximal and distal levels of sciatic nerve and tibial nerve, axonal counts and parenchyma/stroma ratios were determined by stereological Methods.

Results: According to our findings, sciatic nerve and the number of axons at the proximal and distal levels of tibial nerve increases with gestational age, while the parenchyma-stroma ratios tend to increase numerically as the developmental weeks progress, this increase can be shown statistically in some sec-

tions (only the proximal level of tibial nerve). Statistical results obtained from the sections of sciatic nerve and tibial nerve show no significant difference between the right and left sides, and between the proximal to the distal section levels. Consequently, the number of axons increases with gestational age in accordance with the literature throughout the fetal period.

Conclusion: It is hoped that the Methods of comparing parenchymal-stroma ratio used in this study is different from previous studies around fetal peripheral nerve growth anatomy.

Keywords: sciatic nerve, axon count, parenchyma-stroma rate, fetal period

O-122

The effect of gestational diabetes on placental weight in Sudanese

Nouh MA, Saadeldin AI

Department of Anatomy, Alzaeim Alazhari University, Khartoun North, Sudan

Objective: The placenta is the most important foetal-maternal organ and it is highly susceptible to changes. Gestational diabetes may influence placental weight. To find out the effect of gestational diabetes on placental weight in a singleton pregnancy at term with a known last menstrual period.

Methods: A case control study was conducted in Omdurman Maternity Hospital, Khartoum-Sudan (January 2015–September 2017), after due approval from institutional research committee, Alzaeim Alazhari University. The subjects were mothers who delivered in the hospital. Cases were selected randomly, and divided in two groups: group B consisted of mothers having normal pregnancy, group A consisted of mothers whose pregnancies were complicated by gestational diabetes mellitus.

Results: The data were managed statistically using Student's t test. A P-value of less than 0.05 was considered to be statistically significant. A total of 385 placentae were collected with their attached umbilical cords immediately post delivery. After separating the baby from the umbilical cord, the specimens were tagged with numbers that corresponded with the numbers indicated in the data of the mother. An accurate preparation of the placentas was performed by trimming off all membranes, superficial fetal vessels were drained of all blood and adherent blood clots were removed from the maternal surface, the umbilical cord was severed at the insertion site on the placenta surface.128 were gestational diabetic placentae years respectively. Their mean gestational age was 37.3 and 37.7 weeks respectively).The weighing of each placenta was accomplished within one hour after delivery. The placenta was weighed two times on a calibrated digital device in grams The mean placental weight in group A was 660±116 gm (range, 470–900), while it was less in group B as 545±206 (range, 300–900) and the difference was significant (p-value <0.021).There is a significant increase in the placental weight in gestational diabetes placentae.

Conclusion: In the current study, significant change in the placental weight have been observed between normal and gestational diabetes placentae. There was also increase in birth weight and feto-placental ratio in group with gestational diabetes.

Keywords: placenta, gestational diabetes mellitus, normal pregnancy, placental weight, parity, body mass index

O-123

Quantitative assessment of the growth dynamics of the teres major muscle in human fetuses

Beger O[1], Koç T[1], Beger B[2], Kayan G[1], Uzmansel D[1], Kurtoğlu Olgunus Z[1]

[1]Department of Anatomy, Faculty of Medicine, Mersin University, Mersin, Turkey; [2]Department of Pediatric Surgery, Faculty of Medicine, Van Yüzüncü Yıl University, Van, Turkey

Objective: The main objective of the study was to examine the use of teres major (TM) as a flap in the pediatric surgeries from an anatomical perspective: by 1) revealing the growth dynamics of the developing TM; 2) assessing the possible inter-connecting structures between TM and latissimus dorsi (LD); 3) exposing the innervation patterns of TM in human fetuses.

Methods: Study was conducted on 50 fetuses (26 females and 24 male), on a mean gestational age of 22.86±3.21 (range, 18-30) weeks. All the measurements were collected with a digital caliper and a digital image analysis software. Additionally, structural relations between TM and LD were examined in detail and further classified.

Results: No significant difference of side and sex was detected on TM measurements ($p>0.05$). Linear functions for the surface area, width, length of the superior and inferior margins of TM were detected as follows: $y=-257.142+18.334 \times$ Age (weeks), $y=-5.497+0.545 \times$ Age (weeks), $y=-1.621+1.068 \times$ Age (weeks), and $y=-2.147+1.284 \times$ Age (weeks) respectively. As classified in five types, a number of 33 muscular or tendinous connections between TM and LD were detected. Musculotendinous slips from TM to triceps brachii (TB) were evident in four sides. Innervation of TM was observed to be providing by lower subscapular nerve in all the cases.

Conclusion: Firstly, linear functions, representing the developing fetal morphometry obtained by our study can be adapted for estimating the morphometric of this muscle in early childhood. Besides, acknowledging the diverse appointments of TM with the surrounding muscles such as LD and TB may facilitate the prevention of neurovascular structures and the application of surgical procedures during tendon transfers. In brief, our findings are highly potent to bring the attention of pediatric surgeons.

Keywords: fetus, latissimus dorsi, muscle transfer, teres major muscle, triceps brachii muscle

O-124

Ultrasonographic determination of fetal nasal bone length in pregnancy

Desdicioğlu R[1], İpek A[2]

[1]Department of Obstetrics and Gynecology, Ankara Yıldırım Beyazıt University, Faculty of Medicine, Ankara, Turkey; [2]Radiology Clinic, Ankara Atatürk Training and Research Hospital, Ankara, Turkey

Objective: The nasal bone may be images with ultrasonography from the 10th week of pregnancy. If the nasal bone is aplastic or hypoplastic, karyotype anomalies may be present. We aimed to measure the nasal bone length of fetuses from the 18–27 weeks of gestation and to determine the correlation between nasal bone length with maternal age, maternal body mass index, week of pregnancy and fetal parameters and to clinically assess it.

Methods: The study included 328 healthy fetuses from 18–27 weeks gestation of cases aged from 19–40 years (mean: 28.52). The nasal bone length of fetuses was measured. Additionally, the fetal parameters of bi-parietal diameter (BPD), abdominal circumference (AC) and femur length (FL) were obtained. Later the fetuses were divided into the following groups; five groups based on maternal age of 20 years and younger, 21–25 years, 26–30 years, 31–35 years and older than 35 years; and four groups based on body mass index of 20–24.9, 25–29.9, 30–34.9 and more than 35.

Results: The nasal bone lengths of fetuses from 18–27 weeks of gestation were identified to vary from 6.58–9.10 mm (mean: 7.20 mm). Additionally, the mean and standard deviation of nasal bone measurements and fetal parameters according to maternal age, maternal body mass index and pregnancy week were determined. Later the correlations between nasal bone length with fetal parameters, maternal age, maternal body mass index and pregnancy week were examined. Nasal bone length showed correlation with pregnancy week and fetal parameters ($p<0.01$) and did not show correlation with maternal age and maternal body mass index ($p>0.01$). Comparison of nasal bone length with week of pregnancy found a statistical difference ($p<0.01$), while comparison with age groups and body mass index groups did not determine a statistical difference ($p>0.05$).

Conclusion: Maternal age and maternal body mass index are important factors affecting fetal development. We believe the data obtained as a result of our study will be beneficial to clinicians in relation to assessing fetal development, determining fetal age and identifying fetal anomalies.

Keywords: pregnancy, ultrasonography, nasal bone

O-125

Morphology of suboccipital muscles and course of nerves in occipital region

Yağmurkaya U[1], Uysal İİ[2], Aydın Kabakcı AD[2]

[1]Gülenyüzler Special Education and Rehabilitation Center, Konya, Turkey; [2]Department of Anatomy, Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: Regio suboccipitalis is the region containing the joint between the head skeleton and the upper part of the columna vertebralis. Tapezius and semispinalis capitis muscle are located at superficial. Rectus capitis posterior major, rectus capitis posterior minor,obliquus capitis superior and obliquus capitis inferior classified as back of the neck muscles are located at deep. Regio suboccipitalis is important in terms of invasive interventions in the region due to the presence of important anatomical structures within it. The aim of this study was to evaluate back of the neck muscles morphologically, course of greater occipital nerve and third occipital nerve in occpital region and have detailed anatomical knowledge about relationship between muscles and nerves.

Methods: This study was conducted on 15 fetal cadavers (7 males, 8 females) in the fetal cadaver collection at Department of Anatomy, Meram Faculty of Medicine, University of Necmettin Erbakan. The dissections were made under microdissection microscope. Electronic caliper was used for morphometric measurements (the distance between superior nuchal line and the point where the greater occipital nerve and third occipital nerve emerged the aponeurosis of trapezius muscle, the distance between greater occipital nerve where it emerged the semispinalis capitis muscle and the point where it gives first branch, width of origo and inserstio of back of the neck muscles and lenght of back of the muscles). Also, the position of the greater occipital nerve ws determined according to semispinalis capitis and obliquus capitis inferior. In addition, innervation of the back of the muscles were detected and the variations were noted during the study.

Results: When the measurements related to the muscles were evaluated, it was found that only the origo width of obliquus capitis inferior muscle and the lenght of obliquus capitis superior muscle was statistically significant ($p<0.005$) between genders.It was observed that gretater occipital nerve pierced the semispinalis capitis in one piece in 27 (90%) of the fetal cadavers. In 3 (10%) fetal cadavers, more than one branch of greater occipital nerve pierced the semispinalis capitis. It was determined that the greater occipital nerve passed though the semispinalis capitis muscle in 29 (96.7) of fetal cadavers and passed from medial edge of muscle in 1 (3.3%).

Conclusion: Entrapment neuropathies can be seen by reason of greater occipital nerve pierced the neighbouring muscles in the occipital region. Especially in the treatment of headache caused by these entrapment neuropathies, blockage of gretaer occipital nerve is very important. We believe that it would be beneficial to have detailed anatomical knowledge about the nerves in this region and the relationship between this nerve and the muscles during the surgical procedures and/or nerve blockages to be performed in the region.

Keywords: suboccipital muscle, morphology, greater occipital nerve, third occipital nerve

O-126

The morphometric analysis of subclavian artery by multidetector computed tomography (MDCT)

Özen KE[1], Çiçekcibaşı AE[2], Aydoğdu D[3]

[1]Department of Anatomy, Faculty of Medicine, Izmir Katip Çelebi University, Izmir, Turkey; [2]Department of Anatomy, Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [3]Department of Radiology, Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: As the area which the blood is being supplied into by SA are wide and important and its function is to serve as an crucial arterial intersection, morphometric data and variations regarding SA and its branches are needed in the field of medicine. We aimed to investigate the morphometric analysis of SA by using multidetector computed tomography.

Methods: In this study, computed tomography angiography images of 101 patient (101 left SA, 101 right SA) were studied. Variational cases were detected and the angle appeared origin of SA as well as the diameters corresponding to the origin of SA and of its branches were measured.

Results: Thirteen different variations have been described while performing classification in non-linear base (A0, A1, A2, B0, B1, B3, B4, B5, B6, B7, C0, C1, C7 types) for the ramification patterns of subclavian artery (A0:54%, B0:33%, other types:13%). No significant differences were observed on partially united variation types between sexes and both sides. On the examination of SA itself, an aberrant right SA (ARSA) was detected on a female patient. Morphometric data of subclavian artery and of its branches (separation angle and initial diameter measurement) were studied in a comparative statistical analysis on the basis of sex and lateralization. This analysis showed statistically significant results only in the comparison of the mean diameters of SA at the starting point between sides, on both sexes [left SA: (female: 11.87±2.20 mm, male: 12.41±1.94 mm), right SA (female: 9.10±2.30 mm, male: 9.78±1.84 mm) ($p<0.05$).

Conclusion: Concerning the comparisons made on the basis of sex and lateralization, no statistically significant difference was observed for the other measurements. We hope this study would contribute the literature in this field of research and be helpful for the clinicians interested in SA.

Keywords: subclavian artery, MDCT, morphometry, variation, aberrant right subclavian artery

O-127

Prevalence and clinical significance of cartilago triticea: preliminary report

Koca R[1], Fazlıoğulları Z[2], Keleşoğlu KS[3], Koplay M[3], Karabulut AK[2]

[1]Afyon High School of Health, Afyon University of Health Sciences, Afyonkarahisar, Turkey; [2]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [3]Department of Radiology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: Cartilago triticea is a small oval cartilage on the ligamentum thyrohyoidea laterale between the cornu majus of the hyoid bone and cornu superior of the cartilago thyroidea. Cartilago triticea is located at the level of the third and fourth cervical vertebrae. In this study, we aimed to determine the prevalence, size and level of cartilago triticea calcified in individuals of different ages and genders.

Methods: Our study retrospectively carried out using the cartilago triticea images of patients who were scanned backwards from 2018 in the Radiology Department of Selçuk University Medical School. Patient images were obtained with a 256-section (128×2) dual source CT (Somatom Definition Flash, Siemens, Germany) device.

Results: Since larynx cartilage is calcified over 20 years of age, radiographic images of 100 patients over 20 years old were retrospectively examined.Of these, 34 (34%) are female and 66 (66%) are male patients. Cartilago triticea was unilaterally (24%) in 24 cases and bilateral (55%) in 55 cases.In 21 patients, cartilago triticea was absent (21%). The shape, length, width, depth and anatomical level of the examined 134 cartilago triticea were examined.There are 83 round shaped also oval (44 pieces), rod (2 pieces), hook (2 pieces), ring (1), 2 rounded (1), triangular (1) shaped ones.The level of the cartilages was found to be between C2 and C6. In 4 of the cases between C2 and C3, in the 9 level of C3, in the 14 between C3 and C4, in the 52 level of C4, in the 15 between C4 and C5, in the 30 level of C5, in the 6 between C5 and C6 were detected. Finally, it was determined that there were cartilago triticea at level of C6 in 4 individuals.

Discussion: The data obtained from this study is important in terms of the anatomical location and shape of the cartilago triticea and its prevalence in the society.

Keywords: cartilago triticea, larynx, thyrohyoid ligament, computerized tomography, anatomy

O-128

Possible teratogenic effect of paracetamol on the development of rat's lower extremity bone

Uçar İ[1], Değermenci M[1], Yılmaz S[2], Yay A[3], Yalçın B[3], Unur E[1]

[1]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey; [2]Department of Anatomy, Faculty of Medicine, Yozgat Bozok University, Yozgat, Turkey; [3]Department of Histology, Faculty of Medicine, Erciyes University, Kayseri, Turkey

Objective: Paracetamol is a pharmacological agent that is widely used all over the world and can be achieved without prescription and is the first choice of pain reliever and fever reducer in every period of pregnancy.Studies in humans and animals have shown that paracetamol has adverse effects on ossification and bone mineral density after fracture. In this study, we investigated possible bone damage that could occur on early embryonic development of paracetamol by dual staining methods and immunohistochemical analysis.

Methods: 20 pregnant rats were randomly divided into 5 groups: control group, 50 mg/kg, 125 mg/kg, 250 mg/kg and 500 mg/kg paracetamol applied groups. 1–20 days of pregnancy, serum physiologic (SF) was administered to the control group and paracetamol was dissolved in SF and applied via gavage to experimental groups at the indicated doses. Day 21, in order to examine the skeletal developments the fetuses that removed from uterus via caesarean, a double staining protocol was applied to the longbones of the posterior extremities and an immunohistochemical staining method was applied for the femur.

Results: Paracetamol applied groups showed decrease in ossification dependent on dose. In the control group; femur, tibia and fibula showed ossification at the rate of %37.73±2.74, %37.58±1.32, %37.80±0.93, in the 50 mg/kg paracetamol group at the rate of %36.86±1.18, %37.09±0.89, %38.10±0.81 and in the 500 mg/kg paracetamol group at the rate of %28.92±1.52, %29.42±0.82, %29.25±0.72 respectively. In immunohistochemical staining, It was determined that the intensity of ALP and TRAP decreased as paracetamol dose increased. There was no significant difference in ALP intensity between groups but it was found that there was significant difference between the control group and some groups in the intensity of TRAP.

Conclusion: These datas show that long-term use of paracetamol in pregnancy affects ossification negatively due to dose raise.

Keywords: paracetamol, dual staining, rat, bone development, teratogenic effect

O-129

Hypertyroidism increases TRPC1 activity in kidney tissue

Bektur E, Kaçar S, Şahintürk V

Department of Histology and Embryology, Eskişehir Osmangazi University, Faculty of Medicine, Eskişehir, Turkey

Objective: The relationship between kidney and thyroid gland function has been known for many years. Thyroid hormones (TH) show direct effects on the kidney in renal development, glomerular filtration rate, renal transport systems, sodium and water homeostasis. Both hypothyroidism and hyperthyroidism cause significant changes in renal function. Canonical transient receptor potential channel 1 (TRPC1) is transient receptor potential (TRP) channel. TRPC1 activates Ca^{+2} entry upon store depletion in various cell types. In the human nephron, TRPC1 shows expression in glomerular mesangium, proximal tubule, descending and ascending loop of Henle. There is insufficient number of studiesabout how TRPC1 channels are affected by hyperthyroidism. In this study, we aimed to investigate the relationship between oxidant/antioxidant levels and TRPC1 expression in kidney tissues of hyperthyroid rats.

Methodss: A total of 20 adult male Wistar albino rats were divided into two groups (control and hyperthyroidism). In order to establish hyperthyroidism model, 12 mg/L thyroxine hormone was added to the drinking water of rats for 4 weeks. T3, T4, TSH, total antioxidant capacity (TAC)and total oxidant levels (TOS)were measured in blood serum by ELISA at the end of the experiment. TAC and TOS were also measured by ELISA method in kidney tissue lysates. In addition, TRPC1 expressions were examined by immunohistochemistry and western blot Methodss.

Results: While TSH and TAC levels decreased in the hyperthyroidism group, T3, T4 and TOS levels increased. According to immunohistochemistry results, the control group showed weak staining in the kidney tissue; however, the TRPC1 expression was found to be intense positive in the hyperthyroidism group. Western blot analysis showed that TRPC1 expression was higher in the hyperthyroidism group than in controls in kidney tissue.

Conclusion: Hyperthyroidism increases the expression of TRPC1 in the kidney tissue and is probably caused by oxidative stress.

Keywords: hyperthyroidism, kidney, TRPC1

O-130

Regorafenib and paroxetine induces cytosolic calcium accumulation and caspase-dependent apoptosis in human breast cancer cells through TRPV1 channel activation

Avnioğlu S[1], Övey İS[2]

[1]Department of Anatomy, Alanya Alaaddin Keykubat University, School of Medicine, Antalya, Turkey; [2]Department of Physiology, Alanya Alaaddin Keykubat University, School of Medicine, Antalya, Turkey

Objective: It was reportedrecently that chemotherapeutic drugs as well as antidepressant drugs have been prescribed to patients and are being studied on various cancer cell lines and experimental animals. In the present study, we further investigated the effects of regorafenib alone and in combination with paroxetine on mcf7 cells through TRPV1 channel.

Methods: The cells were divided into 7 main groups as control, regorafenib, regorafenib+capsazepine, regorafenib+paroxetine, regorafenib+paroxetine+capsazepine, paroxetine, paroxetine+capsazepine and all groups were stimulated by TRPV1 Channel agonist which is capsaicin before or during related analysis.

Results: Results of the study demonstrated that regorafenib efficiently increased free cytosolic Ca2+ concentration and reactive oxygen species, caspase 3 and caspase 9, mitochondrial depolariation and apoptosis levels through induction of TRPV1 Channels but paroxetine has further enhanced the effectiveness of regorafenib on related analysis.

Conclusion: In conclusion, regorafenib and paroxetine could be used as a potent drug against breast cancer due to the apoptotic effect of TRPV1 channels activation.

Keywords: regorafenib, paroxetine, MCF7, apoptosis, caspase-3.

O-131

Value of electron microscopy in diagnosis of renal pathologies

Mercantepe T[1], Sevinç Ö[2], Tümkaya L[1], Lamiye Y[3], Akkuş V[2], Aktepe R[2]

[1]Department of Histology and Embryology, Faculty of Medicine, Recep Tayyip Erdoğan University, Rize, Turkey; [2]Department of Anatomy, Faculty of Medicine, Recep Tayyip Erdoğan University, Rize, Turkey; [3]Department of Physiology, Faculty of Medicine, Recep Tayyip Erdoğan University, Rize, Turkey

Objective: The ultrastructural examination using the transmission electron microscope (TEM) has been used for diagnostic purposes in the evaluation of renal pathologies for more than 40 years. Electron microscopic ultrastructural examination makes a contribution of at least 25%in the diagnosis of renal pathologies, particularly including glomerulo pathies such as nephrotic syndrome, minimal change disease, human immuno deficiency virus, fibrillary glomerulo nephritis, membrano proliferative glomerulo nephritis, and C1q. There exist various technical problems in raising this success rate in the evaluation and diagnosis of renal pathology using electron microscopic ultrastructural examination. In our study, an overview of the diagnosis of diagnostic kidney pathologies of electron microscopy is presented

Result: The most important of these problems derive from insufficient kidney biopsy dimensions. The needle gauges used in the collection of renal biopsies are particularly important since these will determine the number of glomeruli in the tissue. The glomerular number is of vital importance in diagnosis with renal biopsies: for example, while a single glomerulus is sufficient for the diagnosis of membranous glomerulo nephritis, at least seven glomeruli need to be examined fortransplant diagnoses. In addition, despite the variety of diagnosis in the evaluation of renal pathology, the diagnostic success rate in renal biopsies containing 25 glomeruli is as high as 95%. However, 18 and 19 gauge needle sare incapable of providing this amount of glomeruli. For that reason, accurate identification of glomerular diseases at diagnostic renal pathology assessment requires a holistic approach involving pathological evaluation of renal biopsy with clinical data, serological tests, electron microscopy, light microscopy, and immunofluorescence (IF). Serological and immunofluorescent findings must be analyzed together in order to increase the succes srates of diagnosing renal pathologies using the TEM.

Conclusion: The design of an ergonomic multidisciplinary renal pathology diagnosis scale will increase the success of diagnosis of renal pathologies. It will also lead to new therapeutic horizons by shedding light on the damage mechanisms of diagnosed renal pathologies.

Keywords: kidney, transmission electron microscopy, pathology

O-132

The evaluation of association between obesity and sperm morphological anomalies

Dursunoğlu D, Solmaz M, Atay Şimşek S, Ünlükal N, Erdoğan E

Department of Histology and Embryology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: In recent years, an increased prevalence of obesity and a concomitant decrease in sperm parameters indicate that obesity contributes to male infertility. However, the relation of obesity with sperm parameters, especially sperm morphological anomalies, has not been sufficiently investigated. The aim of this study was to investigate the relationship between anthropometric indices that are reliable determinants of central obesity and sperm morphological anomalies.

Methods: A total of 1219 patients who applied to Selçuk University Andrology Laboratory for standard semen analysis were included in this study. The semen parameters and anthropometric data of patients were recorded. Sperm morphologic abnormalities as head, neck and tail anomalies were evaluated in detail. Anthropometric indices were included body mass index (BMI), waist circumference (WC), hip circumference (HC), waist-to-hip ratio (WHpR) and waist-to-height ratio (WHtR).

Results: According to recognized classifications of obesity and overweight; anthropometric variables were classified as BMI <25 normal, 25–29.9 overweight and ≥ 30 obese, WC ≤90 normal, >90 increased risk, WHpR ≤0.9 normal, >0.9 increased risk, WHtR ≤0.5 normal, >0.5 increased risk. BMI, HC and WHpR were positively correlated with respectively; with head anomalies, round head and severe amorphous head; with round head, dag defect and long tail; with round head and multiple head. WC showed negative correlation with normal sperm morphology; while it was positively correlated with round head, multiple head and dag defects. WHTR showed negative correlation with normal sperm morphology; while it was positively correlated with mild amorphous head, severe amorphous head, round head, and multiple head. It was especially noticed that the round head showed a positive correlation with all anthropometric indices.

Conclusion: Obesity appears to be effective on sperm morphology. It causes sperm head anomalies, especially round and multiple head anomalies.

Keywords: sperm morphology, obesity, anthropometric index, round head anomaly

O-133

The investigation of the teratogenic effect of gabapentin on the development of rat front (upper) extremity bones and femur

Değermenci M[1], Uçar I[1], Yılmaz S[2] , Balcıoğlu O[3], Gözde O[3], Unur E[1]

[1]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey; [2]Department of Anatomy, Faculty of Medicine, Yozgat Bozok University, Yozgat, Turkey; [3]Department of Histology and Embryology, Faculty of Medicine, Erciyes University, Kayseri, Turkey

Objective: Gabapentin is an analogue of gamma-aminobutyric acid, an inhibitor neurotransmitter commonly used in the treatment of neuropathic pain and epilepsy in pregnant women. It is widely used for research purposes in laboratory animals while it is used as a medicine in domestic animals. It is not clear whether gabapentin has a damaging effect on the bone or raises the risk of fracture. However, several studies have shown bone loss in the spine and pelvis in adult epileptic patients treated with antiepileptic drugs, including gabapentin. The purpose of this study is to investigate possible bone damage that gabapentin may have on embryos by dual staining and immunohistochemical analysis.

Methods: 5 groups (n=4) were formed with control group, 10 mg/kg, 30 mg/kg, 60 mg/kg, and 120 mg/kg gabapentin groups. %0.9 NaCl was administered to the control group during gestation and gabapentin was administered via gavage to experimental groups at the indicated doses. Morphometric measurements of fetuses removed from uterus with caesarean sectionwere performed. Double staining protocol for the anterior (upper) extremity bones (humerus, radius, ulna) and immunohistochemical staining for the right femur were applied.

Results: In the control group, osseous percentages of humerus, radius and ulna were calculated as 42.13±2.51, 46.38±3.33 and 42.22±3.11, respectively, while those of high dose gabapentin group were 38.72±3.3, 43.69±3.29 and 39.03±3.3, respectively. In double skeletal staining, it was determined that ossification was reduced in gabapentin-administered groups depending on the dose. In addition, the morphometric values of fetuses were found highest in control group and lowest in the high dose (120 mg) group. In immunohistochemical staining; it was determined that the intensity of ALP and TRAP immunoreactivity decreased as gabapentin dose increased.

Conclusion: According to these results, long-term use of gabapentin in pregnancy may affect ossification and bone formation negatively.

Keywords: gabapentin, double skeletal staining, immunohistochemical staining

O-134

Effects of diverse environmental conditions on motor skills and cerebellar morphology of rats

Erçelen B[1], Ulupınar E[1,2]

[1]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey; [2]Department of Interdisciplinary Neuroscience, Institute of Health Sciences, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: In cerebellum, an important component of the motor system, development of macro and microneurons are completed in embryonic (E) and postnatal (P) periods. Aim of this study was to compare alterations in the number of cerebellar neurons and motor skills of rats raised in diverse environmental conditions.

Methods: Male Spraque-Dawley rats (n=8) were divided into 3 groups: control, unpredictable repeated stress (between E14–P45), and enriched environment groups. Motor skills were assessedat two stages; early: P27–29 and late: P42–44, by using modified string suspension and rota-rod tests. Animals were sacrificed by intracardiac perfusion, then morphometric analyzeswere done in sections obtained from the right cerebellar hemisphere and vermis.

Results: In the rotarod test, there was no significant difference between groups; whereasin modified string suspension test significant improvement was observed at late stage compared to early stage. The volume of granular layer (GL) to molecular layer (ML) was significantly higherin stress and enriched environment groups than those of control group. This difference was due to the decrease in the ML of cerebellar hemisphere, but increase in the GL of vermis region. The number of Purkinje cells per unit length in the vermis was significantly higher in enriched environment group than those of control group. On the other hand, the neuronal density in fastigial nucleus was significantly lower in the enriched environment and stress groups than those of control group. However, density of neurons in the dentate nucleus was higher in the enriched environment group than those of control and stressed groups.

Conclusion: Enhancement in the neuronal density of Purkinje cells and GL to ML ratioin animals raised in enriched environment conditions suggests that environmental conditions in both prenatal and postnatal periods play critical roles on neurons. The fastigialnucleushas extensive connections with centers related to visceral and emotional functions, such as brainstem, hypothalamus and limbic system. The dentate nucleus was positively influenced by enriched environment conditions because of its connection with fine motor movement coordinationcenters.

Keywords: cerebellum, morphometry, motor function, stress, enriched environment

O-135

Effect of acrylamide on BEAS-2B normal human lung cells: cytotoxic, oxidative apoptotic and morphometric analysis

Kaçar S, Şahintürk V[1], Kutlu HM[2]

[1]Department of Histology and Embryology, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey; [2]Department of Biology, Faculty of Science, Eskişehir Technical University, Eskişehir, Turkey

Objective: With the understanding that acrylamide, which is a synthetic industrial product, has a toxic relevance, measures wer-

estarted to be taken against its harmful effects. When acrylamide was discovered in foods in 2002 and the toxic spectrum of acrylamide was found to be wider than expected, these measures increased day by day, and even in some countries, the products having higher acrylamide content were restricted. However, the effects of acrylamide on the respiratory system have yet to be understood. In this study, we aimed at investigating the effect of acrylamide on epithelial BEAS–2B normal human lung cells by various methodss.

Methods: BEAS–2B cells were grown in sterile, ready-to-use media at 37 °C in an incubator containing 5% CO_2. Initially, the effect of acrylamide on cell viability was found by using the MTT cytotoxicity assay. Then, oxidative stress of cells was measured. Evaluation of pro-apoptotic markers Annexin V and Bax were performed by flow cytometry and immunocytochemistry, respectively. In addition, cellular morphological changes after acrylamide treatment were observed under a confocal microscope.

Results: According to MTT results, the IC50 concentration of acrylamide was 2.00 mM. Oxidative stress in acrylamide-treated cells increased in a dose-dependent manner. In acrylamide-treated cells, the amount of Annexin V-labelled apoptotic cells were higher, and early apoptotic cells were observed to progress to late apoptosis in a dose-dependent manner. Immunocytochemical examination revealed a marked increase in Bax protein staining. Furthermore, in confocal microscopy, degenerations such as cellular nuclear condensation and fragmentation were detected.

Conclusion: In this study, to our best knowledge, the effect of acrylamide on BEAS–2B human normal lung cells for the first time has been extensively analyzed. Acrylamide has shown antiproliferative activity in these cells, decreased their viability, induced apoptosis and caused morphological degenerations.

Keywords: acrylamide, MTT, confocal microscopy, annexin V, Bax, oxidative stress

O-136

Azygos lobe: rare anatomic variant

Vatansev H

Department of Chest Surgery, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: Azygos lobe is a congenital variation seen in 0.2%–1.2% of the population. In the intrauterine period, the passage of azygos vein in the lungs front and the apical or posterior segment of the right upper lobe remain behind this vein. It is usually asymptomatic and does not require treatment. It is real accessory lobe, it has not got own bronchial and bronchopulmonary segments is an interesting feature. Our aim is to recognize the azygos lobe, to make a differential diagnosis, to draw attention to accompanying pathologies, and to determine the frequency with which we are seen in our society

Methods: Patients diagnosed with azygos lobes were evaluated retrospectively for thoracic computed tomography (CT) of patients who applied to the Hospital of Meram Medical Faculty of Necmettin Erbakan University between January 2007 and January 2017. Patients were included in the study from all age groups. Recurrent tomography of the same patient has not been included in the study. In addition, the patients with azygos lob were reassessed and the most common pathology was noted.

Results: The number of patients who applied to our hospital for any reason between January 2007 and December 2007 with thoracic tomography was 117,692. A total of 87,092 thorax tomography were retrospectively evaluated, after recurrent tomography were excluded. In almost all patients, the azygos lobe was localized in the right upper lobe of the lung, whereas in only 2 patients the left azygos lobe was detected. The most common pathology associated with the Azygos lobe was pneumonia.

Conclusion: The incidence of azygos lobe, a rare anatomic variant, in thoracic tomography of patients admitted to our hospital was found to be 0.8%. In this study, we found pneumonia as the most common lung pathology with azygos lobe. It is reported in the literature that there is no increase in pneumonia coexistence. In this study, we found pneumonia as the most common lung pathology with azygos lobe. We interpreted the reason why we found high in our research, because we evaluated the tomography of the patients who complained to the hospital. The recognition of this anatomic variant is important in terms of determining the treatment technique in patients who will undergo clinical and thoracic surgery.

Keywords: azygos lobe, congenital variant, CT findings

O-137

A long and thin pathway from larynx to trachea

Vatansever A[1], Demiryürek D[2]

[1]Department of Anatomy, Faculty of Medicine, Balıkesir University, Balıkesir, Turkey; [2]Department of Anatomy, Faculty of Medicine, Hacettepe University, Ankara, Turkey.

Objective: A detailed examination of the anatomy of the larynx and trachea is important in the diagnosis and treatment of respiratory disorders and in the surgical removal of foreign bodies in the respiratory tract. In our study, it was aimed to elucidate the morphological characteristics of the distal output of the larynx starting from vocal ligament. However, the relationships between trachea length and angle of the tracheal bifurcation with gender and age were also investigated.

Methods: Computed tomographic angiograms of 127 patients were evaluated, retrospectively. All measurements were completed using Osirix-Lite version 9 software. The angle of the tracheal bifurcation was evaluated in coronal sections. Length of the trachea from the distal border of the cricoid cartilage to the tracheal bifurcation was measured in sagittal sections. Furthermore, antero-posterior and latero-lateral diameters of the cricoid cartilage and the angle of the rimaglottidis were cal-

culated in axial sections. Statistical analyses were completed using SPSS v23 software.

Results: According to our results, antero-posterior and latero-lateral diameters of the cricoid cartilage were longer in men than women. The angle of the tracheal bifurcation had negative and moderate correlation with the age.

Conclusion: Detailed identification of the distal portion of the larynx and trachea anatomy is of great importance during diagnosis and treatment protocols. However, being aware about differences in morphological properties between age and gender may provide useful contributions in determining the correct surgical procedure.

Keywords: larynx, trachea, anatomy

O-138

Evaluation of the golden ratio in nasal conchae

Petekkaya E[1], Ulusoy M[1], Bagheri H[1], Şanlı Ş[2], Ceylan SM[3], Dokur M[4]

[1]Department of Anatomy, Faculty of Medicine, Beykent University, Istanbul, Turkey; [2]Department of Radiology, Faculty of Medicine, Biruni University, Istanbul, Turkey, [3]Department of Otolaryngology, Faculty of Medicine, SANKO University, Gaziantep, Turkey; [4]Department of Emergency Medicine, Faculty of Medicine, Biruni University, Istanbul, Turkey

Objective: There are some golden ratio indexes that draw attention to the presence of mathematical ratio in human body and components of the universe. The relation between this number sequence, consecutive multiplication value of which is 1.618 for humans and called as "Fibonacci sequence" and the branching model has been proven. The nasal cavity has a special geometry which ensures the passage of airflow. Concha has a geometric importance in terms of providing turbulence to the laminar airflow passing through the cavity. In the formation zone of the turbulence, peak swirl called vortex emerges. This study aims to calculate the golden ratio of conchae in 20 adults aged 20–45 with normal anatomical nasal cavity feature through CT images.

Methods: Twenty voluntary male-female adults with no nasal pathology participated in the study. Those with septum deviation and concha hypertrophy were excluded from the study. Golden ratio calculations were conducted on the best image of conchae and meatus through CT images using Adobe Photoshop and Fibonacci spiral. The spiral intersection points on concha nasalis inferior and concha nasalismedius were determined as S0, S1, S2, S3, S4. The lengths between the points S0–S1, S1–S2, S2–S3 and S3–S4 were measured.

Results: CT images of 5 males and 15 females were used in the study. The age average of men was 27.60±10.36 and of women was 41.00±13.91. According to the results of the one sample t test which was applied to examine whether the measurements of the men were different from 1.618, it was observed that RS4 (p=0.867), RS3 / S4 (p=0.684) and LS4 (p=0.795) measurements were statistically similar to 1.618 ratio. According to the results of the one sample t test which was applied to examine whether the measurements of the women were different from 1.618, it was observed that RS3 / S4 (p=0.820) and LS3 / S4 (p=0.322) measurements were not statistically different from 1.618 ratio (p>0.05).

Conclusion: In the concha measurements of thefemales, statistically similar values to the Golden Ratio constant (1.68) were foundin the RS3 / S4 and LS3 / S4 measurements. In addition to these measurements, similar values to the Golden Ratio constant were found in the LS4 measurements of the males. The S3 / S4 region, which is presented as the region achieving the golden ratio in our study, coincides with the head of concha nasalis inferior, and its swirl within the nasal cavity seems to play a vital role in forming vortex.

Keywords: golden ratio, Fibonacci spiral, concha

O-139

Examination of the levels of structures in the thorax in multidector computerized tomography images

Bolatlı G[1], Ünver Doğan N[2], Koplay M[3], Fazlıoğulları Z[2], Karabulut AK[2]

[1]Department of Nursing, School of HealthSciences, Beykent University, Istanbul, Turkey; [2]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [3]Department of Radiology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: The thorax is the part between the neck and the abdominal cavity. Thorax anatomy differs from person to person. The levels of the anatomical structures found here and their interrelationships are very important in terms of surgical procedures. In the study, it was aimed to determine the level changes of some structures in thorax according to age and sex.

Methods: Multidector computed tomography (MDCT) images of thorax region in Selçuk University Medical Faculty Hospital PACS archives were used in the study. MDBT images of 700 people were studied in different age groups (0–9, 10–19, 20–29, 30–39, 40–49, 50–60, 60 ↑) who did not have thoracic surgery. The axial views of the CT images were converted into 3D images by VRT and MRP methods. The anatomical structures were evaluated with reference to the vertebrae on these images, and the findings were compared according to age groups and sexes.

Results: Some of thelevels of the investigations were different from the information in the classical books. It was seen that the entrance level of the aorta from the diaphragm was at Th10 level, the entrance level of superior vena cava to the right atrium was Th7 in the 0–9 age group, Th6 level in the other age groups, pulmonary trunk in the right ventricular exit level Th7 and apex of heart Th10.

Conclusion: In the classical books, the intercostal spaces are generally referenced in the levels of structures in the thorax. Most of our current surface anatomy knowledge is based on extreme cadaver studies from living human beings. Age and gender distinctions have not been made in the cases where

most of the structure sare not specified. In our study, were viewed the structures of the thorax with reference to the vertebrae. Vertebral reference is important in terms of comparing superficial and deep structures. An other advantage of the thoracic vertebral evaluation is the ease of clinical evaluation of the radiological images. Differences in levels according to age group and sex were determined. As the thoracic surgeon is needed in every age group, it is important that surgeons know these differences.

Keywords: thorax, MDCT, vertebral level

O-140

Hyolaryngeal complex anatomy and positional change investigation of multisection computed tomography images

Yılmaz NA[1], Ünver Doğan N[2], Uysal İİ[3], Güler İ[4], Seher N[4], Fazlıoğulları Z[2], Karabulut AK[2]

[1]Department of Physiotherapy and Rehabilitation, Faculty of Health Science, Necmettin Erbakan University, Konya, Turkey; [2]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [3]Department of Anatomy, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [4]Department of Radiology, Selçuk University, Faculty of Medicine, Konya, Turkey.

Objective: Hyolaryngeal complex consists of upper oesophagus forming sphincter m. associated with cricopharyngea; os hyoideum, membranous thyrohyoidea, and larynx cartilages. Depending on growth, there are changes in the size and position of this complex. In this study, we aimed to investigate the morphometric and morphological characteristics of the hyolaryngeal complex according to age and sex.

Methods: Multidector computed tomography (MDCT) imaging of 201 cases in 127 male and 74 female patients who were taken at Selçuk University Faculty of Medicine Department in 2014–2017 were investigated. The measured parameters were vertical distance between cartilago thyroidea and spina nasalis posterior, vertical distance between os hyoideum and spina nasalis posterior, horizontal distance of voice path, vertical distance of voice path, the ratio of the vertical distance of the voice path to the horizontal distance, voice path length and the vertebral level of hyoideum. Individual study was classified according to age groups.

Results: It has been determined that the all subjects change the hyolaryngeal complex position downwards. It was found that larynx in over 70 years was lowered to statistically significant ($p<0.005$) in females and males at older ages. It was found that os hyoideum shifted downwards significantly in women over 50 years of age and in men over 70 years of age ($p<0.005$). The horizontal voice path was found to be meaningful in all age groups in women but, a significant increase in males was determined only between young adults and older age groups. For the vertical sound path; The difference between the older age group and the younger age group that were present in women was significant. Analyzes according to age groups showed a maximum level of C3–C4 in os hyoideum.

Conclusion: We believe that the results obtained are of great importance in terms of being able to successfully perform intubation procedures, supporting the kinetics of the muscles in the region, accurately determining the cause of dysphagia, correct vocal cord and voice analysis, swallowing and voice disorders rehabilitation practices

Keywords: hyolaryngeal complex, larynx, MDCT, morphometri, hyoid bone

O-141

Branching variations of a popliteal artery using computed tomography angiography: a preliminary report

Gürlek Çelik N[1], Fazlıoğulları Z[1], Karabulut AK[1], Nayman A[3]

[1]School of Health Sciences, Kırşehir Ahi Evran University, Kırşehir, Turkey; [2]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [3]Department of Radiology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: Popliteal artery is a continuation of the femoral artery in the popliteal fossa. Femoral artery is named as popliteal artery after existing from distal end of canalis adductorius. Popliteal artery travel downward to the lower border of the popliteus muscle and it divides into two terminal branches called anterior and posterior tibial artery in popliteal fossa. In this study, we aimed to examine possible different branching patterns of popliteal artery by identifying the variations in the branching structure of it.

Methods: We retrospectively evaluated the popliteal artery from the CT images in the Pacs archives of Selçuk University Department of Radiology in 300 extremities of 150 individuals (age range 17–94 years; 30 females, 120 males) who did not undergo surgery (non-amputee and no cast). Patient images were obtained using a 128 × 2-section double source CT using the CT angiography protocol.

Results: Anatomical typing was performed on the examined extremities. Anterior tibial artery, which is under of tibial plateau, was considered normal branching and was termed type Ia.While the usual pattern of popliteal artery branching was observed at 287 extremities, branching variation was detected at 13 extremities. In seven of extremities non - classically were classified as type I. High level bifurcation (type II) in five of extremities and aplastic or hypoplastic (type III) pattern in one extremity were observed. No branching of type IIa2, type IIc, type IIIb, type IIIc patterns was observed in the evaluated cases.

Conclusion: In this study we determined the prevalence of the branch and variations of popliteal artery and identified the possible locations of it. These results will contribute to the evaluation of lower extremity arteriograms in the diagnosis and surgery of peripheral vascular diseases.

Keywords: computerized tomography angiography, popliteal artery, peroneal artery, tibial artery, variation

O-142

Evaluation of the relationship between a paranasal sinus anatomic variation of Onodi cell prevalance and sphenoidal sinusitis

Bekin Sarıkaya PZ

Department of Radiology, Faculty of Medicine, Harran University, Şanlıurfa, Turkey

Objective: Anatomical variations in paranasal sinus structures are frequently encountered. One of the most common variation; onodi cells, are the anatomical variation which are located at the back of the ethmoid cells and extends from the upper and posterior sides of the sphenoid sinus. Onodi cells can play a role in the development of sfenoidal sinusitis by acting on sinus aeration. We aimed to evaluate the prevalence of the onodi cell and its association with sphenoidal sinusitis in our study.

Methods: Paranasal sinus CT images were reviewed retrospectively at Şanlıurfa Balıklıgöl State Hospital between, July 2016 – October 2017 scanned a 16-slice CT scaner (Alexion, Canon Medical Systems, USA) . The frequency of Onodi cells were determined. Mucosal changes in the sphenoid sinus were classified. The incidence of sphenoidal sinusitis was assessed in all cases, in patients with onodi cell, and in cases without paranasal variations.

Results: Our study included 163 patients. The frequency of Onodi cell variation was found to be 22%. The incidence of sinusitis in all patients was 14.7%. Sinusitis was present in 13.8% of patients with Onodi cells. There was no statistically significant correlation between the presence of Onodi cell variation and the presence of sinusitis at the same side. In addition, the rate of sinusitis in patients with onodi cell variation was compared with the rate of sinusitis in patients with none of the variations affecting the formation of sphenoidal sinusitis. There was no statistically significant difference between the two groups.

Conclusion: The detailed presentation of the anatomy of the paranasal sinuses is important both for diagnosis and treatment. In our study, the frequency of Onodi cell variation has been established and no evidence has been found to suggest that this variation contributes to the formation of sinusitis.

Keywords: onodi cells, sphenoidal sinüsitis, BT

O-143

Assessment of the differences in paranasal sinuses and upper airway anatomy in the Anatolian and Cypriot populations by means of tomography

Kolsuz ME[1], Aksoy S[2], Bilecenoğlu B[3], Bozkurt P[4], Orhan K[1]

[1]Department of Dentomaxillofacial Radiology, Faculty of Dentistry, Ankara University, Ankara, Turkey; [2]Department of Dentomaxillofacial Radiology, Faculty of Dentistry, Near East University, Nicosia, Turkish Republic of Northern Cyprus; [3]Department of Basic Medical Sciences Anatomy, Faculty of Dentistry, Ankara University, Ankara, Turkey; [4]Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Ankara University, Ankara, Turkey

Objective: In the study cone-beam computed tomography (CBCT) images of 256 patients in Cypriote (53.9%) and 219 Anatolian (46.1%) populations, were evaluated for frontal sinus hyperaeration, frontal sinus hypoplasia, interfrontal sinus septa cell, Agger nasi cell, supraorbital ethmoid cell, crista galli pneumatization, concha bullosa, inferior concha bullosa, Haller cell, uncinate bulla, second concha nasalis medius, bifid concha nasalis medius, superior concha bullosa, second superior concha, maxillary sinus hypoplasia, ethmomaxillary sinus, sphenomaxillary plate, septum deviation, septum pneumatization, sphenoid sinus maxillary nerve protrusion, Onodi cell, procesus clinoideus pneumatization (anterior and posterior), pterygoid pneumatization, sphenoid internal carotid artery protrusion, tuberculum articulare pneumatization, maxillary sinus septa, sphenoid sinus septa and frontal sinus septa was.

Methods: The evaluations were made by two radiologists in two separate centers, as 'present, not available and unidentified.

Results: The difference between the populations was statistically significant for concha bullosa, supraorbital ethmoid cell, inferior concha bullosa, uncinate bulla, second concha nasalis medius, bifid middle turbinate, superior concha bullosa, second superior concha, ethmomaxillary sinus, sphenomaxillary plaque, Onodi cell, pterygoid pneumatization, tuberculum articulare pneumatization, maxillary sinus septa, frontal sinus hypereaeration, interfrontal sinus septa cells, crista galli pneumatization, Haller cell, uncinate bulla, bifid concha bullosa medius, septum deviation, maxillary sinus septa, sphenoid sinus septa and frontal sinus septa.

Conclusion: This study aimed to raise awareness among the anatomists about the variations of the above anatomical formations, which are clinically meaningful, in different populations.

Keywords: paranasal sinuses, upper airway, Anatolia, Cyprus, tomography

O-144

Examination of safe zones of facial arteries in surroundings of lower face

Yıldız Yılmaz M[1], Nas ÖF[2], Özdemir S[1], Hakyemez B[2], Coskun İ[1]

[1]Department of Anatomy, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey; [2]Department of Radiology, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey

Objective: Minimally invasive procedures for aesthetic concerns or for treatment in the facial areas have become increasingly popular due to the possibility of striking and rapid results without the need for surgical skills. Complications such as ophthalmic artery obstructions, central retinal artery occlusions, excruciating pain, and blindness have been reported in the literature after soft tissue infiltrates and other invasive procedures to the face. The aim of this study was to locate the course of the facial artery and to propose safe zones vulnerable to vascular complications following minimally invasive procedures.

Methods: We evaluated the vascular mapping of the facial artery in computed tomographic angiography. CT angiography images were processed with OsiriX application. In total, 200 facial arteries in 100 patients (50 female, 50 male) without facial pathology were examined. The patients' age ranged from 18 to 65 years. The distances between the facial artery and midline of the face, the distance between the artery and the oral commissure and the distances between the artery and lines of the nose were evaluated. The levels at which the facial artery was observed in the soft tissue were also examined with these measurements.

Results: The distance between the facial artery and the oral commissure was 15.9.±3.4 mm, and the distance between the facial artery and the midline of the face was 30.8±7.2 mm. The distance between the facial artery and ala of the nose was found to be 8.6±1.5 mm on average.

Conclusion: The facial artery plays a major role in supplying blood to the face. The facial artery and its branches continue to be important in the reconstruction of the face, and its anatomical location and variations have been studied. In conclusion, this study proposes "the safe zone" that is particularly safe for facial artery injury after invasive procedures in the oral commissure region. The anatomical relationships with the soft tissue landmarks have not been discussed much in the literature. Physicians should be aware of the potential complications relevant to the area of interest when designing the procedure for correcting and sculpting the patient's lips and lower face. These results are the values that must be taken into account in order to avoid arterial injuries in the areas to be treated.

Keywords: facial artery, safe zone, minimally invasive

O-145

Opinions of surgical branch physicians on anatomy education in residency training period

Karataş T[1], Özbağ D[2]

[1]Malatya Training and Research Hospital, Malatya, Turkey; [2]Department of Anatomy, Faculty of Medicine, İnönü University, Malatya, Turkey

Objective: The anatomy education that the surgical branch physicians receive during residency training is very important for the surgical operations that they do. For this reason, surgical branch physicians should be given enough anatomy knowledge and experience during their residency training. The purpose of this study was to assess the opinions of surgical branch physicians on anatomy education in their surgical residency period.

Methods: A questionnaire consisting of 12 questions were prepared for our study. The questionnaire was administered to 80 volunteering surgical branch physicians. The participants were asked questions about whether they received specific anatomy education about their branch during their residency training, whether they got enough anatomy experience during their residency training to perform major operations about their branches, and whether they thought anatomy rotation was necessary to gain sufficient anatomy knowledge about their branch during their residency period. The information obtained was recorded and evaluated.

Results: 80 individuals completed the questionnaire. Of the participants, 16.25% stated that they received specific anatomy education about their branch during their residency training, while 83.75% stated that they didn't; 33.75% stated that they got enough anatomy experience during their residency training to perform major operations about their branches, while 66.25% stated that they didn't; 86.25% stated that they thought anatomy rotation was necessary to gain sufficient anatomy knowledge about their branch during their residency period, while 13.75% stated that it wasn't.

Conclusion: In terms of the assessment of the questionnaire, most of the participants stated that they didn't receive specific anatomy education about their branch during their residency training, they didn't get enough anatomy experience during their residency training to perform major operations about their branches and they thought anatomy rotation was necessary to gain sufficient anatomy knowledge about their branch during their residency period.

Keywords: anatomy, education, residency training

O-146

A potential source in embalming and dissection education: health tourism

Canbolat M, Şenol D

Department of Anatomy, Faculty of Medicine, İnönü University, Malatya, Turkey

Objective: Dead body has been the most important source of information in the progress science of medicine has undergone from very old ages to the present. However, since holy meanings are attributed to the dead body by religions and cultures, the use of cadaver in education is a troublesome issue. Although technological means are very developed for anatomy education in our day, none of these can substitute for real human body. Cadaver is the most important source in anatomy education. Although the number of students per cadaver should be between 6 and 12 for qualified anatomy education, this number is 261 in our country.

Methods: Today, there is a concept which has become widespread fast and which has become a serious item of income in terms of countries: health tourism. Human beings travel to reach this good quality health service with the fact that health services have developed in different parts of the world and that the opportunities to travel have become easier to reach the qualified health service. Especially in serious health problems or as a result of the complications of the medical procedure, patients cannot always return home with cure. In case of death, especially in transfers including far distance, the transfer of the corpse without decaying is important by taking into consideration effects such as delays in transportation vehicle, technical problems and climate.

Results: We would like to share an experience with you. Upon the death of the patient who came from Pakistan to our city for liver transplant, the family demanded the hospital management to board the dead body on the plane after the body was embalmed. Hospital management delivered this demand to us. Upon this demand, by thinking that this demand would be very useful in terms of training, the laboratory was prepared by organizing the assistants and professors in the department. The embalming procedure of the dead body transferred to dissection salon was conducted and the dead body was sent to plane on time. It was a good and instructive practice for assistants with no previous experience on this issue and for our students receiving post-graduate education.

Conclusion: In case of the hospital management having information about the issue, we believe that embalming procedures can be conducted in anatomy departments so that patients who die this way can be transferred to far places. We believe that with a suitable organization, this method can be an important source of training for academics who can not have experience on embalming and dissection due to insufficient cadaver donation.

Keywords: health tourism, embalming, anatomy education

O-147

Knee anatomy research in 3 years: who, how, about what?

İmre E[1], Yılmaz A[2]

[1]Ministry of Health, Afşin State Hospital, Kahramanmaraş, Turkey; [2]Department of Anatomy, Faculty of Medicine, Trakya University, Edirne, Turkey

Objective: Anatomy forms the basis of all clinical branches, especially surgical branches. Therefore, anatomical information is being investigated by other branches besides anatomy itself. In this study, we aimed to reveal which branches, which subheadings, what kind and how many publications were made by examining the studies on knee anatomy in last 3 years.

Methods: Keyword "knee anatomy" was searched in PubMed, in 2015, 2016 and 2017. All results were examined and publications related to knee anatomy were selected. The selected publications were examined and whether the subjects of each year, the branch of the publishing physician, the type of investigation.

Results: It was determined that 49 studies conducted in 2015 were related to the knee anatomy. Of these, 13 were radiologic, 21 were cadavers, 5 were patients and 10 were not. According to the expertise of the persons who carried out the study, distribution was composed of 37 orthopedics and traumatology, 7 anatomy, 2 radiology, 2 sports medicine and 1 anesthesiology.There were 17 bone structures (12 distal femur), 14 extra articular soft tissues (5 ALL), 10 intra articular soft tissues (5 ACL), 8 neurovascular structures. 65 studies related to knee anatomy in 2016. 31 of the studies cadaver, 21 radiology, 10 review 3 clinical measurement study. 40 of them were investigated by orthopedic, 12 were anatomy, 1 forensic medicine, 7 radiology, 1 anesthesiology, 2 physical medicine, 1 sports medicine and 1 plastic surgery specialists, Twenty-five of the studies were examining the entire series of bone (19 distal femur), 23 extra clavicular soft tissue (16 ALL), 4 intra-articular soft tissue (2 ACL), 11 neurovascular structures and 2 studies. 85 studies in 2017 concerned knee anatomy. 33 of them were cadaver, 15 were compiled, 26 were radiologic, 1 was 3d model, 2 case presentation, 5 fetus, 2 clinic, 1 education. 58 of them were orthopedic, 8 of them were radiology, 14 were anatomy, 2 were anesthesia, 1 was ftr, 1 was physiology, 1 was sports medicine specialists. 19 study was about bones (8 distal femurs), 18 were intra-articular tissues (10 ACLs), 39 were extra articular tissues (12 ALL), 6 were neurovascular structures, 2 were all knee anatomy and 1 was about education.

Conclusion: Our study showed that knee anatomy is a topic that attracts attention of clinical branches especially orthopedics and traumatology. Cadaver studies seem to be the most common type of study.

Keywords: knee, lower extremity, ligament

O-148

The functional anatomy of the claustrum

Zeybek A[1], Özkan M[2]

[1]Department of Anatomy , Faculty of Medicine, Tekirdağ Namık Kemal University, Tekirdağ, Turkey; [2]Department of Anatomy, Faculty of Medicine, Marmara University, Istanbul, Turkey

Objective: The claustrum is a neuron group seperated from the lowest layer of cerebral cortex by the extreme capsule, which pointed out by Vicq d'Azyr in 1789. Although the morphological and neurochemical characteristics of this structure, which has been observed in many different species of living organisms, have been revealed, research on its functional properties is still under way. Is it a layer of the cerebral cortex or a subcortical structure? Do subsections exist? What about afferent and efferent connections and functions? How does the claustrum affect the cortical functions as a relay structure like the high order thalamic nuclei? Does optogenetic, one of the new research Methodss, support previous hypotheses? Is there any difference between the information obtained from other animals and the human claustrum? How is the relationship between claustrum and various neurological disorders (autism, schizophrenia, epilepsy and Parkinson's diseases)?

Methods: Knowledge of the functional anatomy of the claustrum is important for clinical and experimental studies and has been reviewed in the literature using the words, "claustrum, optogenetic, connection and function".

Conclusion: Claustrum plays a role in sensory integration due to reciprocal cortical connections, as well as in the acquisition of motor skills and in the regulation of conceptual memory.

Keywords: claustrum, anatomy, function, clinical

O-149

The comparision of kinesio taping, dry needling and mobilization techniques in patients with myofascial pain syndrome

Toy S[1], Kızılay F[2], Beykumül A[3], Çiftçi R[1], Özbağ D[1]

[1]Department of Anatomy, İnönü University, Faculty of Medicine, Malatya, Turkey; [2]Department of Physical Education and Sport, İnönü University, Institute of Health Sciences, Malatya, Turkey; [3]Department of Physical Medicine and Rehabilitation, İnönü University, Turgut Özal Medical Center, Malatya, Turkey

Objective: Myofascial pain syndrome (MAS) is characterized by the presence of pain and tenderness in a muscle group or a single muscle, taut bands in the muscle, and the presence of triggers with reflected pain; muscle spasms, tenderness, stiffness, limitation of movement, weakness, and rarely autonomic dysfunction. The trigger point is an important finding of MAS. A classic trigger point is localized areas of focal sensitivity, which are located in a palpable taut band, leading to regional pain and local tilt response. In MAS, treatment protocols are planned for pain relief and tenderness relief at trigger points.The aim of this study is to compare the effects of kinesio taping, dry needling and mobilization techniques on pain, daily life activity, functional status, depression and anxiety status in patients with MAS.

Methods: Sixty volunteers aged 18–65 years who were diagnosed with MAS according to the criteria determined by Travel and Simons were divided into kinesio taping (n=20), dry needling (n=20), and mobilization (n=20). Conventional physical therapy agents (hotpack, ultrason, tens) were applied to each group of patients. In addition, trigger needle pricking for the dry needle group, trigger point tapping for the kinesio taping band, and cervical mobilization techniques for the mobilization group were performed for three weeks (6 sessions), two days per week. Demographic data of the patients were recorded. Visuel analog scale (VAS), palpable muscle spasm rating (PKSD), neck pain and disability score (BADS), Nottingham health profile (NHP), Beck depression (BDI) and Beck anxiety scales (BAI) were evaluated and recorded before and after the treatment.

Results: There were no statistically significant differences between age and body mass index parameters of the patients. In all treatment groups, VAS resting-motion-night, BAD, NHP, Beck depression-anxiety. and PKSD parameters were statistically sig nificant differences between the pretreatment and posttreatment comparisons ($p<0.05$).There was no statistically significant difference between the groups in all parameters in the intergroup comparisons ($p>0.05$).

Conclusion: We think that the three treatment modalities in MAS are not superior to each other and that selection should be made according to the clinical condition of the patient, which would benefit from being added to the treatment protocol.

Keywords: myofascial pain syndrome, kinesio taping, dry needling, mobilization

O-150

The effect of anatomic localization of vermiform appendix on acute appendicitis prognosis

Karataş T[1], Özbağ D[2]

[1]Malatya Training and Research Hospital, Malatya, Turkey; [2]Department of Anatomy, Faculty of Medicine, İnönü University, Malatya, Turkey

Objective: Appendix vermiformis is found in various anatomical localizations. Acute appendicitis is inflammation of appendix vermiformis. Appendicitis manifestation is classified as acute and complicated appendicitis (gangrenous, perforated andplastronized). In complicated appendicitis, clinical manifestation is more severe and the prognosis is worse. The aim of this study is to research the effect of anatomic localization of Appendix Vermiformis on acute appendicitis prognosis.

Methods: The files of patients who were operated in Malatya Training and Research Hospital General Surgery Clinic with a diagnosis of appendicitis between 2015 and 2018 were reviewed. Gender, age, operation findings and postoperative complications were recorded. The manifestations of appendicitis were compared according to the localization of appendix vermiforis and the results were assessed.

Results: A total of 471 files were reviewed. 61.14% of the patients were male, while 38.86% were female. Average age of the patients was 32.21. While Appendix vermiformis was in the retrocaecal localization in 13.2% of patients, it was in the other localizations in 86.8%. Acute appendicitis was found in 58.1% of the appendix localized in the retrocaecal, while perforated appendicitis was found in 38.7% and plastronized appendicitis was found in 1.6%. Acute appendicitis was found in 80.9% of the other appendix localizations, while perforated appendicitis was found in 12.7%, plastronized appendicitis was found in 2.2% and gangrenous appendicitis was found in 1.2%. While postoperative complications were found in 8% of the retrocaecal appendix, they were found in 2.2% of the other appendix localizations.

Conclusion: In our study, complicated appendicitis and postoperative complication rates were found to be higher in retrocaecal appendix. Thus, it was found that retrocaecal appendix negatively influenced appendicitis prognosis.

Keywords: appendix vermiformis, acute appendicitis, retrocaecal appendix

O-151

Restoration of detrited or damaged pieces of the dry human bone collection of the department of anatomy by synthetic materials

Yılmaz MT[1], Çiçekcibaşı AE[1], Şeker M[1], Akın D[1], Kabakçı ADA[1], Özen KE[2], Şahin G[1], Öztekin HC[1]

[1]Department of Anatomy, Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [2]Department of Anatomy, Faculty of Medicine, Izmir Katip Çelebi University, Izmir, Turkey

Objective: Aim of this research is to bring the dry bones which can be used due to physical damage or detrition, touse. As far as we investigated, a useful and succesful method is not present. We believe experience and information produced from this project would be beneficial in this field of research.

Methods: Detrited and physically damaged dry bone pieces were present in the dry human bone collection of Department of Anatomy, Faculty of Medicine, Necmettin Erbakan University. These dry bone pieces are restored in accordance with the original anatomical structure by using light curecement, self curecement, flowable composites, cyano acrylic glue, policarbon glue and rock wool.

Results: Restoration in the dry bone group in which the combination of rock wool and cyano acrylic glue used, looks in accordance with the original anatomical structure. This restoration Methods was preferable than the others in terms of feasibility and drying time.

Conclusion: Experience and information obtained from this project would contribute the literature. In addition this is a preliminary study for restoring dry human bones.

Keywords: restoring dry human bones, dry bone, cement, glue, rockwool

O-152

Anthropometric measurements for the design of seating tools in the amphitheatre and conference rooms

Kayan G[1], Büyükmumcu M[2], Durgun B[3]

[1]Department of Anatomy, Faculty of Medicine, Mersin University, Mersin, Turkey; [2]Department of Anatomy, Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [3]Department of Anatomy, Faculty of Medicine, Çukurova University, Adana, Turkey

Objective: The purpose of the study was to determine necessary anthropometric data in order to design comfortable and aesthetic seats which are appropriate for human body for theatres and auditoriums. Long sitting position is unnatural so causes overloading especially at spine and lumbar region. An effective way of the protecting sitting posture is create a central and healthy motion cycle which is harmonious with human body. So theatres and auditoriums' seats must design to ensure posture dynamics.

Methods: In this study, meausurements were obtained from 100 healthy volunteer (50 male, 50 female) from various occupational groupaged between 18–50 years.

Results: Hand length and waist circumference values were found higher among male with back pain than that of without back pain. When we focused on all population in terms of gender; all of the values statistically significantly higher among men than women except shoulder height and elbow height in 25–33 years group ($p<0.05$). Interestingly, just forearm and hand length values statistically significant in 44–50 years grups by contrast with other years grups. Our study group mostly comprise health sector employees and when we divide the minto two groups in terms of their working position; measurement values of group 2 (which comprise health care, security and information desk workers) were found higher than group 1 (which comprise doctors and nurses) for all statistically significant parameters ($p<0.05$).

Conclusion: In conclusion, since our study is the first study about antropometric measurements for designing comfortable and aesthetic seats for theatres and auditoriums, it's believed that our results make contribution to ensuring sitting comfort posture, composing central and healthy motion cycle.

Keywords: anthropometry, seats, theatre, auditorium

O-153

Medullary cavity's topometry on proximal femur for intramedullary nailing

İsmailoğlu P[1], Soyluoğlu Aİ[2], Bayramoğlu A[1], Özsoy H[3]

[1]Department of Anatomy, Acıbadem Mehmet Ali Aydınlar University, Istanbul, Turkey; [2]Department of Anatomy, Cerrahpaşa Faculty of Medicine, Istanbul University-Cerrahpaşa, Istanbul, Turkey; [3]Orthopedics and Traumatology, Memorial Ankara Hospital, Ankara, Turkey

Objective: Intramedullary femoral nailing is a widely used technique in proximal and mid-shaft femoral fractures. In spite of the importance of correct entry point, the published data is still unclear about anatomical landmarks. We sought to determine the ideal entry point for antegrade femoral nailing.

Metod: Sectra IDS7 multi-touch screen visualization table, a commercially available 3D reconstructor of CT&MR images, was used to reconstruct CT images in 3D. 51 low abdomen and pelvis CT images were investigated. The paired femors from 51 CT images were used. So, right and left 102 femurs' proximal regions were visualized. The borders of femoral medullary cavity were drawn on the proximal femur picture. The center of medullary cavity were shown. The proximal femur was divided into 16 regions on the upper view. Then the center and trochanteric fossa was identifid according to the regions. The greater trochanteric tip was also evaluated if it covered the nail insertion area.

Results: The projection of medullary cavity's center was 31.4% more anteromedial according to trochanteric fossa for right side. For left side it was 39.2% more anteromedial to trochanteric fossa. There weren't any differences between genders about trochanteric fossa or the projection of center. The center was covered in just one femur by the trochanteric tip for both sides. The covering ratio for right side was 66.7% by the tip of the greater trochanter if trochanteric fossa entry point was preferred. The similar ratio for the left side was 88.2%.

Conclusion: The best insertion point for antegrade femoral nailing is anteromedial side of trochanteric fossa. The greater trochanteric tip doesn't cover the projection of medullary cavity's center. Therefore, the projection of medullary cavity's center is a safe region. By using 3D imaging techniques before surgery is the best way to find ideal entry point localisation.

Keywords: intramedullar, femoral fractures, computed tomography, orthopedic surgery

O-154

Relationship between forearm and hand anthropometric measurements and hand grip strength

Kasar ZS, İpek ED, Başaloğlu H

Department of Anatomy, Faculty of Medicine, Aydın Adnan Menderes University, Aydın, Turkey

Objective: Hand grip strength (HGS) is defined as the maximum gripping force of the fingers. HGS is measured with a dynamometer in clinics. The purpose of this study is to assess the relationship between HGS and the forearm, hand anthropometric measurements and to determine the difference between male and female sex.

Methods: Our study consisted of 142 healthy volunteers, aged 18–24, 75 men and 67 women in total. The dominant hands of the volunteers were photographed. Hand anthropometric measurements; wirst width (WW), hand lenght (HL), palm length (PL), hand width (HW), maximum hand width (MHW), hand thickness (HT), maximum hand thickness (MHT), metacarpal angle (MCA) Imagej 1.45 program was used on the photos. The circumference of the middle of the forearm (FMC) and the wrist circumference (WC) were measured using a lenght meter. HGS was measured by Jamar hand dynamometer.

Results: According to the results of the Pearson correlation test, the HGS was weak in men (r=0.48), HL (r=0.43), PL (r=0.41), WW (r=0.38), and MHW (r=0.49) relationship found. HGS was found moderate positive correlation with WC (r=0.58), WW (r=0.52) and HT (r=0.6). HGS was not associated with MHW (r=0.18), and MCA (r=0.13). In women, HGS was correlated with FMC (r=0.71), WC (r=0.72), WW (r=0.7), MHW (r=0.75) high degree of positive correlation however, was weak correlated with EU (r=0.37), EK (r=0.39) and EG (r=0.38) measurements. There was no correlation between HGS and MCA (r=0.04).

Conclucion: According to our study, HGS are different between sexes and different anatomical regions of the hand are effective among the sexes in the results of HGS. A high degree of positive correlation with MHT and HGS in females shows that thumb motions are more effective than males.

Keywords: grip strength, anthropometric measurements

O-155

Some head anthropometric measurements in children with cerebral palsy

Akca Z, Uzun A

Department of Anatomy, Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey

Objective: Cerebral palsy is a neurodevelopmental disorder resulting from non-progressive injury of immature brain tissue.Children with cerebral palsy are generally undernourished and growth retarded than normal children. Head anthropometric measurements are important to evaluate of growth and development for children with cerebral palsy. The purposes of this study were to compare some head anthropometric measurements in healthy and cerebral palsy children, produce standard values and discuss with the literature.

Methods: Anthropometric measurements of the head were done depending on the reference points described in the literature while the head was in Frankfurt plane. The head anthropometric parameters were measured head cicumference, head width, head length, craniofacial height, forehead width, calvaria height etc. Anthropometric measurements were taken from 36 subjects (20 cerebral palsy and 16 healthy) between 2-9 years old.

Results: According to the results, the average values of cerebral palsy group were head circumference 472.77±20.09 mm; head width 137.22±10.08 mm; head length 158.02±7.36; craniofacial height 194.11±18.65 mm; forehead width 96.77±11.55 mm; calvaria height 26.33±12.08 mm for boys. Control group values were 514.88±17.30 mm, 146.55±7.73 mm, 164.06±7.56 mm, 199.11± 15.75 mm, 105.55±12.05 mm and 30.66±8.51 mm for boys, respectively. This parameters were 461.72±30.45 mm, 129.36± 11.48 mm, 150.63±12.82 mm, 187.72±19.33 mm, 91.90±13.14 mm and 24.72±7.24 mm for girls with cerebral palsy. Control group values were 506.42±12.20 mm, 142.28± 5.12 and 161.71± 6.49 mm, 194.02±17.66 mm, 98.01±11.59 mm and 31.85±7.19 mm for girls respectively. The mean values of measurements were usually lower in children with cerebral palsy than healthy children.

Conclusion: In conclusion, that the obtained average values will be important for monitoring growth and development of children. So, these anthropometric data obtained from cerebral palsy and healthy children may be useful for pediatricians in the early detection and early starting of treatment in neurodevelopmental disorders.

Keywords: anthropometry, children, head, cerebral palsy

O-156

Comparison of foot base pressure values with baropodometer device in obese and non-obese individuals

Yıldız Z[1], Yılmaz MT[2], Saygın D[2]

[1]Department of Therapy and Rehabilitation, Isparta University of Applied Sciences, Vocational School Uluborlu, Isparta, Turkey; [2]Department of Anatomy, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: There are few studies about the impact of obesity on structural and functional performance of the feet. In these studies, obesity has been reported to increase the plantar pressure.

Metod: In this study, the effect of obesity on static stance, plantar pressure distribution was examined. 32.28±10.72 (Min: 18, Max: 59), 39 male (43.3%) and 51 women (56.7%), total 90 healthy individuals participated in the study. In the study, indi-

viduals with musculoskeletal disorder, neurological and orthopaedic disorders, lower extremity lesions and continuous drug use have not been included in our study. It is also divided into 5 age groups under the age of 20, 20–29, 30–39, 40–49 and 50–59. Weak according to body mass index (BMI) (<18.5), we have examined the normal (18.5–24.9), overweight (25–29.9), obese class (30–34.9), obese class II (35–39.9), obese class III (>40), divided into 6 groups. The plantar region was evaluated in 3 groups, anterior, middle, posterior, and each group was divided into 6 areas of medial and lateral. Peak pressure (PP) point is defined as the maximum pressure in the plantar region.

Results: As a result of the study, the average BMI of all participating individuals is 28.02±5.87 kg/m^2. The mean peak pressure value was found in 1099.46±245.12 g/cm^2. In all individuals, the measured values in the rear foot area have increased according to the measured values in the anterior and middle foot area. In female individuals, the pressure of the medial region of the middle foot on both the right and left sides is larger than that of male subjects. The pressure measurements of the plantar region were not statistically significant according to gender and age groups. Among the BMS, there was a significant correlation between the total surface area of both feet, peak pressure point, the middle lateral and medial area of the left foot, the middle laterally of the right foot, and the posterior medial area of the left and right foot.

Conclusion: It is thought that the data in the study will contribute to the study of physical therapy, footwear selection and literature in the field of obesity.

Keywords: baropodometer, BMI, obesity, plantar pressure distribution, static posture

O-157

Head anthropometry and intelligence

Canbolat M, Şenol D, Altınoğlu M, Çevirgen F, Özbağ D

Department of Anatomy, Faculty of Medicine, İnönü University, Malatya, Turkey

Objective: Questions about intelligence have always occupied scientists' minds and many researches have been conducted to find answers to these questions. Although inheritance and environmental factors together are influential in the development of intelligence, the belief that intelligent people are biologically and physically different is common. There are a great number of studies which aim to find the association between cognitive abilities and anthropometric measurements. The purpose of this study is to research whether there is association between anthropometric measurements taken from the head regions of university students and their IQ values.

Methods: Our study was conducted with 84 right-handed male students studying at İnönü University. The students were first given R.B. Cattell Culture Free Intelligence Test. After their ages, heights and weights were recorded and head circumference, bigonial breadth, morphological facial height, head height, head breadth, frontal breadth, maximum head diameter, nose to back of head, distance between gnathion-trachion and skull height measurements from the head region were taken. IBM SPSS Statistics 22.0 program was used for the statistical analysis of the results. p<0.05 was considered as statistically significant.

Results: Median value of the ages of students who participated in our study was 22 (19–27). Median value of the results obtained R.B. Cattell culture free intelligence test was 104 (68–162). Negative correlation was found between IQ and morphological facial height (r: -.322, p: 0.015), frontal breadth (r: -307, p: 0.02) and maximum head diameter (r: -.342, p: 0.009). Positive correlation was found between IQ and head breadth (r: .287, p: 0.03) and skull height (r: .269, p: 0.043). No correlation was found between head circumference and IQ (r: .127, p: 0.348)

Conclusion: A great number of studies conducted have found positive correlation between head circumference and intelligence. It has been claimed that a large head will contain a large brain and a large brain will include more neurons and synaptic joints. However, there are also studies which have not found a correlation between the two. In our study, we could not find an association between head circumference and IQ.

Keywords: head anthropometry, intelligence, R. B. Cattell intelligence test

O-158

Optical coherence tomography analysis of macular retinal and choroidal layers in healthy eyes

Şensoy NM[1], Fazlıoğulları Z[1], Turgut ÖB[2], Karabulut AK[1], Gedik Ş[2], Ünver Doğan N[1]

[1]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [2]Department of Ophthalmology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: Choroid is located in the vascular layer of eyeball. At the back of the sclera. Retina is called the light sensitive bulbus oculi's tunica nervosa bulbi layer. Retina consist of ten layers from choroidea to corpus vitreum. The thickness of retinal layers varies. This study healty Turkish people retinal nerve fiber layer, ganglion cell layer +, ganglion cell layer++, total retinal layer and choroidal layer thicknesses determined with Optical Coherence Tomography and aimed to obtain useful data for the treatment of ocular diseases.

Methods: This study was performed on 41 individuals of Selçuk University Department of Ophthalmology (21 male, 20 female; 20 right, 21 left; between 18 and 38 years 14 individuals, between 39 and 59 years 13 individuals, over 60 years of age 14 individuals). RNFL, GCL+,GCL++, choroidea and total retina thicknesses made according to early treatment diabetic retinopathy study.

Results: As a result of this study, significant difference was found between the age groups and choroidal layer thicknesses.

The thickest choroidal layer is seen at the 18–38 age group (18–38 age choroidal layer: 283.560, 39–59 age choroidal layer: 219.686, 60+age choroidal layer:190.603). There was no significant difference in GCL+,GCL++, RNFL and total retinal layers according to age groups. Although right choroidal layer thickest than left choroidal layer, RNFL, GCL+,GCL++ and total retinal layers left layers thickest than right layers. (Right choroidal layer:246.212, left choroidal layer:208.628). There was no significant difference between the left and right layers. There was significant difference male and female between GCL+ and total retinal layer thicknesses. Male retinal layer thicknesses thickest than female thicknesses (Male Retinal Layer: 291.950, Female Retinal Layer: 266.946).

Conclusion: As a result of made with Optical coherence tomography, it is a reference value for ocular diseases.

Keywords: retina, choroidea, optical coherence tomography, ganglion cell layer

O-159

The determination of gender and body mass index from hand and wrist measurements with artificial neural networks

Demir M[1], Geçkil E[2], Atay E[3], Doğaner A[4], Yoldaş A[1], Çiçek M[1], Ertekin T[3]

[1]Department of Anatomy, Faculty of Medicine, Kahramanmaras Sütçü İmam University, Kahramanmaraş, Turkey; [2]Afşin School of Health, Kahramanmaraş Sütçü Imam University, Kahramanmaraş, Turkey; [3]Department of Anatomy, Faculty of Medicine, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey; [4]Department of Biostatistics and Medical Informatics, Faculty of Medicine, Kahramanmaraş Sütçü İmam University, Kahramanmaraş, Turkey

Objective: The gender and body mass index (BMI) is an important determinant of cases in forensic medicine. The aim of our study is to determine the BMI and gender from the morphometric measurements made on the hand and wrist in the Turkish population.

Methods: A total of 317 volunteers, 107 males and 210 females with a mean age of 34.17±11.76 years, participated in the research.In addition, the participants' height and weight were measured and BMIs were calculated. In the BMI classification, 4 groups were formed using criteria of World Health Organization as weak, normal, over weight and obese. 3 parameter (circumference, depth and length) for the right and left wrists, 2 parameter (length and width) for the palm and 5 parameter(head, point, middle, ring and sparrow finger lengths) for the fingers measured from volunteers. Digital calipers with a sensitivity of 0.01 and tape measure were used in the measurements.The relation of hand and wrist measurements with gender and BMI was determined using SPSS 22 statistical program and artificial neural network models.

Results: In this study, 107 (33.75%) males and 210 (66.25%) females participated as volunteers.The most reliable variables in gender determination of hand measurements were left palm width, right palm width, right palm length, left ring finger length, and left thumb length respectively. Statistically, it was observed that hand and wrist measurements had a 91.5% correctness in predicting gender.In the determination of BMI, the most reliable variables were left wrist circumference, right wrist length, left thumb length, and left wrist length, respectively. We observed that the measurement results had a statistically significant correctness of 56.3% without estimating the BMI.

Conclusion: In gender determination, hand and wrist measurements can be used when conditions require it. On the contrary, it is predicted that the measurement results produce successful results in estimating the BMI andmay be useful in increasing the BMI estimation performance by adding new parameters. The artificial neural network model was found to be successful in predicting gender and BMI.

Keywords: gender determination, BMI, hand, wrist, measurement, artificial neural network model

O-160

Methodology of preparation 3D skull model for educational purposes in Selçuk University Veterinary Faculty

Bahar S[1], Turgut N[1], Aydoğdu S[1], Özdemir V[2], Karaoğlan İ[3], Nayman A[4], Karaoğlu N[5]

[1]Department of Anatomy, Faculty of Veterinary Medicine, Selçuk University, Konya, Turkey; [2]Department of Anatomy, Faculty of Veterinary Medicine, Afyon Kocatepe University, Afyonkarahisar, Turkey; [3]Department of Industrial Engineering, Faculty of Engineering and Natural Sciences, Konya Technical University, Konya, Turkey; [4]Department of Radiology, Faculty of Medicine, Selçuk University, Konya, Turkey; [5]Department of Family Medicine, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: The skull has a complex structure which is formed by overlapping and side by side immovable bone layers. Current anatomy education system uses skulls obtained via maceration. These skulls cannot be used effectively in education because the borders of bones are not clear and can't be separated from each other. The aim of this presentation is to introduce the preparatory stages of the 3D digital skull model developed to cope with the mentioned deficiency.

Methods: In this study one cattle skull cadaver was subjected to maceration for one month. The first axial serial section (0.5 mm) was imaged on the rostro-caudal direction with the help of multislice spiral CT. Later, the study material was carried to the laboratory and subjected to disarticulation (except hyoid bone). By this way, bones of the skeleton were separated from each other preserving their morphological structure and were protected in the water. Then, 2. CT images of the bones received in radiology unit. The first CT image was transferred to the modeling program (MIMICS 20.0) and one-piece 3D model of the skull skeleton was created. On the other hand, 3D models of skeleton parts were created separately using 2. CT images and recorded on a second working page and were

replaced in the position of first model. This completed 3D skull skeleton was export 3D PDF format to use in education.

Results: The digital product obtained by; maceration, 1. CT imaging, disarticulation, 2. CT imaging, the creation of bone models by transferring the CT images to the modeling software, combining model parts, taking digital model output; was observed to be capable of affording all the needs in this field.

Conclusion: For these reasons this methodslogy can be easily used in the preparation of similar educational materials of different species and regions of body.

Keywords: 3D digital skull model, maceration, modeling software

O-161

Analysis of the corellation between facit fatigue scale scores and thoracal measurements in patients with chronic renal failure patients; a preliminary study results

Ulutaş NS[1], Çiftci R[2], Özbağ D[3], Köse E[3]

[1]Department of Audiology, Faculty of Health Sciences, İnonü University, Malatya, Turkey; [2]Department of Physical Medicine and Rehabilitation, Faculty of Medicine, İnonü University, Malatya, Turkey; [3]Department of Anatomy, Faculty of Medicine, İnonü University, Malatya, Turkey

Objective: Chronic renal failure (CRF) is a clinical condition that can cause changes effecting the thorax cavity, such as pleural fluid elevation, pulmonary calcification, and pulmonary gas exchange disorders. This situation decreases the quality of life of the patients and increases the mortality. This study, was aimed to examine the relationship between FACIT fatigue scale and thoracic measurements in CRF patients and normal individuals,

Methods: 40 volunteers, 20 of whom were CRF patients that treated in the Inönü University Turgut Ozal Medical Center hemodialysis department and 20 healthy adults, were included the study. FACIT fatigue scale consisting of 14 items was applied to participants. Chest circumference, thorax width and thorax depth were measured using an anthropometric set. Body mass index (BMI) was calculated from height and weight and was taken into consideration in thorax circumference measurement analyzes.

Results: Each group consists 10 males and 10 females. The mean age was 48.3 (±15.2) in the patient group and 38.3 (±14.25) in the control group. 26.20 (±4.83) in the BMI group and 24.45 (±3.44) in the control group. There was no statistically significant difference between the patient and control groups in terms of BMI. FACIT scores in the patient group were 14.53 in the average of 25.27 control groups and the difference between them was statistically significant. Mean thoracic circumference, thoracic width and thorax depth measurements were found as 101.36 (±8.4), 24.7 (±2.7), 23.62 (±2.6) respectively in the patient group. In the control group, these values were 96.5 (±7.5), 28.4 (±2.66), 21.8 (±1.99) respectively. The difference between the thoracic circumference and thorax depth measurements was not statistically significant between the patient group and the control group, but the difference between the thorax width measurements was statistically significant. When the correlation between FACIT scores and thorax measurements was examined, there was a positive correlation between thoracic circumference, thorax depth and BMI and FACIT scores, and a weak correlation between thoracic width and negative

Conclusion: FACIT scores show significant differences in normal group and patient group in chronic diseases such as CRF. Thorax measurements are different in patients with CRF and normals.

Keywords: thorax, FACIT, anatomy, chronic renal failure

O-162

The effect of necessary surgical invervention in the anatomical regionof the acute nondisplaced scaphoid fractures applied at Konya Necmettin Erbakan University Meram Medical Faculty between 2012–2018

Atılgan N, Memik R

Department of Orthopedics and Traumatology, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: Scaphoid bone is the most common injured wrist bone. In this study, it was aimed to evaluate the effect of the anatomic location of the acute nondisplaced scaphoid fracture is required to surgical intervention.

Methods: Patients with nondisplaced scaphoid fractures who were referred to the Emergency and Orthopedics and Traumatology outpatient clinics of Meram Medical Faculty of Konya Necmettin Erbakan University between 2012–2017 were included in the study. The study was performed retrospectively. Fractures diagnosed delayed when patients were selected were excluded from the study. Three-way wrist graphy was obtained after physical examination and fracture diagnosis was confirmed by withdrawal of MR, which can not be diagnosed. The patient was diagnosed with Colles plaster at 20 degrees extensor and was called to the controls 3 and 6 weeks later, followed by 6 weeks with thumb-assisted atele, followed by 3 weeks wrist splint. The statistical analysis was made in SPSS 21.0 package program and the level of significance was determined as $p<0.05$.

Results: The mean age of the 48 patients participating in the study was 29.4 (18–51), 16 were female (33.3%), and 32 were male (66.7%). Thirty-seven (77.1%) of the patients were found to be fractured on the dominant side and 11 (22.9%) on the nondominant side. 26 (54.2%) distal tip fractures, 13 (27.1%) scaphoid waist fractures, and 9 (18.8%) proximal pole fractures were found according to the frequency of the anatomical location of the fractures. During the follow-up, 1 proximal pole fracture was detected and surgery was performed. After the follow-up, control graphs and physical examination revealed that

55.6% (5 fractures) of proximal pol fractures, 15.4% (2 fractures) of scaphoid waist fractures and 7.7% (2 fractures) of distal fractures were not detected and treated surgically. Proximal pole fractures required surgical intervention in a statistically significant manner ($p<0.01$) in comparison with both scaphoid waist and distal tip fractures. Gender, age and fracture dominant or nondominant were not significantly associated with the need for surgical intervention ($p>0.05$).

Conclusion: In this study, it was thought that it would be useful to evaluate the anatomic location of the fracture in relation to the blood flow in scaphoid bone fractures, and to evaluate the proximal fractures in detail from the surgical point of view.

Keywords: scaphoid bone, fracture, anatomy, orthopedics, traumatology

O-163

Talus morphometry and morphological features

Kasar H[1], Fazlıoğulları Z[1], Dursun FN[2], Ünver Doğan N[1], Karabulut AK[1]

[1]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [2]Department of Anatomy, Faculty of Medicine, KTO Karatay University, Konya, Turkey

Objective: Talus is the highest of the tarsal bones of the foot and is the keybone of the foot arch. Talus supports body weight transmitted via tibia and distributes it to other tarsal bones. For this reason, it is thought that it may be effective in many deformities encountered in the foot. In this study, morphometric dimensions, angular features and facies articular calcanea types of talus were investigated. To identify the anatomical variations that can be seen in the talus, to identify the types of joint faces and the orientation differences between them, to define the morphometric features of the talus.

Methods: The study was carried out on 50 dry talus (30 right and 20 left) of unknown sex in anatomy laboratories of Selçuk University and KTO Karatay University Faculty of Medicine. In the morphometric measurements, total talus length, width and height, height of caput tali, length of collum tali, length and width of trochlea tali, the length and width of the art. subtalaris were measured using digital calipers. In addition, vertical and medial neck angles were measured and facies articular calcanea types were determined

Results: The mean talus length in the examined dry materials was found to be 55.47 (47.53–65.30) mm; width 41.56 (34.49–48.96) mm; height 31.70 (25.34–38.63) mm. The mean vertical neck angle was calculated as 95.08° (88 ° -103°), medial neck angle was found as 73.24° (64°–84°). According to Nozaki et al. (2016) classification of subtalar joint faces, 7 types (14%) of B1 type, 13 (26%) type B2, 18 (36%) type C, 3) Type D, E1 type in 6 (12%) and E2 type in 2 (4%). It was found that only 1 subject (2%) was type A.

Conclusion: The results of the study may be a reference foot treatment of talar injuries in clinical practice, such as the design of total ankle replacement components and surgical reconstruction of talar articular structures.

Keywords: talus, morphology, morphometry

O-164

Agenesis of the superior corns of the thyroid cartilage: two autopsy case reports

Ünver Doğan N[1], Dinç AH[2], Doğan KH[3], Demirci Ş[4]

[1]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [2]The Hospital of Grand National Assembly of Turkey, Ankara, Turkey; [3]Department of Forensic Medicine, Faculty of Medicine, Selçuk University, Konya, Turkey; [4]Department of Forensic Medicine, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: Thyroid cartilage is the largest cartilage of larynx and it is consist of two bilateral lamina with hyaline cartilage, which merges at the "V" in the midline. The posterior edges of the laminates extend upward with the superior corn. It is longer and narrower. The lateral thyrohyoid ligament is extending to the apex of the superiorcorn. The agenesis of superior corn is one of the anatomic variations of the thyroid cartilage.

Methods: In this study, two cases of superior corn of thyroid cartilage agenesis are presented which were determined in 1920 forensic autopsies performed in Konya.

Results: Case 1: Right superior corn agenesis was determined in an autopsy conducted that 42-year oldmandiedduetocelebral hemorrhage. Case 2: Left superior corn agenesis was determined in an autopsy conducted that 26-year old man died due to poisoning. No additional larynx variatiion was detected.

Conclusion: In the literature, the agenesis of superior corn has been reported very rarely. In a series of cadaver studies agenesis of superior corn was found to be 0.9% and 1.3%, respectively. Most of the unilateral agenesis cases were on the left side in the literature. In this study, the agenesis of superior corn was noticed on the left in one case and on the right in the other case.This variation can be mistakenly considered broken cartilage by radiologists and forensic medicine experts. This can lead to confusion about the cause of death. It is very important especially for forensic medicine experts to know the variations of thyroid cartilage and hyoid bone at autopsy.

Keywords: autopsy, larynx, superior corn, variation

O-165

Morphometric measurements of the calcaneus bone and types of talar articular facets

Dursun FN[1], Alpa Ş[1], Akın D[2], Aydın Kabakçı AD[2], Yılmaz S[3], Tokpınar A[3]

[1]Department of Anatomy, Faculty of Medicine, KTO Karatay University, Konya, Turkey; [2]Department of Anatomy, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [3]Department of Anatomy, Faculty of Medicine, Yozgat Bozok University, Yozgat, Turkey

Objective: Calcaneus is the largest of the tarsal bones. When the joint surfaces on the upper surface of theCalcaneus joint with the talus's body the joint surface on the front surface is jointed with cuboidea. We aim that define the joint surfaces of calcaneus with obtained numerical parameters and typing in this study

Methods: We selected and typing 63 right and 83 left calcaneus. Calcaneus was divided into four types according to the number of talar joint faces and subdivided into subgroups. The joining of the anterior-medial joints faces is called type 1, if there is nonarrowing is called Type1a and if there is narrowing is called Type 1b in place of the joint faces. In Type 2, there were three separate joint faces. The distance between the anterior-medial joint surfaces was measured with a compass. This measurement is less than 2 mm that Type 2a is called; is between 2–5 mm that called Type 2b, is larger than 5mm that called Type 2c. There with al, it is larger than 5mm and anterior joint surface was very small size that called Type 2d. Type 3 is the absence of the anterior articular surface. Type 4 has a single articulating face all fused together.

Results: Type 1a (%35.6) is the most frequently seen in typing. Type1b (%28) is the second most frequently seen. There was no Type4 in all calcaneus and Type 3 in left calcaneus. The average weight of all calcaneus is 10.36 g. When right-left comparisons are made on all measurements, It has been found to be statistically significant that only the angle between the anterior-medial joint faces is higher on the left side. There is no significant difference between right and left in all other measurements.

Conclusion: The results obtained for calcaneus, which plays an important role in the kinesiology of the foot and ankle, have provided the identification and typing of the joint faces.

Keywords: subtalarjoint, calcaneus, talar articular facets

O-166

Estimation of stature from second and fourth digit lengths in young adults

Mutluay ŞD

Department of Midwifery, Faculty of Health Sciences, Çukurova University, Adana, Turkey

Objective: Estimating stature from long extremity bones, such as femur, humerus, is commonly used in forensic examinations. The aim of the study is to estimate stature by anthropometric measurements of right and left hands second and fourth digit lengths.

Methods: The sample group consisted of 140 young adult 70 male and 70 female (aged 21–19 years) whose second and fourth digit length were measured using digital electronic caliper of their left and right hands. One measurement was taken directly from landmarks at the proximal metacarpophalangeal crease to fingertips. (see Voracek, Dressler, & Manning, 2006). The program Stata (Version 13.0) was used to make a descriptive analysis, One-way Anova, In order to determine the interactions between anthropometric measurements within each other and stature, Pearson Correlation coefficient and related P value was perform. Statistical P value is taken as ($p<0.05$). Linear and multiple regression analysis were performed.

Results: The statistically significant differences between the right-and the left fingers values were not observed for both sexes ($p>0.05$). The correlation coefficients between stature and the measurements of second and fourth digit were found to be positive and statistically significant. The highest correlation coefficient between stature and digit length for males were on right second digit ($r=0.505$) and for females were on left second digit ($r=0.635$). Regression equations were checked for accuracy by comparing the estimated stature and actual stature.

Conclusion: Both regression models could be used to estimate the stature from finger lengths in both sexes.

Keywords: digit length, anthropometry, stature, estimation

O-167

Ultrasonographic evaluation of median and ulnar nerve dimensions in achondroplasia and comparison with normal population

Aslan S[1], Karahan AY[2], Güneş İ[3]

[1]Department of Radiology, Konya Educational and Research Hospital, Konya, Turkey; [2]Clinic of Physical Medicine and Rehabilitation, Necat Hepkon State Hospital, Izmir, Turkey; [3]Department of Physical Medicine and Rehabilitation, Faculty of Medicine, Uşak University, Uşak, Turkey

Objective: Although the word "Achondroplasia (AO)" literally means the absence of cartilage formation, the main problem is ossification in this disease and resulting in short-limbed dwarfism. Developmental disorders of the nervous system are not expected in AO; however, the studies about peripheral nerve size in AO are scarce in the literature. The null hypothesis (H0) is; "There is no relationship between the presence of achondroplasia and peripheral nerve size." This study aimed to investigate whether there is any difference between ultrasonographic (USG) examination of the median nerve (MN) and ulnar nerve (UN) in AO and healthy volunteer measurements.

Methods: Ten AO and 16 healthy volunteers were enrolled. Age, sex, body mass index, shoulder width, forearm circumference, arm and forearm lengths were recorded. The circumferential length of MN measured at the level of scaphoid bone and in the midpoint of the forearm. UN measured at the level of the hook of hamate and in the midpoint of the forearm.

Results: The mean age of AO's was 36.1±12.6 years, and the mean age of healthy volunteers was 30.1±5. The average arm length was 21.4±4.5 cm, and the forearm length was 26.4±5.8 cm in AO, while it was 36.0±3.1 cm and 42.9±2.9 cm in healthy volunteers. The average circumference length of the MN at the scaphoid bone level in the AO was 11.4±1.1 mm, and for the UN circumference was 6.2±0.8 mm at the hook of the hamate

bone level. For healthy volunteers, the same measurements were 13.4±1.7 mm and 9.0±2.0 mm, respectively. There was a statistically significant difference between the two groups (p=0.000). Also unexpectedly, peripheral nerve variations were quite common in AO (XX%).

Conclusion: According to the results; achondroplasia affects the size of the peripheral nerves, such as MN and UN. Extensive investigations are needed.

Keywords: achondroplasia, median nerve, ulnar nerve, ultrasonography

O-168

Relationship of adult abdominopelvic surface anatomy to the anatomical planes and lumbar lordosis angle using CT scans

Açar G[1], Çiçekcibaşı AE[1], Koplay M[2], Seher N[2]

[1]Department of Anatomy, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [2]Department of Radiology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: Surface anatomy and anatomical planes are of great importance in differential diagnosis, surgical treatment, clinical practice and education. Recent studies have pointed out the discrepancies among individuals and ethnicities and also, within anatomical texts. The aim of this study was to reassess the accuracy of key abdominopelvic anatomical planes, variations in surface anatomy landmarks and the relationship of the lumbar lordosis angle to the vertebral level of the aortic bifurcation and inferior vena cava formation using Computed Tomography.

Methods: Abdominopelvic computed tomography scans of 155 patients (83 male, 72 female, age range: 18–82 years) were analyzed.

Results: The origin of the celiac trunk was usually within the transpyloric plane (lower T12 - lower L1) while the origins of the portal venous formation, superior mesenteric artery and renal arteries were below the plane. The dimensions of spleen and kidneys and also, the vertebral levels of the superior and inferior poles of kidneys were identified. The inferior mesenteric artery was more than 1 cm below the subcostal plane (middle L2 – middle L3). The aortic bifurcation, which was within umblical plane (L3–4 intervertebral disc – upper L5) in 86%, above the supracristal plane (middle L4 - middle L5) in 30% of patients whereas, the inferior vena cava formation was within the supracristal plane in 75%. The mean values of aortic bifurcation, inferior vena cava formation and lumbar lordosis angles were 39.67°±8.72°, 57.88°±10.50° and 49.66°±10.10°, respectively. The vertebral levels of these landmarks and measurement values were compared with respect to age and sex and the correlations between these variables were analyzed.

Conclusion: A detailed knowledge of surface anatomy, which is based on modern imaging in living subjects is essential for clinicians to be aware of ethnic and individual variations and for safe interventional procedures.

Keywords: abdominopelvic plane, computed tomography, lumbar lordosis, surface anatomy, vertebral level

O-169

Morphometric measurements of corpus callosum: its relation with sex and age

Tuncer I

Department of Anatomy, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: Corpus callosum is the most important path to bind the same parts in both hemispheres to each other. Changes in parts of corpus callosum [Rostrum (R), Genu (G), Truncus (T), Isthmus (I) and Splenium (S)] indicates some central nervous system diseases. And some studies indicate progresses of these diseases. The aim of this study is to determine morphometric measurements of corpus callosum relation with to sex and age.

Methods: This study was conducted in Necmettin Erbakan University, Meram Faculty of Medicine, Anatomy Department. Length, width, and surface measurements of R, G, T, I and S parts of 104 healthy individuals' (44 male and 60 female) has been measured. The data acquired has been analyzed with student-t test with to sex and age.

Results: Statistically significant differences were found between male and female except to CCL, CCW, GA, SW, SA, ICA and ICV (p>0.05). Also significant differences were found between below 40 and above 40 age measurements except to GW, GA, ICA and ICV (p>0.05).

Conclusion: That some diseases have effect on brain measurements, and morphometric measurement of corpus callosum is important on diagnosis and treatment of certain central nervous system diseases shall be represented.The results of study will be used as a reference work in following treatment and diagnosis in variosus diseases as schizophrenia, dyslexia and myotonic distrophy.

Keywords: corpus callosum, sex, age, MRI

O-170

Morphometric analysis of internal carotid artery with multidedector computed tomography

Uğuz A[1], Büyükmumcu M[2], Emlik D[3], Aydın Kabakçı AD[2], Kadiyoran C[3]

[1]Özel Anadolu Sevgi Yumağı, Special Education and Rehabilitation Center, Karaman, Turkey; [2]Department of Anatomy, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [3]Department of Radiology, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: Internal caroitd artery (ICA) is seperated from right and left common carotid artery. It extends towards the skull in the neck region and reaches the carotid canal (CC). After the course in the carotid canal, it extends into the skull. It is the main responsible artery for the supplying of intracranial structures. It

has been reported that anomalies of extracranial part of ICA cause to cerebrovascular insufficiency in 4% to 16% of cases.We aimed to obtain datas for ICA and evaluate the course of the extracranial part of ICA.

Methods: Our study was conducted on the neck CT angiography, cranial CT angiography, arcuate aortography, carotid angiography images of 101 patients who applied to the Meram Medical Faculty Hospital of Necmettin Erbakan University with headache, neck pain and dizziness. In our study, the diameter of the ACC for the right and left side, the diameter of ICA at which the ICA seperate from the ACC, the diameter of ICA before entering the CC, the diameter of ICA within the CC, diameter of the carotis externa (ACE), angle of bifurcatio carotidis, angle where the ICA entered the CC and where the ICA emerged from the CC. In addition, bifurcatio carotidis level was classified according to mandibula and vertebral levels. The course of the ICA was classified in the neck region. The position of ICA separation from ACC was classified into two groups as antero-posterior and medio-lateral.

Results: The mean age of the patients in this study was 59.98±14.59. It was determined that the mean diameter of ICA at which the ICA separate from ACC was 6.75±1.38 mm, the mean diameter of ICA before entering the CC was 4.47±0.89 mm, the mean diameter of ICA within the CC was 3.74±0.79 mm. The angle at which the ICA first entered the CC was determined to be 95.79±23.49º and the angle at which the ICA exit from the CC was 133.17º±12.05º. When ICA was evaluated bilaterally, it was determined that ICA separated from anterior-posterior of ACC by 84.7% and medio-lateral aspect by 15.3%. In 53% of patients, ICA was found to be separated from ACC in the 1/2 level of the mandible and 29.2% in the C3 vertebra level.

Conclusion: We believe that the knowledge of the anomalies of ICA will prevent the complications that may occur in the region and that the obtained data will be useful for determining the severity of the critical stenosis cases.

Keywords: internal carotid artery, morphometry, variation

O- 171

Effectiveness of acupuncture in the case of treatment-resistant trigeminal neuralgia

Gülcen B[1], Tepe N[2]

[1]Department of Anatomy, Acupuncture Application Center, Faculty of Medicine, Balıkesir University, Balıkesir, Turkey; [2]Department of Neurology, Faculty of Medicine, Balıkesir University, Balıkesir, Turkey

Objective: Nervus trigeminus is the fifth of 12 cranial nerves. It is the thickest cranial nerve and contains motor and sensory fibers. After leaving the brain stem, it separates into three main branches. N. ophthalmicus is responsible for upper eyelid and forehead sensation, N. maxillaris controls lower eyelid, upper jaw, nose and nostrils and cheek senses, and finally N. mandibularis regulates lower jaw sensation and provides motor function of chewing muscles. Trigeminal neuralgia is a neuropathic disorder characterized by unilateral, sudden, severe, brief, lightning stinging pain of sensitive branches oftrigeminal nerve. Acupuncture treatment is applied to trigeminal neuralgia cases to affect the three main branches of the trigeminal nerve and creates positive clinical outcomes by inhibiting the neuromodulators that make pain. The aim is to report the therapeutic effect of acupuncture treatment on medical treatment resistant trigeminal neuralgia.

Methods: A 59-year-old female patient was admitted to our hospital three years ago with attacks especially in the nose, around the eyes and on the cheek in the form of instantaneous electrification. These attacks are triggered by common daily applications such as washing her face, brushing her teeth, eating her meal. Since the patient already had a migraine history, initially the neurology department has treated this patient with amitriptyline for headaches and oxcarbamazepine for the facial episodes. After success in the first year of treatment, the patient's complaints were repeated so oxcarbamazepine was then switched to pregabalin treatment. The attacks of the patient has reoccured after nine months, oxcarbamazepine and duloxetine was added to the treatment and botulinium toxin administration was performed. Later, since the patient did not benefit from medication, 18 sessions of acupuncture treatment were performed as both the body and ear acupuncture. In 6 of 18 sessions, additional therapeutic interventions were made with agiscope to the ears.

Results: The patient, who had a large number of attacks per day, has not been exposed to any attacks within the last year. Following the discontinuation of duloxetine, pregabalin was also discontinued and oxcarbamazepine was planned to be discontinued with reduced doses.

Conclusion: This case is important in terms of considering acupuncture application as an alternative treatment option before surgery in patients with treatment-resistant trigeminal neuralgia.

Keywords: trigeminal nerve, trigeminal neuralgia, acupuncture

O-172

Evaluation of anatomical variations of sinonasal region by three planes of computed tomography images (coronal, axial, sagittal)

Özdemir A

Department of Radiology, Faculty of Medicine, Kırıkkale University, Kırıkkale, Turkey

Objective: Anatomicalvariations of thesinonasalregionare frequently encountered. These anatomic variations cause narrowing or obstruction in the sinus drainage channels. In paranasal sinus surgery, anatomy and variations should be well known. There are studies in the literature with single-plan (coronal) computed

tomography (CT) in order to reveal the anatomy and variations of the paranasal sinuses. There is no study about anatomical variations evaluatedbythreeplanes of CT images(coronal, axial, sagittal).Thisstudyaimedto evaluate the anatomic variations of the sinonasal region by computed tomography with three planes (coronal, axial, sagittal).

Methods: Paranasal CT imageswere obtained retrospectively at Kırıkkale University Hospital between September 1, 2017 and December 30, 2017, using multislice (Philips) 64-section CT.The presence ofseptal deviation-spur formation, bullae-hypoplasia-paradox of the middle concha, frontal sinus aplasia-hypoplasia, maxillary sinus hypoplasia-accessory ostium, anterior-posterior clinoid pneumatization, uncinate proces-crista galli pneumatization, agger nasi, frontal cell, haller cell and onodi cell were evaluated.

Results: A total number of 208 paranasal sinus CT images were analyzed. These were 105 males (mean age 34.78-SD 14.47) and 103 females (mean age 35.16-SD 14.74). In 76% of cases, agger nasi cell was the most common variation. Septal deviation (right 25.5%, left 29.8% and bilateral 13%) and concha bullosa (right 11.1%, left 10.6% and bilateral 19.2%) were observed with 68.3% and 40.9% respectively. The least common variations were posterior clinoid pneumatization (1.9%) and crystal galli pneumatization (1.9%).

Conclusion: Ourstudywillcontribute to the literature about the frequency variations of the paranasal sinuses. Furthermore, unlike the studies in the literature, anatomical variations observed in three planesof CT images which we believe that this technique is more effective to detect variations.

Keywords: anatomic variations, sinanasal region, computed tomography, three planes

O-173

Multiple variations in the upper limb of a single cadaver

Çalıkuşu A, Üçerler H

Department of Anatomy, Faculty of Medicine, Ege University, İzmir, Turkey

Objective: Median nerve along with brachial artery and ulnar nerve runs distally in the medial bicipital groove which located in the medial region of biceps brachii. At the top of the forearm, it passes between the two heads of the pronator teres. It is stated that in the literature, median nerve does not pass between two heads of pronator teres at 16% of cases. Radial artery is originated from brachial artery in the direction of radial neck, the radial artery lies under the cover of the brachioradialis and in the lower part it becomes superficial under the cover of the skin and fascia. This is the normal configuration of radial artery.Besides of the single variation on the upper extremity, there is little information in the literature about multiple variations artery and nerve in the single upper extremity. The aim of this case report is to show the rarity of the newly detected configuration of the arteries, and the abnormal course of the median nerve, to illuminate the clinicians for diagnosis and treatment.

Methods: Upper limb of the male adult cadaver that fixed with 10% formalin was dissected in Ege University, Faculty of Medicine, Department of Anatomy.

Results: During the detailed dissection, we encountered multiple artery and nerve variations in the left upper limb of the cadaver. The median nerve did not pass between the two heads of the pronator teres in the course of the cubital fossa in the upper left extremity. It was first observed that median nerve pierced the humeral head and runs to the forearm and then it was seen passing under the ulnar head, which is seen as a fibrous band. At the same time, the radial artery were seen 152.8 mm above the intercondylar line, originated from the brachial artery and torsionally of radial artery with brachial artery runs distally. It was observed that brachial artery was divided into ulnar artery and common interosseous artery branches 51.8 mm below the intercondylar line in cubital fossa.

Conclusion: The high origin of radial artery may cause possible avasculer conditions or traumas during catheterization and surgical operations. The course of median nerve in arm and forearm with the high origin of the radial artery is very important in terms of the success of operations to be performed in these regions.

Keywords: high origin of radial artery, median nerve, pronator teres, entrapment nerve

O-174

The effects of regular swimming exercise and melatonin on the neurons localized in the striatum of Parkinsonian rats

Gergin S, Kirazlı Ö, Boracı H, Yıldız SD, Şehirli ÜS

Department of Anatomy, School of Medicine, Marmara University, Istanbul, Turkey

Objective: Parkinson's disease (PD) is the second most common neurodegenerative disease which is charecterized by the loss of dopaminergic neurons found within the substantia nigra pars compacta and striatum. Neurodegenerative disorders are mainly caused by oxidative damage. Melatonin is an indole which has been shown to have potent endogenous antioxidant actions. Beside the medical treatment, the physical therapy programmes are being involved as one of the mainstay in the treatment options.

Methods: 6-OHDA is injected unilaterally to the medial forebrain bundle of Wistar rats (n=48) by stereotaxic method. Rats are divided into eight groups; PD-four and Sham-four groups (vehicle-SF injection). These four groups are; melatonin, swimming exercise, both melatonin and swimming exercise and sedentary. Melatonin injection is applied by intraperitonally (30 days). Exercise groups were regularly floated for 6 weeks (30 min/day, 5 days/week). At the 21th and 30th day following

to the 6-OHDA injection, stepping and rotation tests (apomorphine 0.25 mg/kg sc) are applied. Brain excision was performed after transcardiac perfusion. Tyrosine hydroxylase immunohistochemistry protocol and golgi staining technique were applied to the sections. Neuron analyzes were obtained by Neurolucida system (Microbrightfield Inc).

Results: The number of rotations of both melatonin and exercise groups were found to be less when compared to the sedentary group with a statistically significant difference. Dendiritic spine types were defined in all groups by neurolucida analyses system. Stubby types which are related with degeneration decrease in PD group with melatonin and swimming exercise. Whereas thin type spines were increased in PD group with swimming exercise prominently compared other groups.

Conclusion: Our study managed to verify the hypothesis by demonstrating the neuroprotective effects of the exercise and melatonin. We would like to show a direction to the further clinical studies which could be done in order to show the effects of prolonged periods of exercise and melatonin in PD treatment.

Keywords: Parkinson's disease, exercise, melatonin, neurolucida, dendritic spine

O-175

Research on lower limb alignment and association of frontal plane knee (Q angle) alignment in foot posture

Nteli Chatzioglou G[1], Gövsa F[1], Hepgüler S[2], Pınar Y[1], Bedre O[1]

[1]Department of Anatomy, Digital Imaging and Modelling Laboratory, Faculty of Medicine, Ege University, Izmir, Turkey; [2]Department of Physical Therapy, Faculty of Medicine, Ege University, Izmir, Turkey

Objective: Differences in foot structure are postulated to be associated with differences in function. Foot pathologies are biomechanical in origin are associated with lower limb alignment disorder. Although there are studies focusing on foot alignment resulting from lower limb alignment disorder, the literature lacks more research.

Methods: This study was conducted with 200 healthy adults between 18 and 22 years of age that had no symptoms of pain, no foot or ankle pathology. The standard measure of knee alignment is the mechanical axis and Q angles. Volunteers were evaluated with photography of the lower limb with weight and plantar at anteroposterior sides. Photogrammetric measurements were conducted with Image J program. Measurements were taken using plantar pressure measuring device, R-scan Footscan system and the weight-bearing position.

Results: Measurements of the Q angle were modified to reflect the mechanical alignment by subtracting a sex-specific correction factor. Increase and decrease in Q angle signify valgus and varus postures. The need for sex-specific correction has been proposed because women have more distal femoral valgus than men. Based on Q angle, the knees were categorized into groups.

Conclusion: Variety of conditions lead to the lower limb alignment disorder including dermatologic conditions related with keratotic pathologies, orthopedic deformities and abnormal medial arch structure. Alterations are correlated with poor quality of life. The treatment protocol can be based on the analysis lower limb and the plantar and measuring the Q angle.

Keywords: foot posture, lower limb alignment, Q angle, photogrammetry

O-176

Superficial and deep facial fat compartments

Çeri NG, Kasar ZS

Department of Anatomy, Faculty of Medicine, Aydın Adnan Menderes University, Aydın,Turkey

The anatomy of the face has become very important because of the increase in the number of applications for rejuvenating the face in recent years. Studies on the facial region, which has a complex structure, has increased in recent times and has allowed some new anatomical structures to be identified. Anatomical identification of fat compartments of the face is of great importance for the plastic surgeon's attempts to facelift. Clinical observations and laboratory studies show that the adipose tissues of face are in different anatomical regions. The facial fat tissue is divided into superficial and deep by the SMAS (superficial musculo-aponeurotic system) or mimic muscles. The adipose tissue in these areas is separated by independent compartments by facial barriers. The fat pads in these compartments contribute to the appearance of the face by giving volume to the face area. In addition, because the deep fat compartments are close to some facial muscles, there is also the effect of facilitating movement of these muscles. The separation of the adipose tissue in the facial region allows the restoration of the facial volume in the required areas. The surface superficial adipose tissue is grouped according to the compartments: forehead and temporal fat compartments; central, middle, and lateral temporal-cheek fat pads, orbital fat compartments; superior orbital, inferior orbital, lateral orbital fat pads, cheek fat compartments; nasolabial, medial, middle, and lateral temporal-cheek fat pads, jowl fat compartments; superior jowl and inferior jowl fat pads. Deep compartments exist that lie below the SMAS, are anterior or posterior to the mimetic muscles. These include the retro-orbicularis fat pad, sub–orbicularis oculi and, buccal fat pads, deep medial cheek fat pad, and lateral deep cheek fat pads. As a result, anatomically well-known adipose tissue in the face is of great importance for interventions to be performed on the face.

Keywords: facial fat pads, fat compartments, subcutaneous adipose tissue

Poster Presentations

(P-1 — P-157)

P–1

Left-sided inferior vena cava: a case report

İsmailoğlu AV[1], Verimli U[2], Kirazlı Ö[2], Özkan M[2], Şehirli ÜS[2]

[1]Department of Anatomy, Faculty of Medicine, Acıbadem Mehmet Ali Aydınlar University, Istanbul, Turkey; [2]Department of Anatomy, Faculty of Medicine, Marmara University, Istanbul, Turkey

Objective: Inferior vena cava (IVC) is mostly located at the right side of abdominal aorta. IVC anomalies may develop because of the complex embryogenesis and anastomosis of the paired abdominal veins. The persistent left supracardinal vein anastomoses with the right subcardinal veinwhich form the left-sided IVC crossing over the abdominal aorta. In that case, the left-sided IVC usually crosses anterior to the abdominal aorta after receiving left renal vein to join its retrohepatic position. The incidence of left sided IVC is reported as 0.2 and 0.5%.

Methods: During routine dissection in the Department of Anatomy, Marmara University the left-sided IVC variation was encountered in a male cadaver aged 72.

Results: The left-sided IVC was originated by confluence of the common iliac veins at the L5 vertebra level and ascended vertically to the level of the left kidney. Here, left-sided IVC received left testicular vein, bifurcated left renal vein, left first lumbar vein and left superior suprarenal vein. After crossing the abdominal aorta below the superior mesenteric artery, the IVC positioned to the right side of the aorta, it collected a common trunk that formed by the right testicular vein, the right first lumbar vein and the posterior segment of right renal vein. After receiving the right renal vein, the IVC then coursed in its normal retrohepatic position. Before reaching to the level of the left kidney, the left-sided IVC was crossed anteriorly by the left common iliac artery, the left testicular artery and the superior mesenteric artery, consecutively. Beside variations of tributaries of the IVC, additional hepatic artery which arose from superior mesenteric artery was present.Because of IVC variation the inferior pole of the right kidney was located 18mm higher than the inferior pole of the left kidney.

Conclusion: This case report showed the anatomy of left sided IVC and variation of its tributaries. Because of IVC variation, kidneys and arterial vessels were also variative.

Keywords: inferior vena cava, left-sided, variation, transposition

P-2

Orbital index and orbital dimensions in adult human skulls

Açıkgöz AK

Department of Anatomy, Faculty of Medicine, Çukurova University, Adana, Turkey

Objective: The orbit is a cavity in the skull which consists of eye and eye related structures. Morphometric values of orbit are very important for diagnosis and evaulation of deformity after craniofacial trauma. In our study we aimed to obtain orbit normal reference values and in addition to investigate effect of foramen supraorbitale and incisura supraorbitalis presence on orbital index values.

Methods: For our study 36 orbits of 18 dry skulls (18 right, 18 left) from Department of Anatomy, Faculty of Medicine, Çukurova University, Adana were examined. The orbital height (OH) and orbital width (OW) were measured by using digital caliper nearest 0.1 mm and orbital index (OH/OG×100) were evaulated. Also presence of foramen supraorbitale and incisura supraorbitalis was noted. For obtained data SPSS 22 programme were used.

Results: In our study, orbital height, orbital width, orbital index were found as 35.84±2.08 mm, 40.79±2.40 mm, 87.94± 3.95 respectively. According to study results there were no statistically significant differences between right and left values in terms of orbita height, orbita width and orbital index values. Additionally, when we analyze our specimen in accordance with orbital index all of our skulls come under mesoseme category.

Conclusion: Our study provides important orbital morphometric data for ophthalmology, maxillofacial and aesthetic surgery and neurosurgery and also for forensic medicine and anthropology fields.

Keywords: orbita, orbital index, orbital measurements

P-3

Morphometric investigation of nutrient foramen in femur, tibia and fibula

Yılmaz A, Karahan M, Çıkmaz S

Department of Anatomy, Faculty of Medicine, Trakya University, Edirne, Turkey

Objective: Nutrient Foramen (NF) has significant role for nutrition of long bones. In this study we aimed to investigate the

position, number and width of NF which includes nourishing vessels of lower limb long bones.

Methods: We morphologically examined 34 femurs, 12 tibias and 5 fibulas in Trakya University, Departmant of Anatomy. In this research we investigated the number of NF, position on bone body and width of entrance holes on these bones and also foraminal index (FI) (ratio of distance between nutrient foramen and proximal end of the bone to total bone length) for each bones.

Results: To these measurements, %77 of femur had single NF and %74 of NF was located on facies anteromedialis. The average diameter of NF was 1.38 mm, FI was 42.67 mm. All of tibias had single NF and had NF located on the posterior surface. The average NF diameter was 1.25 mm and FI was 35.32 mm for tibia. %80 of fibula had single NF and 60% of the bone's NF was located on facies posterior. The average diameter of NF was 0.83 mm and the average FI was 36.56 mm for fibula.

Conclusion: The location and number of NF for long bones are important espacially for healing process and surgical procedure of bone fracture. Therefore these datas may be useful for clinicians and have contribition for litterature.

Keywods: nutrient foramina. long bones, lower extremity

P-4

The mystery underlying acupuncture therapy: fascia and primo vascular system

Yılmaz A

Department of Anatomy, Faculty of Medicine, Trakya University, Edirne, Turkey

Acupuncture is the most well-known treatment among traditional therapies and continues to be applied as much as the day-to-day treatment. It allows circulation of the energy within the body through the channels. Acupuncture applied to Far Eastern countries for the treatment of diseases for thousands of years is now widely used in European countries. Acupuncture applied by sinking needle into certain spots on the body is applied in the treatment of many diseases with the pain relieving, healing and regulating effect on the immune system. It is accepted as a supportive treatment method in weight control due to its effects on the metabolism. What are the underlying factors behind the scientifically proven acupuncture treatment mechanism? This is the point at which scientists and scientists today share common stakes. The fascia surrounding the muscles and organs is considered to be a dynamic tissue with vessels and nerves, although it is not considered a passive structure. Mechanical transmission is also actively involved because it provides dynamic connections between muscles and bones. Fascias are usually internalized by proprioceptive nerves. It is closely related to the autonomic nervous system. Fasia also has a role in transmitting electrical signals throughout the body. The dynamic structure of the fascia should not be overlooked in the mechanism of acupuncture therapy. Another component of the acupuncture effect mechanism is the primovascular system. Primo vasculary system (PVS) was first reported by Bong-Han Kim at the beginning of 1960's. In addition to blood and lymphatic systems, the human body is described as a third vascular section. PVS, Bonghan corpuscles and Bonghan channels. Although research on PVS has been left for unknown reasons, it has become the focus of researchers in the 2000s. Studies on the relationship with diseases and their place in acupuncture treatment are increasing day by day. However, the specific function of PVS in biological processes remains uncertain. The structure of PVS is different from nerves and blood vessels. Studies focus on the relationship with acupuncture meridians and acupuncture points. It is still considered to be a new and distinctive structure of PVS, but it still maintains its mystery. Studies on faciology and PVS will shed light on the mechanism of action of acupuncture therapy.

Keywords: acupuncture, primovascular system, fasciology

P-5

The case of bilateral agenesis of palmaris longus muscle

Zeybek A[1], Özkan M[2], Alpay M[1]

[1]Department of Anatomy, School of Medicine, Tekirdağ Namık Kemal University, Tekirdağ, Turkey; [2]Department of Anatomy, School of Medicine, Marmara University, Istanbul, Turkey

Objective: Musculus palmaris longus is a muscle showing variation at various rates in different races, which inserts to palmar aponeurosis. The presence of the muscle is important because of the use in reconstructive surgery as well as the contribution of the hand grip, hand flexion and to the stretching the palmar aponeurosis.

Method: During routine dissection, it was seen that palmaris longus muscle was absent in both forearms. The prevalence of bilateral absence of this mammal-specific muscle is 1.2% in Chinese population (Sebastin et al 2006), 19% in Bahraini population (Sater et al., 2010) and 45.3% in Turkish population (Ceyhan and Mavt, 1997).

Conclusion: The presence of the palmaris longus muscle is of clinical anatomical value. The use of the palmaris longus, especially in reconstructive plastic surgery, is important for affecting the sensory and motor features of the hand.

Keywords: palmaris longus muscle, agenesis, bilateral, variation

P-6

The anatomy of the amygdaloid nuclear complex

Zeybek A[1], Özkan M[2]

[1]Department of Anatomy, School of Medicine, Tekirdağ Namık Kemal University, Tekirdağ, Turkey; [2]Department of Anatomy, School of Medicine, Marmara University, Istanbul, Turkey

Objective: The amygdaloid nuclear complex or amygdaloid body is an almond-shaped structure consisting of six nuclei locat-

ed in the rostral part of temporal lobe. The amygdaloid nuclear complex is closely related to the limbic system and plays an important role in processes such as mood, survival instinct and memory. In highly intense emotional situations, it disables neocortex and prevents the cognitive functions from taking place. While the amygdaloid nuclear complex is stimulated by axons from monoaminergic neuron groups, axons of its neurons innervate many parts of the central nervous system, primarily via the stria terminalis (dorsal pathway) and the ventral amygdalofugal pathway.

Methods: The recent articles in Pubmed were scanned using the words, "amygdala, amygdaloid nuclear complex, amygdaloid nucleus, optogenetic, connection and function" and reviewed.

Results: The intense afferent and efferent connections of the amygdaloid nuclear complex affect various neural functions, such as learning, addiction and recall, as well as modulation of various emotional states as fear. In addition, the degeneration or optic silencing of the neuronal groups involved here leads to anxiety disorders with deterioration in the processes described above.

Conclusion: When analyzed using various imaging techniques, the volume of the amygdaloid nuclear complex increased or decreased in neurological diseases. The role of these observed changes in disease was assessed and the functions of the amygdaloid nuclear complex examined.

Keywords: amygdaloid nuclear complex, anatomy, function.

P-7

The case of bilateral great sapheonus vein variation

Zeybek A[1], Alpay M[1], Özkan M[2]

[1]Department of Anatomy, School of Medicine, Tekirdağ Namık Kemal University, Tekirdağ, Turkey; [2]Department of Anatomy, School of Medicine, Marmara University, Istanbul, Turkey

Objective: Great sapheonus vein starts from the dorsal venous arch of foot and drains into the femoral vein in the femoral trigone. Great sapheonus vein is the longest vein of the body and has long been preferred for aortocoronary bypass operations.

Methods: During the routine dissection in our department, bifurcated great sapheonus veins were observed bilaterally.

Results: On the right side, the bifurcation begins at 14.5 cm above the medial malleolus and continues as a thinner medial (1 mm thick at the leg, 2 mm at thigh) and a thicker lateral (3 mm at the leg, 6 mm at the thigh) branch for 54 cm. Then, they form a 15.2 cm long and 7 mm thick vein, which drains into right femoral vein. On the left side, at 14 cm above the medial malleolus the left great saphenous vein bifurcates similar to the right side. However, the two branches (medially, 3 mm and laterally 2 mm thick) ascend for 11.2 cm in the leg seperately and 8.8 cm adherently on the medial side of the knee joint. They then climb into two branches, one 3.5 mm thick medial and other 3 mm lateral for 48.5 cm in the thigh and drain into the left femoral vein. In literature, one study reported that great saphenous vein with unilateral bifurcation (Kumar et al., 2017).

Conclusion: In cardiovascular surgery, the length of venous graft needed varies according to the vessel to be bypassed. Morphometric values, such as vessel diameter, are directly proportional to the duration of grafting. As in our case, these venin variations are clinically important and particularly valuable for surgery.

Keywords: great saphenous vein, bilateral, variation.

P-8

Papier-mâché anatomical models and Louis Thomas Jérôme Auzoux (1797-1880)

Ortuğ A, Yüzbaşıoğlu N

Department of Anatomy, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

Objective: Papier-mâché literally means chewed paper, and historically has involved various techniques and materials. In time, various decorative products and functional objects were produced with this method. Perhaps the most interesting of these is the anatomical models that the French Doctor Louis Thomas Jerôme Auzoux (1797–1880) invented at the beginning of the 19th Century and made it widespread throughout the world. This study examines the historical development of the papier-mâché models, which are the starting points of the anatomical models that have an important role in teaching of the anatomy. Also, identify possible relation with the history of Turkish anatomy.

Methods: The study conducted on open-access museum collections and scientific databases.

Results: Historically, it has been difficult to protect cadavers as well as restrictions on dissection due to cultural and religious reasons. For this reason, alternatives have always been sought in education. The wax models have been as successful as illustrations, but has not been a strong alternative for dissection. As a medical student in the early 19th century, Auzoux found it difficult to study anatomy when the human cadavers he was dissecting deteriorated rapidly and wax models were not readily available. Dr. Auzoux completed his invention by 1825, and established a manufactory at St. Aubin for the production of anatomical models. He obtained gold medals for his anatomical preparations at the French exposition of 1834 and 1849. The models produced by this method had important features. The material used was light, not easily broken, and unaffected by the ordinary temperature changes. The parts could be made in expanded (large) sizes and colored to imitate the nature. The pieces representing different parts of an organ or different organs of the body may be separated or recombined. Many medical schools in Europe, Africa and South America have benefited from these models. The sources include the Ottoman Empire ordering a whole human mannequin of 116 cm in size for the Haydarpaşa Hospital (l'Hôpital Haïtas Pacha).

Conclusion: The company founded by Dr. Azaux soon started producing not only human anatomical models but also veterinary and botanical models. The fate of the human anatomy model purchased for the Ottoman Empire is unknown today.

Keywords: Auzoux, anatomical model, papier mâché

P-9

Lusoria artery: scarcely cause of disphagia

Aydın Kabakçı AD[1], Akın D[1], Emlik D[2], Poyraz N[2]

[1]Department of Anatomy, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [2]Department of Radiology, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: Lusoria artery [Right subclavian artery (ASSA)] is a congenital anomalous of right subclavian artery that is rarely seen and frequently seen asymptomatic course.In patients with this anomaly, dysphagia, cough, and stridor can be seen as a result of pressure on the surrounding tissues of the artery. Because of the difficulty in swallowing is the most common problem, it is also called "dysphagia lusoria". It was first described on the autopsy of a female patient who complained of dysphagia by David Bayford in 1794. The diagnosis of ASSA is often coincidental.

Methods: A retroesophageal aberrant right subclavian artery was found on thorax computed tomography (CT) scan of a 32-year-old male patient who applied the hospital with chest pain.
Results: Four major vessels were detected in the aortic arch of the patient: right main carotid artery, left main carotid artery, left subclavian artery and right subclavian artery. It was found that the right subclavian artery leaved from the left side of the aortic arch, passed to the back of the esophagus and reached to the right axillary region. Aortic arches and branches begin to form in the first weeks of development and take their final shape in about the 8th week of gestation. Variaitons in development stages lead to differences in the formation of aortic arches and branches. ASSA is the most common anomaly of the aortic arch, and the incidence in the community is between 0.5% and 1.8%. The ASSA can compress the trachea, the main bronchi, the esophagus to full or close to full. This may cause respiratory and swallowing problems.

Conclusion: The incidence of dysphagia in adults was reported to be 37.5%, especially due to the close neighborhood relationship to the esophagus.

P-10

The anatomy of 1.618

Çolakoğlu M[1], Yalçın N[1], Aslanoğlu EE[1], Tarınç İ[1], Aydın GS[1], Kürkçüoğlu A[2]

[1]Faculty of Medicine, Başkent University, Ankara, Turkey; [2]Department of Anatomy, Faculty of Medicine, Başkent University, Ankara, Turkey

Objective: 'Golden Ratio' or 'Golden Number' otherwise known as the Divine Proportion (Phi), is a mathematical ratio with special properties and aesthetic significance. "Fibonacci" had described a number series that led to a significant upheaval in our understanding of mathematical aspects of nature. This sequence, namely Fibonacci Series or Sequence, constitutes an infinite chain of numbers starting with '0' or '1' and following as 0, 1, 1, 2, 3, 5, 8, 13, 21, 34… particularly implying that the sum of two consecutive integers equals the subsequent one. An enormous number of things in the universe are engineered around the ratio, ranging from the human body to the art of the covenant to snail shells to the orbits of the planets. It plays a vital role in the arrangement of petals in flowers, structure of DNA and various proportions in human face, structure of sea shells etc. Occurrence of this proportion in zoology is frequent, viz in the clock cycle of brain waves, in hearing and balance organ etc.

Conclusion: The present review primarily aims to focus on human manifestations of divine aesthetics as demonstrated with 'Golden Ratio' and associated indiceswith a particular emphasis and detailed information on their association with the human body.

Keywords: golden ratio, golden number, human body, Fibonacci series

P-11

A study on medicine and health sciences students' perceptions and awareness levels regarding body donation for anatomy education

Uslu Aİ[1], Altunbaş M[1], Filimci HD[1], Direkçi S[1], Karaca M[1], Konuş M[1], Serin A[1], Altunkaynak E[1], Cinkara B[1], Günel Karadeniz P[1], Soran Ö[1,2], Akkın SM[1]

[1]School of Medicine, SANKO University, Gaziantep, Turkey; [2]Heart and Vascular Institute, University of Pittsburgh, Pittsburgh, PA, USA

Objective: This study aims to determine the perceptions and awareness levels of undergraduate students from various health departments on body donation for anatomy education as well as possible actions to increase the awareness of the society.

Methods: A 28-question-questionnaire in the form of face-to-face interview was administered to students of Faculties of Medicine and Health Sciences via SANKO University SRP (No: PRJ2042). The questions were about opinion, behavior and awareness on body donations. SPSS (v23) was used for data analysis. Descriptive statistics were given as percentages and frequency. Chi-square test was used for comparisons.

Results: A total of 385 students participated in our study (males: 32%, females: 68%). The average age was 19.9±1.6. The participation rate of each department was as follows: 128 (33%) from Medicine, 80 (21%) from Nutrition and Dietetics, 128 (33%) from Nursing, and 49 (13%) from of Physical Therapy and Rehabilitation.139 (36%) students made at least one donation. 1, 7 and 135 of students donated their body, organ and blood respectively. In their families, 13 people (3%) donated their bodies while 43 (11%) donated their organs. In

the meantime, 31% (n=4) out of those whose family donated body, and 19.6% (n=72) of those with no family body donations would like to donate their bodies (p=0.323). Only 53 (14%) students stated that they might get body donation approval from their immediate family. When asked about their reservations on body donations; fear, religious restrictions, and disrespect to donated body were stated as 91 (34.2%), 84 (31.5%), and 53 (19.9%) in their respective order. In order to raise the donation rates, participants shared their ideas to improve the current body donation figures. 98 (25.9%) focused on legal regulations, whereas 169 (44.7%) on curriculum expansion with required courses, and 171 (45.2%) on public service announcements.

Conclusion: The students from Medicine and Health Sciences departments care about human cadavers in terms of contribution to humanity and anatomy education. They have a high level of body donation awareness, yet they are hesitant to donate their own. Reducing their doubts on body donation for anatomy education will appoint them as emissaries in terms of making society conscious in the future.

Supported by SANKO University Scientific Research Project No: PRJ2042

Keywords: cadaver, body donation, anatomy education

P-12

Microbiological evaluation of fungal growth on formalin-fixed cadavers in the anatomy laboratory

Yılmazer Kayatekin AZ[1], Kuyucuklu G[2], Bozer C[1], Gürcan S[2], Cigalı BS[1], Taşkınalp O[1]

[1]Department of Anatomy, Faculty of Medicine, Trakya University, Edirne, Turkey; [2]Department of Medical Microbiology, Faculty of Medicine, Trakya University, Edirne, Turkey

Objective: Cadavers are the main material of anatomy education. Embalming the cadaver avoids post-mortem changes. Formalin, ethanol and phenol are commonly used as fixatives during embalming in anatomy laboratories. In rare cases, microorganism growth may also be seen on embalmed cadavers. We aimed to share our experience about microorganism growth on cadavers and to discuss about precautions that could be taken.

Methods: The new lecture building of the Trakya University School of Medicine as first used in 2015–2016 academic year. The cadavers were transferred to the new cadaver storage pool in Anatomy Laboratory in this building. We used that pool with 5% formalin solution up to 20 cm height in it while cooling and humidifying functions were on. Cadavers stayed closed in pool for 4 months till the beginning of the new academic year. We observed that there were green, yellow and black colored fungal growth on two cadavers those placed on the top floor of the pool. Bacterial or fungal growth was not observed in cultures of swab samples or contaminant tissue samples. Than we collected air samples from anatomy laboratory and inner room in which pool takes place. *Alternaria spp.* and *Fusarium spp.* growth observed in materials collected from inner room. *Aspergillus spp.* and *Penicillium spp.* growth observed in materials collected from anatomy laboratory.

Results: We got cleaned the laboratory and the inner room in which cadaver storage pool takes place. The cadaver storage pool was unloaded and cleaned. The pool was filled with freshly prepared 10% formalin solution that we added phenol in. We dissected the microorganism growth areas from cadavers.

Conclusion: Cadavers are important elements of the anatomy education. Infections seen on embalmed cadavers shorten cadaver use period and have the risk of contamination. Cadavers that are very difficult to provide in our country are required to be kept and protected under suitable conditions.

Keywords: cadaver, embalmed cadaver, fungal growth

P-13

Who wants to be a cadaver?

Tekin B, Yüzbaşıoğlu N

Department of Human Anatomy, Istanbul Medipol University, Istanbul, Turkey

Objective: Despite the importance of body donation for medical education and the advancement of medical science, cadaveric donation remains suboptimal worldwide. Without dissection of cadavers teaching and learning of anatomy is nearly difficult; there remains a gap between the practical knowledge and the gathered theoretical knowledge. Our study aimed to evaluate the opinions and thoughts of our University lecturers and students about cadaver donation, and related ethical dilemmas.

Methods: The study group consisted of a total of 364 individuals including 307 students and 57 teaching staff.

Results: 18.7% of the participants stated that the people around them thought that they would donate their bodies as cadaver, and 56.0% of the participants stated that they supported their relatives to be donors. 76.9% of the participants stated that they did not want to entrust themselves to physicians who had not seen cadavers and did not have enough opportunity for working on cadavers.

Conclusion: We think that the awareness of people should be increased by more effective ways to make them think more positively about cadaver donation. They should utilise the media effectively to raise the consciousness of society by providing them with information that can change the perspective of people about cadaver donation. Related course subject matters should be added into the syllabus of health-related faculties of University. Anatomists should provide training for hospital staff (physicians, nurses, etc.) to ensure that patients and patient relatives visiting hospitals can be informed about cadaver donations.

Keywords: gross anatomy education, gross whole body donation, willingness to donate body

P-14

Keratinized attached gingiva deficiency and surgical treatment: case report

Keskin M[1,2], Çinpolat B[1]

[1]Altınbaş University, Istanbul,Turkey; [2]Private Periodontist, Istanbul, Turkey

Gingiva, one of the soft tissues that forming the oral cavity, is composed of a tightly fibrous tissue covered with keratinized epithelium. The free part of the gingiva surrounding the teeth is called the marginal gingiva, and the part of the processus alveolaris which adheres tightly to the periosteum is called the attached gingiva. Anatomically, the width and keratinization rate may vary from person to person. Since the periodontium plays a protective role from external forces and microorganisms, the presence and function of attached gingiva is very important*. In this study, we present a case of vestibular gingival recession in conjunction with microbial dental plaque accumulation and periodontal surgical approach to form an attached gingiva on the anterior surface of mandibular right central incisor tooth. A 25-year-old female patient with a complaint of gingival recession was found to have gingival defect on the anterior surface of the lower jaw right central incisor and microbial dental plaque accumulation around the marginal gingiva was observed. Mucogingival surgery was recommended for treatment of the patient. The free gingival graft was harvested from the right upper jaw keratinized palatal mucosa and placed in the recession area under local anesthesia. Sutures were taken 10 days later and the healing process was followed.It is known that lack of attached gingiva due to various reasons is a threat to the destruction of periodontal tissues due to the increase in microbial plaque accumulation and the lack of resistance to functional forces. Presence and function of attached gingiva is very important for the maintenance of periodontal health. Mucogingival surgery is a significant option for the recovery of attached gingiva.

Keywords: adherence gingival defect, mucogingival surgery, periodontitis, gingival extraction

P-15

A study for the antropometric measurement of calcaneus

Alpay M[1], Yeğin B[2], Gören H[3], Yücel F[2], Özden H[2]

[1]Department of Anatomy, Faculty of Medicine, Tekirdağ Namık Kemal University, Tekirdağ, Turkey; [2]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey; [3]Department of Anatomy, Faculty of Medicine, Düzce University, Faculty of Medicine, Düzce, Turkey

Objective: Calcaneus or heel bone is the largest and most stable tarsal bone. The calcaneus, which forms the heel, plays an important role in the transmission of force. Therefore, anthropometric values of calcaneus are important for anatomy, orthopaedic surgery, kinesiology, physical therapy and rehabilitation departments. The purpose of this study was to contribute the anthropometric index repository about calcaneus.

Methods: In this study, a total of 150 calcaneus, 73 right and 77 left, were used without sex discrimination. Calcaneus length, calcaneus width and calcaneus height were measured and calcaneus indices and calcaneus types were determined. Calcaneus typing was done as previously described by Gupta et al.

Results: The maximum length of the right calcaneus was 75.62±0.55 mm; the minimum width is 51.23±0.81 mm and the body height is 26.74±0.3 mm. The maximum length of the left calcaneus was 76.72±0.52 mm; the minimum width was calculated as 49.91±0.74 mm and the body height as 27.47±0.27 mm. In our study, calcaneus length, calcaneus width and calcaneus height were measured and calcaneus indices and calcaneus types were retrospectively analysed.

Conclusion: In our study, calcaneus length, calcaneus width and calcaneus height were measured and calcaneus indices and calcaneus types were retrospectively analysed.

Keywords: anthropometry, calcaneus, anatomy, human

P-16

Parameters of vertebrae

Yeğin B[1], Gören H[2], Alpay M[3], Özden H[1]

[1]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey; [2]Düzce University, Department of Anatomy, Faculty of Medicine, Düzce, Turkey; [3]Department of Anatomy, Faculty of Medicine, Tekirdağ Namık Kemal University, Tekirdağ, Turkey

Objective: The spine functions in the movements of the head, neck and torso. The shapes of the vertebrae vary as the weight increases from top to bottom. A typical vertebra consists of a round body at the front and an vertebral arch at the back. Arch surround the area called the foramen vertebral. The parameters of vertebral artery were evaluated in our study.Bone remnants at the scene of the forensic cases give information about gender, height and age. As a result, vertebrae have become an important source of information for forensics.

Methods: This study was carried out in a hundred and eighty unknown-gender vertebras at Anatomy Laboratory of Medical Faculty of Eskişehir Osmangazi University. Morphometric measurements were taken from anatomical structures of the vertebrae. The measurements were evaluated statistically. The averages of the morphometric measurements were taken.

Results: In comparison of the different regions, measurements belong to cervical and thoracic vertebras were significantly different ($p<0.05$). Also, the measurements of thoracic and lumbar vertebras were different between the left and the right side ($p<0.05$). The measurements of cervical and lumbar vertebras were different ($p<0.05$). Vertebrae are rarely used bones in gender determination. Forensic cases are the bones found most at the scene. This increases the importance of vertebrae in gender determination.

Conclusion: As a result; a detailed morphometric examination is required for the design of appropriate implants for vertebral-based surgical interventions. In addition, the variability and the mean values of the morphometric measurements must be known in order for anomalies to be detected during surgical interventions. We believe that the data we obtained as a result of the study will be beneficial to the places related to these issues.

Keywords: vertebra, morphometry, lumbar

P-17

Classification of mandibular lingual foramina in a group of Turkish Cypriot population: a retrospective CBCT study

Çerçi Öngün B[1], Kurbanova A[2], Aksoy S[2], Akçay Çİ[3], Orhan K[4]

[1]Department of Anatomy, Faculty of Medicine, Eastern Mediterranean University, Famagusta, Turkish Republic of Northern Cyprus; [2]Department of Radiology, Faculty of Dentistry, Near East University, Nicosia, Turkish Republic of Northern Cyprus; [3]Department of Biostatistics, Faculty of Medicine, Near East University, Nicosia, Turkish Republic of Northern Cyprus; [4]Department of Dentomaxillofacial Radiology, Faculty of Dentistry, Ankara University, Ankara, Turkey

Objective: The aim of this study is to assess the visibility and the location of the lingual foreman and to classify the lingual foramen according to age and gender using cone-beam computed tomography (CBCT).

Methods: Both the right and left sides were retrospectively studied in 329 patients (n=658). All records of the patients between 18–85 ages who applied to the Near East University School of Dentistry Department of Radiology between 2011–2016. Axial, sagittal, cross-sectional, and panoramic images were evaluated, and three-dimensional images were reconstructed and evaluated as necessary. The morphology, course, and localization of mandibular lingual foramen were evaluated.

Results: The incidence of the lingual foramen is found to be 99.4%. In most of the patients (82.7%) One or Two lingual foramina was detected. Midline type of lingual foramina has the highest incidence (83%) and it is followed by Midline and Paramedian type (15.2%). More than half of the patients (69.9%) are found to be in Class 2 and Class 4 Midline Classification. A significant difference is detected between Midline type and Midline and Paramedian type in terms of number of lingual foramina ($p<0.001$). The 35–54 age group has significantly higher numbers of Lingual Foramina than the patients who are older than 55 years ($p=0.002$).

Conclusion: A high proportion of mandibular lingual formanes can be detected by CBCT imaging. Clinicians should be careful during implant or bone surgery procedures to avoid possible complications, with special emphasis on patient age and dental status, using this imaging modality that involves use of less radiation.

Keywords: incisive canal, implant, inferior alveolar nerve, lingual foramen

P-18

A rare case: high branching of the deep brachial artery

Çerçi Öngün B[1], Verimli U[2], Yalın A[3], Şehirli ÜS[2]

[1]Faculty of Medicine, Eastern Mediterranean University, Famagusta, Turkish Republic of Northern Cyprus; [2]School of Medicine, Marmara University, Istanbul, Turkey; [3]Faculty of Medicine, Eastern Mediterranean University, Famagusta, Turkish Republic of Northern Cyprus

Objective: The subclavian artery in the neck becomes the axillary artery at the lateral margin of the first rib and passes through the axilla. It consists of three parts. The first part has one branch; the superior thoracic artery. The second part has two branches thoraco-acromial and lateral thoracic artery. The third part has three branches ; subscapular artery, the posterior and the anterior humeral circumflex arteries. The axillary artery then becomes the brachial artery at the inferior margin of the teres major muscle

Methods: During the routine dissection a variation was noticed in the branching pattern of axillary artery.

Results: The variation was observed on the left side of a male cadaver aged 63. After removing the skin and fascia in the axilla, pectoralis minor was retracted to have the full view of the axillary artery. The branching of the first and the second parts of the axillary artery were normal. At the third part of the axillary artery a common trunk was observed. This common trunk gave branches to subscapular artery, anterior and posterior humeral circumflex artery and then continued as deep brachial artery. Further course and branching pattern of the deep brachial artery was observed regular.

Conclusion: The branching pattern of the axillary artery varies with race, sex and ethnic groups.Various authors have reported different branching patterns from the one that is normally seen. The knowledge about such variations are crucial in various clinical procedures performed by the vascular surgeons, radiologists and clinical anatomists.

Keywords: axillary artery, common trunk, variation, deep brachial artery

P-19

Effects of postnatal rearing conditions on organ weights in rats

Erçelen B[1], Çorumlu EP[2], Ulupınar E[1,2]

[1]Department of Anatomy, Eskişehir Osmangazi University, Faculty of Medicine, Eskişehir, Turkey; [2]Interdisciplinary Neuroscience Department, Institute of Health Sciences, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: It is well known that postnatal rearing conditions can affect development rate of animals. This study aims to investigate the effects of environmental conditions on growth parameters of animals and provide quantitative data onweight of some organs including brain, adrenal, liver and spleen, in addition to their ratios to body weights.

Methods: Male Sprague-Dawley rats (n=12) were divided into maternal separation (MS) and environmental enrichment (EE) groups. Animals in MS group were separated from their dam and littermates between postnatal (P) day 2 until weaning (P21) for 3 hours daily. Whereas animals raised in EE conditions were kept in a large cages connectedto each other and equipped with various stimulating objects (stairs, running wheels, toys, ropes, chains). After weaning, animalswere exposed to forced swim test and according to their immobilization period they were divided into high- and low-mobilized groups. Body weight and length measurements were obtained to calculate body mass indices of animals, and following intracardiac perfusion, gross weights of liver, spleen, left and right adrenals were recorded.

Results: Total body weight ($p<0.001$) and brain weight ($p<0.05$) of animals raised in EE condition were significantly higher than that of MS group. Two-way ANOVA results showed that in high-mobilized EE animals, liver, spleen and right adrenal weights are significantly ($p<0.05$) higher than low-mobilized MS animals. However, no significant difference was observed in adrenal to body weight ratio.

Conclusion: Our results suggest that enriched environment positively affectedtotal body and brain weight of animals compared to animals exposed to maternal separation. The weight of hematopoietic organs such as liver and spleen was negatively affected by separation conditions. Although it has been shown that adrenal to body weights ratio reflects the stress levels of animals, unchanged adrenal to body weight ratio suggest that our rearing conditions was not severely affected cortisol levels of animals.

Keywords: maternal separation, environmental enrichment, postnatal rearing

P-20

Metopic suture

Kamaşak B, Esersoy S, Aycan K

Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey

Objective: The skull bones merges through the joints called suture. Frontal bone is two parts in intrauterine life. After that, these two parts become a single bone by merging at 6–8 years of age. Sometimes the joints of these two parts are completely ossifiede, sometimes it can't be ossified and a permanent suture may appear between them. This suture is called metopic suture. This suture is in the middle of the os frontale and beginning from nasion to bregma, continuing its existence along to life. The aim of this work wasto reveal the variations of these metopic sutures as well as the frequency of occurrence.

Methods: Our research was carried out on 57 skulls in Erciyes University Faculty of Medicine Anatomy Laboratory. If any, incidence, length, and other variations of the metopic sutures found were examined. The percentages of the obtained data and the average lengths of the measured length values were calculated.

Results: Examined of the 57 skulls were detected 5 (8.77%) metopic sutures.4 of the skulls which has this suture is starting from nasion and merging with sagittal suture. The average length of this metopic sutures were calculated as 12.13 cm. It was found that the middle part of the metopic suture was missing from one of the skulls. Examined of the 15 (26.32%) skulls, were found to have supranasal suture which is a partial remnant of metopic suture. The average length of these supranasal sutures were calculated as 0.89 cm.

Conclusion: It is important to know well the variations of the head bones according to from the viewpoint of radiologists, forensic anthropologists, and neurosurgeons. We think that this study will contribute to the existing knowledge about metopic suture.

Keywords: metopic suture, supranasal suture, frontal bone, Bregma

P-21

Evaluation of glenohumeral joint range of motion bilaterally in volleyball players: a preliminary study

Pelin C[1], Zengin Y[2], Hazır S[3], Tüzken İ[4], Kıbrıs UE[4], Özkan EP[4], Şahin ÖC[4], Gürelik T[4], Keskin S[4], Eybatova L[4]

[1]Department of Anatomy, Faculty of Medicine, Başkent University Ankara, Turkey; [2]Department of Biostatistics, Faculty of Medicine, Başkent University, Ankara, Turkey; [3]Sport Science Department, Faculty of Health Sciences, Başkent University, Ankara, Turkey; [4]Faculty of Medicine Phase II Student, Başkent University, Ankara,Turkey

Objective: Shoulder injury is a serious problem in overhead sports. In order to prevent the injuries due to exercise a detailed knowledge on shoulder anatomy is required and the range of motion should be evaluated. Not only humerus but scapula as well takes part in the abduction of the arm. Especially for the hyperextension of the arm scapula shows an upward rotation. It is known that range of scapular movement changes in athletes. Such changes may increase the performance of the athlete. However, it may cause an injury if the movement at the level of the joint is exaggerated. The main aim of the study is to evaluate the scapular posture and movements of scapula bilaterally in athletes and to compare them with those of sedentary individuals. The difference between dominant and non-dominant sides related with scapular movements and the range of motion in shoulder joint is also evaluated both in athletes and sedentary individuals.

Methods: 15 licensed volleyball players and 30 sedentary individuals were participated to the study. All the participants were female. None of the participants had a shoulder injury and a surgical approach to shoulder joint.

Results: Scapular upwards rotation, posterior shoulder tightness, internal and external range of rotation and the lateral

movement of scapula were evaluated. Passive internal rotation range was significantly less in the athletes when compared with sedentary individuals both for dominant and non-dominant sides. On the other hand no side difference was observed related with external rotation range in sedentary people. However it was observed significantly higher in the dominant side in volleyball players. No side difference was observed both in athletes and sedentary group related with posterior capsule tightness. No difference was observed between athletes and sedentary group as well.

Conclusion: Even though the sample size is not large enough the results of the study indicates an adaptation procedure caused by exercise.

Keywords: volleyball, glenohumeral joint, range of motion

P-22

Morphometric study of nutrient foramina in human humerus, radius and ulna dry bones

Bozer C, Yılmazer Kayatekin AZ, Çıkmaz S

Department of Anatomy, Faculty of Medicine, Trakya University, Edirne, Turkey

Objective: Nutrient foramina (NF) has crucial importance for the nutrient artery to supply blood to the bones. This study investigates the number, position and transverse diameters of the nutrient foramina in the humerus, radius and ulna of dry bones of Turkish origin.

Methods: 64 humerus, 37 radius and 26 ulna dry bones were evaluated morphometrically in Trakya University, Faculty of Medicine, Department of Anatomy. Position, number and transverse diameter of nutrient foramina were measured. Foraminal Index (is calculated by dividing the distance between proximal end of the bone and foramen nutricium to the total bone length) is calculated for each of the bones.

Results: The number of NF is single in 81% of the humerus bones. In 80% of the humerus bones, the location of NF is on the anteromedial surface. The mean transverse diameter of NF is 1.2 mm and the mean FI is 55.47 for humerus bones. In all radius bones the number of NF is single and their location is on the anterior surface. The mean transverse diameter of NF is 0.98 mm and the mean FI is 34,60 for radius bones. The number of NF is single in 92% of the ulna bones and their location is on the anterior surface in 89%. The mean transverse diameter of NF is 1.24 mm and the mean FI is 37.16 for ulna bones.

Conclusion: Knowledge about position, number and morphometric features of the NF is of crucial importance during recovery of the fractures of long bones and any surgical or orthopaedic procedures of limbs.

Keywords: humerus, radius, ulna, morphometry, foramen nutricium

P-23

Anomalous of right coronary artery: case report

Solmaz E[1], Fazlıoğulları Z[1], Koplay M[2], Karabulut AK[1], Ünver Doğan N[1]

[1]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [2]Department of Radiology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: Right coronary artery usually arises from the right sinus aorta (sinus of Valsalva). In right coronary artery anomalies with the incidence of 0.09–0.46%, high take-off type is very rare.

Methods: A 16-year-old male patient was admitted to the Selçuk University Faculty of Medicine Hospital with a chest pain complaint and vascular structures of the heart were visualized by multidetector computed tomography coronary angiography and 3-dimensional volume rendering techniques.

Results: An origin anomaly of the right coronary artery was detected. It was observed that right coronary artery, was coming out in a narrow-angle at the originated from the initial part of the ascending aorta, in the superomedial adjacency of the right sinus of Valsalva. The lumen diameter, wall, and course were normal. In this type of anomalies, computerized tomography is more advantageous than classical angiography because it is both more clearly diagnosed and not interventional. Bicuspid aortic valve anomaly may be seen together in such patients. Arrhythmia, syncope, myocardial ischemia or sudden death may occur despite the non-hemodynamic severity in the anomalous with high take-off type which is difficult to catheterize.

Conclusion: It is important to evaluate the artery in the preoperative period for aortotomy operation at the aortic valves surgery and ascending aorta replacement.

Keywords: right coronary artery, anomaly, computed tomography

P-24

Hiatus sacralis anatomy and morphometry for caudal epidural blocking in human sacrum

Akın D[1], Aydın Kabakçı AD[1], Alpa Ş[2], Yılmaz MT[1]

[1]Department of Anatomy, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [2]Department of Anatomy, Faculty of Medicine, Karatay University, Konya, Turkey

Objective: Hiatus sacralis located on dorsal face of the sacral bone is an important formation for caudal epidural blockade. The variations on the sacral bone located at inferior side of the vertebral column are important for surgical and anesthesia procedures. The aim of the present study was to perform morphometric measurements of the dorsal face of the human sacrum and to reveal the variations of bone formations.

Methods: The present study was performed on human sacrum within bone collection of Anatomy Departments of Karatay

University, Faculty of Medicine and Necmettin Erbakan University, Meram Faculty of Medicine. Photos of the sacrum was taken and typed both on computer and manually. Furthermore, morphometric measurements of the present study was performed by a caliper. Morphometric measurements were performed from important anatomic points on hiatus sacralis and facies dorsalis on 86 dried sacrum samples (36 41.9% males and 50 58.1% females). Digital camera and caliper were used in the study. Height, width and depth of hiatus sacralis (HSH, HSW, HSD) as well as transverse and vertical diameters of facies auricularis (TDA, VDA) were measured. Moreover, hiatus scaralis was typed. Hiatus sacralis was divided into 10 types and canalis sacralis was divided into 9 types. The results obtained were evaluated by SPSS 21.0 program.

Results: The most common shape of canalis sacralis and hiatus sacralis was detected as the U-shape and the prevalances were 26 (30.2%) and 11 (12.8%), respectively. Furthermore, mean height, width and depth of the sacral hiatus in male and female samples were 27.47±8.89 mm, 89 mm, 10.45±3.40 mm, 18.15±7.37 and 30.22±7.89 mm, 10.70±2.65 mm, 20.60±7.02, respectively. Similarly, transverse and vertical diameters of facies auricularis were 37.19±5.37 and 54.61±5.93 mm on the right side; and 38.29±5.91 and 55.68±7.32 mm on the left side. Noreover, there was not any statistically significant difference between measurements of the sacral hiatus of males and females; and right and left sides of vertical and transverse diameters of auricular faces (p>0.05).

Conclusion: We believe that the data obtained from this study would be useful to detect exact location of epidural blocking and tumor as well as abnormal bone growths.

Keywords: hiatus sacralis, morphonetry, variation, faciesauricularis, sacrum

P-25

In anatomy laboratory as a dissection material use of cow eye

Kastamoni YY, Dursun A, Kaçaroğlu D, Yazar İyigün K

Department of Anatomy, Faculty of Medicine, Süleyman Demirel University, Isparta, Turkey

Objective: In anatomy training, cadaver is one of the most important educational materials. It has been reported that the number of students per cadaver is high in studies conducted. This situation caused the search for alternative educational materials in anatomy training. In our work, cow eyes were used at student and assistant education because it is easy to access, cheap and similar to the human eye. It is aimed, to increase the students' success in anatomy lesson and to provide learning better anatomical structures. In addition, it is targeted to give the skill of dissection.

Methods: Our study carried out at second year students form Süleyman Demirel University Faculty of Medicine. It was selected 15 students from volunteers. An eye and surgical instruments were given to each student. Firstly, extraocular structures were dissected and extraocular muscles were identified. Similarities and differences with human anatomy were evaluated. Then, eyeballs were cut in the coronal plane and sagittal plane. And the internal structure of the eyeball was evaluated in comparison with human anatomy

Results: When the eyeball was evaluated, it was determined that it was similar to a human eye in a big rate. According to the feedback from the students, cow eye was as an good dissection material for anatomy education.

Conclusion: According to the feedback from the students, cow eye was as an good dissection material for anatomy education.

Keywords: cow eye, dissection material, anatomy

P-26

The morphometric development of fetal cadavers tongue

Kastamoni YY[1], Dursun A[1], Kaçaroğlu D[1], Yüzbaşıoğlu N[1], Ertekin T[2]

[1]Department of Anatomy, Faculty of Medicine Süleyman Demirel University, Isparta, Turkey; [2]Department of Anatomy, Faculty of Medicine Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey

Objective: The tongue is a spesific organ takes the sense of taste. It consists of striated muscle and mucous membrane. It also helps speech, chewing and swallowing functions.We aimed to explain some morphometric features of fetal cadaveric tongues in our study.

Methods: A total of 45 fetus tongues, aged between 17 and 40 weeks (25 male, 20 female), were studied. Fetus was divided into 3 groups: 2nd trimester, 3rd trimester and full term. For each tongue, the length, width, area, tongue-frenulum linguae length and terminal sulcus angle were measured with the Image J program. The obtained data were analyzed with the SPSS 20 for Windows program.

Results: It has been observed that the length, width and area of the tongue increase during the trimester. There was statistically significant difference among the trimesters. There was no statistically significant difference among the trimesters for terminal sulcus angle. The length of the tongue - frenulum linguae differed only in the 2nd trimester between the groups. There was no significant difference in gender between all parameters.

Conclusion: Tongue development affects the development of other oral-craniofacial structures. Our work has provided important data on the morphometric development of the tongue. These data are thought to be useful in determining the anomaly and variations of the tongue.

Keywords: tongue development, morphometry, fetal tongue

P-27

Vallate papillae anatomy in fetal cadavers

Dursun A, Kaçaroğlu D, Kastamoni YY, Öztürk K, Albay S

Department of Anatomy, Faculty of Medicine, Süleyman Demirel University, Isparta, Turkey

Objective: Vallate papillae are the largest papillae of the tongue lined up on the front of the terminal sulcus. The number of these papillae, which are more sensitive to bitter, varies from 7 to 12.There are very few studies about papillae vallatae in the fetus tongue in the literature. We aimed to investigate the number and distribution of vallate papillae in fetal cadavers.

Methods: 45 fetus tongues (25 male, 20 female), aged between 17 and 40 weeks, were studied. Photographs of tongues were taken using Euromex stereo microscope and vallate papillae number and distribution were evaluated.

Results: In 7 fetus tongues, vallate papillae could not be distinguished clearly. In 38 fetuses, vallate papillae were observed at least 5 and at most 12. The mean number was calculated as 9±2. As the tongue grew, the arrangement and distribution of vallate papillae changed.

Conclusion: The normal development of vallate papillae is associated with tongue development. Differences in the anatomy of vallate papillae may cause differences in taste physiology.

Keywords: papillae vallate, papilla anatomy, fetal anatomy

P-28

Thumb duplication: case report

Akın D[1], Aydın Kabakçı AD[1], Öztürk M[2], Büyükmumcu M[1]

[1]Department of Anatomy, Meram Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey; [2]Department of Radiology, Meram Faculty of Medicine, Necmettin Erbakan University, Konya

Objective: Polydactilia, duplicatons of the thumb (preaxial) is the most common congenital abnormality of the upper limb with an incidence of 0.08 per 1,000 live birth.

Methods: In the present study, X-ray image of a girl born in April, 2017 obtained from Radiology archive of Sulcuk University, Faculty of medicine was used.

Results: There was not any variation detected on the left hand of the patient; a congenital deformation on the right thumb was observed; she cannot use her right hand well due to excessive finger. The patient was classified as up to proximal bone level of radial polydactilias, common joint on the base and bifid proximal phalanx, type III according to Wassel classification. Lateral proximal phalanx length of the thumb was measured as 12.5 mm and 10.9 mm on the medial side.

Conclusion: Polydactilia is the most common congenital abnormality of the hand. Although polydactilia cases associated with the thumb are called as preaxial polydactilia, use of the terms preaxial, postaxial was decided in Congenital Hand Committee of International Hand Surgery federation. Polydactilias associated with the thumb are called as radial polydactilia. It is the most common classification of polydactilias according to Wassel classification. This classification depends on the proximal bone level involved and existence of joint involvement on the base; if the joint is connected on the base, it is called bifidus; if seperated, it is called as duplicated. Accordingly; type I is bifidus distal phalanx; type II is duplicated distal phalanx; type III is bifidus proximal phalanx; type IV is duplicated proximal phalanx; type V is bifidus metacarpal; type VI is duplicated metacarpal. Beyond these six levels, triphalangial formation on one of the duplicated fingers is called as Type VII. The most important factors affecting treatment of radial polydactilia include level of duplication, degree of equal development of the duplicated fingers, comparison of dimensions and form between the dominant finger and intact hand thumb, joint mobility and stability; and the anatomic elements involved. Consequently, radial duplications of adults which are not treated timely may present atypical settlements and this may affect classical treatment techniques. To decide on which finger will be excised on the medial or lateral side is very important in lateral polydactilia cases. Surgery for polydactilia is suggested to be performed under 1 year (9 to 12 months) in consideration of remodelling capacity of the bone at that age.

Keyword: thumb duplication, polydactilia, radiology

P-29

Anatomic importance of internal carotid artery in endoscopic skull base surgery

Sindel M[1], Çakın H[2], Alkan E[1], Dablan A[3], Sindel T[3]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University Antalya, Turkey; [2]Department of Neurosurgery Faculty of Medicine, Akdeniz University Antalya, Turkey; [3]Department of Radiology, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: Internal carotid artery (ICA) seperated as end branch of common carotid artery at the level of 4th cervical vertebra and move to upwards, it travels through the cavernous sinus in the middle cranial fossa via carotid canal. ICA was defined 6 segments as parapharyngeal, petrous, paraclival, parasellar, paraclinoid ve intradural according to the anatomical structures in the endoscopy. Bouthillier et al. are examined the artery as seven segments, according to their angiographic appearance and neighbourhood relations; cervical, petrous, laserum, cavernous, clinoid, ophthalmic and communicating. In our study, we aimed to obtain preoperative anatomic information with cerebral measurement and classification of the angle of the radiological cavernous segment bend of the ICA, which is the angle between the endoscopic parasellar and paraclival segments.

Methods: 100 cerebral MR angiograms were obtained by 3D-TOF technique reconstruction and different sagittal slices including the right and left ICA were taken out. ImageJ software was used to measure the angle between paraclival and

parasellar segments and the angles were classified by types in this MR slices.

Results: The mean angle was 80.16±31.32. This angle was determined as a minimum of 110 maximum of 1530. In the unilateral evaluation of the types, TypeI 45.5%; TypeII 26%; TypeIII 28.5, also in the bilateral evaluation of types; TypeI 36%; TypeII 11%; TypeIII 24%, TypeIV 29% was found.

Conclusion: The damage to the ICA is among complications that are avoided, during transnasal endoscopic interventions in various regions of the skull base. We believe, knowing the different routes of ICA and bordered areas by artery will quide the choise of surgical intervention points of endoscopic operations and also will prevent the complications that may develop.

Keywords: internal carotid artery, endoscopy, paraclival, parasellar

P-30

Morphological study on occipital condyle

Alkan E, Karakoyun ZN, Öz N, Süzen LB

Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: On the lower surface of the occipital bone, the bone protrusions adjacent to the foramen magnum and on either side are called occipital condyles (OC). OC is oval but it has been mentioned in some studies that may have different shapes. People with the symmetrical shape of right and left condyles do not have difficulty in movements, but people with asymmetrical shapes may have strain in movements. OC extends obliquely, distance between the anterior ends is shorter than distance between the posterior ends. Hypoglossal canal crosses condylus occipitalis from the top. Atlantooccipital joint is seen between the articular facet of OC and the superior articular facet of atlas, and connects the skull with columna vertebralis. In this study, we aimed to provide anatomical contribution to the determination of direction, angle and position during interventional procedures, by knowing the dimensions and shape of occipital condyles.

Methods: The study performed in right and left occipital condyles of 56 dry human skulls, whose gender is unknown, in Akdeniz University Faculty of Medicine, Department of Anatomy. The skulls, which had damaged or deformed, were excluded from study. All measurements were made by a single investigator using digital caliper. Length, width, height, anterior intercondylar distance (AICD), posterior intercondylar distance (PICD) of OC was measured and shape was evaluated.

Results: We evaluated shapes of OC as 16 rhomboid, 26 oval, 49 oblong, 21 cresent. 39 of the skulls have symmetrical, 17 asymmetrical pair of condyles. The average measurements and standart deviations were 23.06±2.55 mm in length, 12.50±1.26 mm in width, 9.05±1.07 mm in height, 23.31±2.81 mm in AICD and 39.44±3.84 mm in PICD.

Conclusion: OC is part of the craniovertebral region, which has importance for neoplastic, degenerative and traumatic diseases. We believe that knowing shapes and dimensions of OC will guide the planning of preferred approach in surgery and will minimize complications.

Keywords: occipital condyle, atlantooccipital joint, craniovertebral surgery, transcondylar approach

P-31

The effect of hypermobility on the pain and quality of life in young adults

Zeren E[1], Maral F[1], Parlak M[1], Kirazlı Ö[2], Boracı H[2], Arifoğlu Karaman Ç[3], Arifoğlu Y[1]

[1]Department of Anatomy, School of Medicine, Bezmialem Vakıf University, Istanbul, Turkey; [2]Department of Anatomy, School of Medicine, Marmara University, Istanbul, Turkey; [3]Baltalimani Bone Diseases Education and Research Hospital, Health Science University, Istanbul, Turkey

Objective: Joint hypermobility is described as the excessive range of motion of a joint. It is more common in the youngsters since the joint laxity decreases with age. Hypermobility is related to fibromyalgia and musculoskeletal injuries and may significantly impair the quality of life by causing pain in various regions of the body.Aim of this study was to examine the prevalence of hypermobility in young adults and investigate its relationship with pain in various regions of the body and quality of life.

Methods: 225 volunteers [164 females (64%), 91 males (36%)] aged between 17–23 years (mean age of 19.71±1.10) were included in the study. Subjects were classified as hypermobile or normal according to Beighton Hypermobility Criteria. Presence and localization of chronic pain was identified by using Nordic Pain Questionnaire, and quality of life was identified by SF-36 Questionnaire. Pain presence in the 9 regions of the body was compared between hypermobile and normal subjects using Chi-square test and SF-36 scores were compared using Independent Samples T-test.

Results: According to Beighton Hypermobility Criteria 119 subjects (46.7%) had hypermobility. In terms of the highest pain prevalence of pain in a body region, 79% of hypermobile subjects and 74% of normal subjects reported that they experienced pain at least once on back region in past 12 months. Pain prevalence in neck, shoulder, back, elbow, wrist, waist, hip, knee or ankle region did not differ between hypermobile and normal subjects ($p>0.05$). Physical function, role limitation-physical, role limitation-emotional, energy, mental health, pain and general health subgroup scores and physical and mental component scores were significantly lower in hypermobile subjects compared to normal subjects ($p<0.05$). There was no significant difference in quality of life scores between female and male hypermobile subjects ($p>0.05$).

Conclusion: Pain prevalence in different body regions did not differ between normal and hypermobile subjects whereas the quality of life was significantly impaired in hypermobile subjects. Hypermobility is a substantial anatomical finding in young adults and should not be disregarded. Education about hypermobility and emotional support is important in these individuals. Also

encouraging these individuals about strengthening and proprioception exercises may contribute to their quality of life.

Keywords: anatomy, joint laxity, hypermobility, pain, quality of life

P-32

Interscalene brachial plexus block in patient wih spina bifida: case report

Balcı MA[1], Şimşek Ç[1], Atay E[2], Tahta Y[1], Ertekin A[3]

[1]Step 3 Intensive Care Unit, Education and Research Hospital, Niğde Ömer Halisdemir University, Niğde, Turkey; [2]Department of Anatomy, Faculty of Medicine, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey; [3]Department of Emergency, Afyonkarahisar State Hospital, Afyonkarahisar, Turkey

Objective: Plexus brachialis is responsible for the entire motor function and most of the sensory function of the upper extremity. Anesthesia of the upper extremity and shoulder region can be achieved by blocking the brachial plexus from different sites. Since the interscalene block success rate is high (there is little side effect and it is easy to implement), its use in shoulder and upper limb surgical is becoming increasingly widespread. In this case, we present a patient who is implemented interscalene brachial plexus block using Prilocain-Bupivacain with stimplex.

Methods: The case is a 26 year-old male who is implemented shunt operation due to hydrocephalus which is a spina bifida. At the same time, the patient is dialyzed 2 days a week for chronic renal failure (CRF).

Results: The patient's micrognathic thyroglossal distance was short, and the mallampati score was 4. A 26-year-old male patient was prepared for surgery with intramedullary cement augmentation and screw stabilization with the right humerus fracture. The patient had hydrocephalus, CRF, pigeon breast, asthma, and difficult intubation criteria. Therefore, when considering the risks, interscalene brachial plexus block was preferred to avoid multiple drug use.

Conclusion: We suggest that regional anesthesia is a good alternative to other anesthesia in high-risk patients.

Keywords: plexus brachialis, spina bifida, anesthesia

P-33

The effects of different formulations of doxurobicin, the chemotherapeutic agent, on apoptosis

Uluçam E[1], Bakar E[2], Bayram E[3], Demirkıran O[4]

[1]Department of Anatomy, Faculty of Medicine, Trakya University, Edirne, Turkey; [2]Department of Basic Pharmaceutical Science, Faculty of Pharmacy, Trakya University, Edirne, Turkey; [3]Department of Pharmaceutical Nanotechnology, Institute of Health Sciences, Trakya University, Edirne, Turkey; [4]Department of Pharmacognosy, Faculty of Pharmacy, Trakya University, Edirne, Turkey

Objective: Doxorubicin (DOX), which is used as a chemotherapeutic agent, has been reported to induce apoptosis by inhibiting topoisomerase II enzyme by forming DNA intercalation and stopping cell cycle by preventing DNA replication in the cell. In our study, it was aimed to investigate the effects of different formulations of DOX on some apoptotic markers in tumor tissue of Erlich acid breast tumor (EAT) generated mice.

Methods: Bulb-c mice weighing 30–35 g were divided into four groups, breast tumor (MT), doxorubicin (DOX), liposomal DOX (LIPDOX) and PEGylated liposomal DOX (PEGDOX) (each group n=8). 200 µL EAT cells were injected subcutaneously into the left legs of the animals and a period of 10 days for tumor formation was waited. At the end of the 10th day, spectrophotometrically calculated loading efficiency application dose (0.18 mg) was injected intraperitoneally for one week respectively on days 1, 2, 4 and 6, taking the animal weights into account. Control and tumor groups were sacrificed under anesthesia at the end of the 10th day and the treatment groups were sacrificed under anesthesia at the end of the treatment period. By qRT-PCR analysis, apoptotic proteins encoding genes and TNF and proliferative factor PCNA expression levels were examined using cDNA from isolated total RNA. Expression quantities of target genes were normalized using GAPDH as an internal gene.

Results: When the treatment groups were compared with the MT group, the difference in the expression levels of P53, P21, PCNA and TNF were significant in all groups ($p<0.01$). There was no change in PEGDOX group according to MT group in CAS8 expression levels ($p>0.05$). CAS8 expression was significantly increased in DOX and LIPDOX groups compared to MT group ($p<0.01$). The JNK level difference between the LIPDOX group and the MT group was not significant ($p>0.05$). There was a significant difference in JNK levels in the DOX and PEGDOX groups ($p<0.01$). Compared with DOX and LIPDOX groups, the expression of P53, JNK, PCNA and TNF increased in the LIPDOX group ($p<0.01$). CAS8 expression level was significantly lower ($p<0.01$). CAS8 expression level was significantly lower ($p<0.01$). When DOX and PEGDOX, LIPDOX and PEGDOX groups were compared, it was found that CAS8 level decreased and other markers increased ($p<0.01$).

Conclusion: These results suggest that the different formulations of DOX used as chemotherapeutic agents have different effects on the expression levels of apoptotic markers.

Keywords: doxorubicin, apoptosis, breast tumor

P-34

Evaluation of capsula interna morphometry on MR images in normal population

Turamanlar O[1], Bilir A[1], Horata E[2], Ertekin T[1], Özer Gökaslan Ç[3], Emeksiz H[4]

[1]Department of Anatomy, Faculty of Medicine, University of Afyonkarahisar Health Sciences, Afyonkarahisar, Turkey; [2]Atatürk Vocational School of Health Services, University of Afyonkarahisar Health Sciences, Afyonkarahisar, Turkey; [3]Department of Radiology, Faculty of Medicine, University of Afyonkarahisar Health Sciences, Afyonkarahisar, Turkey; [4]University of Afyonkarahisar Health Sciences, School of Health, Afyonkarahisar, Turkey

Objective: Capsula interna is a white matter consisting of efferent and afferent fibers in the shape of a bundle extending vertically that connects with the cortex with the brain parts in the lower levels and the medulla spinalis. Crus anterior and posterior are divided into two compartments. The curvature between the arms is the genu capsula interna. In our study, we aimed to measure the diameters of parts of the internal capsule (anterior limb, posterior limb and genu) and the external angle on the transverse plane in healthy individuals.

Methods: MRI images of 80 female and 37 male people who with no pathology in cranial MRI between 18 and 65 years of age were used in our study. Measurements were determined bilaterally diameters of crus posterior, crus anterior and genu on capsula interna and the outward-facing angle of the intersection of the genus of the line passing through the middle of the crus anterior and crus posterior.

Results: There was no statistically significant difference when compared bilateral measurements of capsula interna in all individuals ($p>0.05$). It was found that the right and left genu angles of women were wider than men when the measurements of women and men were compared ($p<0.05$). In the literature, the morphometric differences of the pathways passing through the internal capsule were evaluated according to the dominant extremity, however, the diameters of the capula interna in the horizontal plane has not been mentioned. We have found that this angle is 122° in our measurements, even though there are sources saying that the genu angle is around 90°.

Conclusion: This result suggests that the books used as sources should be updated.

Keywords: internal capsule, MRI, morphometry

P-35

Estimation of the brain volume using two different softwares with MRI

Kurtoğlu E, Acer N

Department of Anatomy, School of Medicine, Erciyes University, Kayseri, Turkey

Objective: Magnetic resonance imaging (MRI) provides a detailed knowledge of normal and diseased anatomical structures for medical research. There are different softwares to estimate brain volume for manual, stereological, automated and semi-automated techniques from MRIs. The aim of the current study was to compare the volumes of brain in healthy subjects using Volbrain and Analyze 11.0 softwares.

Methods: In this study, we worked on the brain MRIs of 24 subjects and we were obtained MRIs from PACS (picture archiving and communication system) on the computers in Erciyes University, Faculty of Medicine, Department of Anatomy. We compared the estimated values obtained from Volbrain and Analyze 11.0 softwares with MRIs.

Results: The brain volumes obtained with Volbrain and Analyze 11.0 softwares were 1055.458±99.390 cm^3, 1037.125± 96.075 cm^3, respectively.

Conclusion: Also, no significant difference was found between Volbrain and Analyze 11.0 softwares volumes of brain. From these results, it can be concluded that the softwares volume estimation of brain. MRI based volume measurements of brain volume can be useful indicators in humans suffering from different neurologic and neuropsychiatric diseases and the internet based software and the non-internet based automatic software used in brain volume calculation today can provide advantage in diagnostic process by calculating the volume in a shorter time than the stereological methods which are classical methods.

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Keywords: brain volume, volbrain, analyze 11.0

P-36

Acrylamide reduced the expression of vascular endothelial growth factor in clone 9 cells

Kaçar S, Şahin E, Şahintürk V

Department of Histology and Embryology, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Acrylamide is a toxic substance used in many industrial fields. It also forms in high temperature processed foods. There are numerous in vivo and in vitro studies regarding acrylamide. However, its effects on tissue growth factors have not been studied much. In this study, we aimed to investigate the effect of acrylamide on vascular growth factor (VEGF)cin clone 9, normal hepatocyte cells.

Methods: Clone-9 hepatocyte cells were grown at 37 °C in an incubator with constant 5% CO_2 and 95% air. Cells were cultured in a ready-to-use medium supplemented with fetal bovine serum and penicillin-streptomycin. Acrylamide was given to Clone 9 cells in 6-well plates by being dissolved in distilled water. After 24 hours, cells were fixed, immunocytochemically stained with anti-VEGF and examined under a microscope.

Results: VEGF expression was observed to be decreased in acrylamide-treated cells when compared with untreated Clone 9 cells.

Conclusion: Acrylamide reduces VEGF expression of clone 9 normal hepatocyte cells.

Keywords: acrylamide, VEGF, immunocytochemistry

P-37

Immunocytochemical examination of TNF-α protein after acrylamide administration

Kaçar S, Şahin E, Şahintürk V

Department of Histology and Embryology, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: acrylamide, used in industryin the 1950s, was a colorless, odorless vinyl monomer. Several in vivo and in vitro

studies were carried out with acrylamide and its damaging effects were demonstrated. However, there exists a gap in the literature about its damaging mechanism and the proteins that it induced. Tumor necrosis factor (TNF-α) is a cell signaling protein involved in systemic inflammation. It is produced by many cell types, mainly macrophages. The purpose of the present study is to examine the effect of acrylamide on the expression of TNF-α in immunocytochemical-stainined Clone 9 hepatocyte cells.

Methods: Cells were cultured at 37 °C in an incubator with constant 5% CO_2 throughout the experiment. RPMI-1640, a ready-to-use was used as cell medium. Cells are divided into 2 groups of cells with respect to acrylamide-treated and untreated cells on 6-well plates. A density of 125,000 cells / ml of cells was seeded into each group. Twenty-four hours after the acrylamide treatment, the cells were immunocytochemically stained with anti-TNF-α.

Results: While TNF-α stained negatively in the control group, it stained positively in the acrylamide-trated group.

Conclusion: Hepatocyte cells increase the expression of TNF-α protein in response to acrylamide.

Keywords: acrylamide, TNF-α, immunocytochemistry

P-38

Persistent median artery: a concern for blind injections for carpal tunnel syndrome

Güler MA[1], Özkuk K[2], Karahan AY[3]

[1]Vocational School of Health Services, Yozgat Bozok University, Yozgat, Turkey; [2]Department of Medical Ecology and Hydroclimatology, Faculty of Medicine, Uşak University, Uşak, Turkey; [3]Department of Physical Therapy and Rehabilitation, Faculty of Medicine, Uşak University Uşak, Turkey

Objective: Persistent median artery described before, but its clinical relevance in wrist injections has not been studied. Injury to it can be avoided by using ultrasound-guided wrist injections in the management of the carpal tunnel syndrome. We aimed to present a case of a persistent median artery.

Methods: The subject was a 49-year-old man who diagnosed with carpal tunnel syndrome on his right side.

Results: During the evaluation, his right wrist with musculoskeletal ultrasound for the ultrasound-guided steroid injection persistent median artery was incidentally found. Due to this anomaly injection applied to another side of the median nerve. The median artery appears early in embryonical development and is the dominant blood supply but it is ordinarily involuting before birth or in some cases regresses at a later age (either in perinatal period or early infancy). However, its persistence in the adults represents retention of the primitive arterial pattern. In literature, its incidence has been reported 3–8% of the US population. Although usually asymptomatic, it can increase the risk of the carpal tunnel syndrome secondary to thrombosis, dilatation, calcification, aneurysm, and trauma. In some cases, it forms the only supply to the median nerve and is responsible for the arterial supply to neighborhood muscles. Damage to this artery could have severe effects and anomaly has clinical significance, especially during blind wrist injections. Ultrasound-guided injections is an inexpensive way to avoid arterial injury and injection of medication into the vasculature.

Conclusion: A persistent median artery is not such a rare anatomical variant, and its presence should be taken into consideration in clinical practice, especially in the carpal tunnel injections. Also, it may cause carpal tunnel syndrome symptoms, by itself.

Keywords: anatomical variant, carpal tunnel syndrome, median artery

P-39

Clinical significance of clavicular morphometry

Özşahin E[1], Erdem H[2], Boyan N[2], Oğuz Ö[2]

[1]Department of Anatomy, Faculty of Medicine, Başkent University, Adana, Turkey; [2]Department of Anatomy, Faculty of Medicine, Çukurova University, Adana, Turkey

Objective: Clavicle is the bony link between upper extremity and the body. This study is undertaken to assess the anatomical structure of clavicle and to determine the morphometric measurements.

Methods: Sixty-six clavicle of unknown gender of an Anatolian population (34 left–32 right) are included. Maximum claviculer length, the perimeter of the midpoint, the superior inferior and anterior posterior thickness of extremitas acromialis, the distance between the lateral border of the clavicle and the midpoint of linea trapezoidea, maximum length and width of impressio costoclavicularis, maximum length and width of fascies sternalis, maximum lengt hand width of facies acromialis and concave angle are measured in addition the Robustness index (endurance index) is calculated.

Results: Maximum claviculer length was 136.19±13.41 mm; superior inferior thickness of extremitas acromialis was 10.59±2.15 mm; and anterior posterior thickness of extremitas acromialis was 21.62±3.87 mm; the distance between the lateral border of the clavicle and the midpoint of linea trapezoidea was 17.06±3.83 mm; maximum length of impressio costoclavicularis was 16.51±5.11 mm; and maximum width of impressio costoclavicularis was 8.07±2.88 mm; maximum length of fascies sternalis was 16.58±3.22 mm; and maximum width of fascies sternalis was 20.26±3.29 mm maximum length of fascies acromialis was 9.10±2.55 mm; maximum width of fascies acromialis was 14.74±3.43 mm; concave angle was 139.43±8.25º; the perimeter of the midpoint of the clavicle was 3.57±0.46 mm and the Robustness index (endurance index) was calculated to be 2.63±0.32.

Conclusion: Knowledge on the clavicular measurements may be essential for orthopaedic surgeons in acute displaced mid-

shaft clavicle fractures and to choose a standart treatment modality in many other conditions.

Keywords: clavicle, clavicle width, clavicle length, concave angle, robustness index

P-40

Unilateral large mylohyoid bridging of the dry human mandible: case report

Arifoğlu Y[1], Parlak M[1], Özdemir F[2], Maral F[1], Zeren E[1], Verimli U[3]

[1]Department of Anatomy, Faculty of Medicine, Bezmialem Vakıf University, Istanbul, Turkey; [2]Department of Anatomy, Faculty of Medicine, Hitit University, Çorum, Turkey; [3]Department of Anatomy, Faculty of Medicine, Marmara University, Istanbul, Turkey

Objective: Mandibula is a strong mobile bone that constitutes the lower jaw skeleton, consisting of a corpus and two rami. On the inner surface of the ramus of the mandible, there is the mandibular foramen with a protrusion on its anterior side, called lingula, which is formed by the fusion of the medial and lateral laminae of the compact bone. Mylohyoid groove, which courses inferiorly arising from the mandibular foramen, is also observed inferior to this bony protrusion. The mylohyoid nerve passes through mylohyoid Groove and innervates the mylohyoid muscle and the anterior belly of the digastric muscle. Histological studies have shown that the mylohyoid nerve is a mixed nerve containing both motor and sensory fibers. In some cases, the proximal part of the mylohyoid groove may appear as a canal due to a bony bridge (mylohyoid bridge or arch) which is a hyperostotic derivation of Meckel's cartilage on the mylohyoid groove. In cases with the mylohyoid bridge, the vessels and nerves coursing inside the bridge may be entrapped or the bridge structure may act as a barrier preventing anesthetic injections. In addition to collecting valuable anthropometric data, the investigation of anatomical variations has always been important since these variations may bring significant contributions to the clinical applications. The aim of the current study is to determine the frequency rates of the mylohyoid bridge and to discuss the clinical significance of the subject.

Methods: 45 human mandibles which are used in regular educational sessions in Bezmialem Vakıf University, Hitit University and Marmara University Medical Schools, Departments of Anatomy, were macroscopically examined and the frequency of mylohyoid bridge was investigated. Vertical lengths of mylohyoid grooves and mylohyoid bridges were measured with digital calipers in the mylohyoid bridge variation presenting cases.

Results: In one of the total 45 mandibles (90 mylohyoid grooves) examined in the current study, a large mylohyoid bridge extending towards the mandibular foramen was determined on the proximal part of the left mylohyoid groove (%1.1). The vertical length of this bridge was 12.41 mm and the length of the mylohyoid groove was 20.21 mm. The length of the right mylohyoid groove, in this case, was measured 22.7 mm

Conclusion: The knowledge about the frequency of mylohyoid bridge variations will contribute to the literature on this subject and will guide oral surgical and dental practices to prevent possible complications in the clinical practice.

Keywords: mandible, mylohyoid bridging, mylohyoid groove, mylohyoid canal, mandibular foramen

P-41

Accessory transverse foramina

Yıldırım FB, Güzelad Ö, Öğüt E

Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: The transvers foramen refers to the bilateral foramina located laterally of the cervical vertebral body. This foramen is found only in the cervical vertebrae and vertebral artery and vein passes through it. The shape and situation of the vertebral vessels can cause anatomic variations in the cervical vertebrae. The aim of this study is to examine and morphological analysis the incidence and localization of accessory transvers foramina.

Methods: This study was carried out 250 cervical vertebrae at the Akdeniz University Faculty of Medicine, Department of Anatomy. The cervical vertebras were divided into 5 groups (C_3–C_7). SPSS 24 (IBM Electronics, USA) was used for statistical analysis and accepted that $p<0.05$ was statistically significant.

Results: 250 cervical vertebrae (C_3–C_7) were used in the study. transvers foramina was observed on both sides and was observed only 21 (8%) accessory transvers foramina. 10 cervical vertebrae were unilaterally (5 right, 5 left) and 11 cervical vertebrae were bilaterally. Bilateral was more common than unilateral one. Bilaterally, 3 were found in C_4 (1%), 2 (0.8%) C_5, 4 (1.2%) C_6 and 2 (0.8%) C_7. Among the bilateral ones, 3 (1%) were located in posterolateral, 1 (0.6%) were posteromedial and 7 (1.8%) were posterior. Unilaterally, 5 were located in the left posterior and 5 were found in the right posterior and posterolateral. Unilateral C_7 vertebra was the most common (1.2%), C_3 and C_6 were the least (0.6%).

Conclusion: Take into consideration of the presence and localization of accessory transvers foramina may beneficial for selecting the correct treatment method (for take into account of the existence of artery, vein and nerve variations). The localization of these accessory formations and the surgical anatomy are clinically important for neurosurgeons and radiologists.

Keywords: transvers foramina, accessory transvers foramina, cervical vertebra, transvers foramina bipartitum

P-42

Does the parietal foramen varies between gender?

Güzelad Ö, Öğüt E, Yıldırım FB

Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: The parietal foramen is located at the back part of parietal bone and close to the sagittal sutur anatomically. The parietal emissary veins which drains into the superior sagittal sinus and a small branch of the occipital artery passes through it. The size of foramen varies considerably and is not usually present. The aim of this study is to assess the incidence of parietal foramen with gender and the mean distance from sagittal suture and lambda.

Methods: The research was carried out in 100 human skulls (54 male and 46 female) at the Anatomy Department of Akdeniz University Medical Faculty. The measurements o the skull were performed by BTS digital calipers. SPSS 24 (IBM Electronics, USA) was used for statistical analysis of data and accepted that $p<0.05$ was statistically significant.

Results: The prevalence of parietal foramen was 56% for males and 44% for females. In males, 36 (29%) were detected on the right and 29 (23%) on the left in females. The distance of parietal foramen to lambda was found 42.89±4.01 mm for male, 38.64±0.57 mm for female and the distance from sagital suture 13.41±3.47 mm for male and 8.92±0.06 mm for female. At least 1 parietal foramen was detected on the right and left both genders and the bilateral ratio was found 41% female and 59% men. There was a statistically significant difference between sex in terms of the ratio of parietal foramen on the right and left ($p<0.05$).

Conclusion: During cranial surgery may cause complications of emissary parietal vein hemorrhage in the parietal foramen. Because, the connection between the extracranial and the intracranial region is provided by the parietal foramen. So this anatomical information, right and left side of the foramen and the difference between the gender may an important guide for surgery.

Keywords: parietal foramen, parietal emissary vein, parietal bone, parietal, cranial surgery

P-43

The effect of cranial index on gender

Öğüt E, Güzelad Ö, Yıldırım FB

Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: Classical anthropometry is the most widely used cranial index to describe the craniofacial complex in human skulls and to classify skull types. This index is calculated by determining the ratio between the maximum width and the maximum skull length and is one of the clinically accepted anthropometric parameters. The aim of this study is to investigate the cranial index of dry skulls and compare their skull type with sex.

Methods: The study was carried out in 100 dry skulls at Akdeniz University Medical Faculty Department of Anatomy. Cranium length (max. anteroposterior diameter) and cranium width (maximum transverse diameter between two landmarks) were measured with a caliper. The length of the cranium was measured from glabella to inion. The cranial index showed that the skull types were ultradiolichocranial (CI<64.9), hyperdolichocranial (CI=65–69.9), dolichocranial (CI=70–74.9), mesocranial (CI=75–79.9) brachikranial (CI=80–84.9), hyperbrachicranial=85–89.9), and ultrabrachikranial (CI>90). SPSS 24 was used for statistical analysis and was accepted that $p<0.05$ was statistically significant.

Results: Cranial index values were 86.98±9.73 in men and 84.08±9.77 in women. 37 of them were hyperbrachikraniyal [26 (21%) male, 11 (10%) female], 32 of them were hyperbrachicranial [17 (15%) male, 15 (13%) female], 19 of them were brachikranial (7%) female, 9 were mesocranial [8 (7%) female, 1 (0.9%) male] and 3 were dolichocranial [2 (1.6%) male and 1 (0.8%) female]. Ultradiolichocranial and hyperdolichocranial types were not detected. Although skull types vary between sex, some skull types (mesocranial) more observed in women than in men while brachikranial types more observed in men ($p<0.05$).

Conclusion: Skull shape and types can be helpful in early detection and management of the craniofacial syndrome or neurological disorders.

Keywords: cranial index, anthropometry, craniofacial complex, craniofacial syndrome, cranium

P-44

Morphometric analysis of the internal acoustic canal: a micro CT study

Çelik HH[1], Uzuner MB[2], Alshouk A[1], Ocak M[3], Geneci F[4], Sargon MF[1]

[1]Department of Anatomy, Faculty of Medicine, Hacettepe University, Ankara, Turkey; [2]Department of Anatomy, Faculty of Medicine, Kars Kafkas University, Kars, Turkey; [3]Department of Anatomy, Faculty of Dentistry, Ankara University, Ankara, Turkey; [4]Department of Anatomy, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey

Objective: Micro-computed tomography (micro CT) is a method of imaging with very high resolution. In this research, we evaluated internal auditory canal morphometry with the micro-CT study.

Methods: Four formalin fixed petrous part of temporal bone taken from cadavers. Decalcification done, speciemens scanned using Micro CT (Skyscan 1174, Skyscan, Kontich Belgium) scanner with 800 µA, 50 kV, 33 µm set and used a 0.25 mm aluminum filter. The scan settings were 4000 expsures (ms), 0.700 rotation steps (deg). Nearly 257 cross-sectional images were obtained from each sample. NRecon program used for recon-

struction and 8 bit images were taken. Morphometric analysis was done using these images with data viewer program.

Results: The average length of IAC was 13.75 mm, the vertical hiegth of the internal acaustic meatus was 7.46 mm, while the width of the internal acaustic meatus was 10.25 mm. The average of the volume of the canal was 325.95 mm^3.

Conclusion: Internal auditory canal morphometry is essential for microsurgery of the cerebellopontine angle and acoustic neuroma, the later may produce bone changes and is an important intracranial pathology. We hope that this work will contribute to the literature on the internal auditory canal morphometry.

Keywords: internal auditory canal, morphometry, Micro CT

P-45

Three dimensional imaging of maxillary trabecular structure with micro-computed tomography

Çelik HH[1], Ocak M[2], Geneci F[3], Uzuner MB[4]

[1]Department of Anatomy, Faculty of Medicine, Hacettepe University, Ankara, Turkey; [2]Department of Anatomy, Faculty of Dentistry, Ankara University, Ankara, Turkey; [3]Department of Anatomy, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey; [4]Department of Anatomy, Faculty of Medicine, Kars Kafkas University, Kars, Turkey

Objective: The trabecular structure of maxilla is very important both in facial trauma and dental implants. Micro-computed tomography (micro-CT) is a method of imaging with very high resolution. In this research, we evaluated the micro-CT views of maxilla in the sagittal, coronal and axial planes.

Methods: The samples were scanned in microtomography (mikro-CT) (Skyscan1174, Skyscan, Kontich, Belgium) by using the following parameters; 800 microamperes (μA), 50 kilovolts (kV) and 24 μm pixels. The rotation step of the micro-CT was set at 0.7° and was used to scan at 4000 milliseconds exposure time and 180° rotation. The images that were obtained from the scanned materials were processed via a special reconstruction soft ware. During reconstruction, the beam hardening correction was adjusted at 34%, ring artifact reduction at 5% and images were processed. Colorful three dimensional images were digitally obtained

Results: As a result of the study, bone volume ratio 32.65±7.46 trabecular thickness 0.28±0.05 mm trabecular separation 0.57±0.13 mm.

Conclusion: A new study can be planned by the usage of quantitative measurements. These quantitative data can be obtained by the measurements of trabecular thickness, trabecular separation, trabecular number and ratio of trabecular bone volume to cortical bone volume. These obtained images will be very useful both in anatomical and surgical researches and education.

Keywords: maxilla, anatomy, micro CT

P-46

The effect of high fat diet on the spleen morphology during the prenatal and postnatal periods

Topal F[1], Aydar Y[2], Yücel F[2], Şahintürk V[3]

[1]Department of Medical Services and Techniques, Bilecik Şeyh Edebali University, Bilecik, Turkey; [2]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey; [3]Department of Histology and Embryology, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Excessive consumption of diet with high fats is demonstrated to adversely affect the development and health of baby. In the present study, we aimed to examine the impact of feeding the mice with high fat diet during the prenatal and postnatal periods on the morphometric parameters in their spleen.

Methods: We fed the mice in experimental group with high-fat diet (60% kcal from fat, Altromin, Germany) and with standart control diet (10% kcal from fat; Altromin, Germany) in control groupduring the prenatal and postnatal periods. The baby mice in both groups were fed with high fat and standard control diet, respectively for 6 weeks after their weaning. At the end of the weaning; changes in the height, body weights and abdominal circumferences of the baby mice were weekly measured and recorded. Furthermore, blood glucose concentrations were analyzed using glucose strips. Ultimately, after removing the spleen of the baby mice at the postnatal 63rd day under anesthesia, they were sacrificed with cervical dislocation. Unbiased stereological methods were used to evaluate the spleen morphology. After the routine histological processes, the spleen samples were stained with hematoxylin eosin and immunohistochemical procedures.The sections were evaluated using Cavalieri's method and volume fraction approach. We calculated mean volume of spleen, total volume of white pulp, mean volume of germinal center, total volume of PALS and ratio of white pulp to spleen volume (Vv).

Results: The amount of the intraperitoneal adipose tissue, blood glucose concentrations, body mass index, abdominal circumference ($p<0.001$) and weight of spleen ($p=0.002$) in the high fat diet group significantly increased when compared with the standard control group. On the other hand, mean volume of spleen ($p=0.001$), total white pulp volume, mean volume of germinal center, total PALS volume andthe volume of white pulp/spleen (Vv) ($p<0.001$)in the high fat diet group augmented meaningfully when compared with the standard control group.

Conclusion: These data indicated that intake of high fat diet during the prenatal and postnatal periods adversely affect various morphometric parameters in the spleen of the mice fed with high fat diet.

Keywords: high fat diet, prenatal period, postnatal period, spleen, morphometric analysis

P-47

History of cadaver education

Özdemir F

Department of Anatomy, Faculty of Medicine, Hitit University, Çorum, Turkey

In anatomy training, cadaver (human body) has been an alternative tool for centuries. The use of human cadaver for medical education; It is very important for the students to learn the human body individually, to touch the human body and to implement some manipulative processes.In this study, we aimed to a review of the importance of cadaver's world history and the cadaveric donation in our country. The mummification belongs to the ancient Egypt period in the first 3000 BC. In the Turkish world, it is the mummies in the Turfan region in East Turkestan and exhibited in Urumqi. First dissected person was Alexandria, who was executed for 300 BC. The first document about the cadaver is from Kadıköy (Chalcedon) Herophilos (335–280 BC). Andreas Vesalius (1514–1564) emphasized the importance of dissection in the education of medical students, unlike Galen's classical knowledge. After the 17th century, dissection became an integral part of medical education. In Eastern medicine, Kanun Fi't-Tıb written by İbni Sina who lived in 10–11. Centuries which has been a course book in Western medical faculties for many centuries. The first autopsy in the Ottoman Empire is "Enmuzec el-Tib" written by Emir Çelebi. In addition, Emir Çelebi emphasized the importance of anatomy and dissection in this book. On March 14, 1827, in modern medicine established at the time of Sultan II. Mahmut, the science of anatomy in medical education has been given a separate place. Dissection was not included in the medical education, but after the Tanzimat, with the support of the Sultan Abdülmecit, the doctor from Austria, C.A. Bernard and his colleagues consented to dissection and autopsy with suggestions. After 1841, thanks to Spitzer's studies, it was ensured that the dissection was included in the Turkish medical education program. Cadaver and dissection, an indispensable part of medical education, it continues without losing its precaution from the BC. 3000 to the day. Anatomy education without cadaver cannot be considered.

Keywords: anatomy, cadaver, dissection, history,

P-48

Investigation of cardiovascular anatomy of the adult type Alcapa syndrome case by three dimensional modelling

Yaprak F[1], Derin O[1], Bayraktaroğlu S[2], Özer MA[1], Gövsa F[1]

[1]Department of Anatomy, Digital Imaging and 3D Modelling Laboratory, Izmir, Turkey; [2]Department of Radiology, Faculty of Medicine, Ege University, Izmir, Turkey

Objevtive: Alcapa (Bland-White-Garland) Syndrome -characterized by left coronary artery originating from pulmonary trunk - is a very rare syndrome (1 / 300,000). 90% of cases without surgical treatment lose their lives in the first year of life. The aim of this study is to investigate the cardiovascular anatomy of a 15-year-old adult-type Alcapa Syndrome patient with three-dimensional modeling.

Methods: Coronary CT angiography with a cross-sectional thickness of 0.6 mm was modeled using the 3D Slicer v.4.8.1 and MeshMixer v.3.4.35 software programs on the DICOM file, and the model was printed successfully with the MassPortal 3D printer.

Results: Our patient had no acute complaints but had been diagnosed with mitral insufficiency since she was 5 months old. The cardiovascular anatomy of the patient was made clearer and more detailed with the life-size 3D heart model. In the literature there are cases in which Alcapa Syndrome is accompanied by different cardiovascular defects such as septum defects, patent ductus arteriosus and Fallot tetralogy. In our case no other congenital cardiac anomaly was detected, but there was compensatory changes such as curvature and dilate right coronary artery (5 mm in diameter), thickening of the left ventricular and mitral valves and dilatation of the left ventricular. Ventricular ejection fraction, diameters of aorta and pulmonary trunk were normal.

Conclusion: Survival and quality of life in Alcapa Syndrome is about early diagnosis and selection of the appropriate surgical procedure. Personalized 3D model will guide the different anatomical details in all aspects and in planning the most appropriate treatment.

Keywords: Alcapa syndrome, 3D modeling, anatomy

P-49

Os calcaneus angles in dry bones of Turkish population

Uygur AG, Taşkın RG, Çevik Y, Yücel AH

Department of Anatomy, Faculty of Medicine, Çukurova University, Adana, Turkey

Objective: The bones forming the foot skeleton are arranged in two rows, proximal and distal. The os calcaneus, which is in the proximal row and forms the heel, is the largest and first ossification of the ankle bones. It also plays an important role in bone-force transmission. Purpose of this study is to calculate os calcaneus angles in dry bones belonging to Turkish population.

Methods: Dry calcaneal bones belonging to University of Çukurova, Medicine Faculty, Department of Anatomy were used in this study, age and sex were unknown. Pictures of bones were taken from a constant distance and under constant lighting conditions, shooting angles were oriented accordingly to the position that lateral X-rays are obtained. Bones with deformed reference points were excluded from the study. Gissane (GA) and Böhler (BA) angles were calculated using lines drawn from reference points in digital design program (Sketch Up 2016). Calculation sensitivity was 1/100mm. Angle

value distributions and left right relations were inspected. After the calculations, minimum-maximum, median and standart deviation values were obtained.

Results: Total of 67 dry bones was grouped as left and right. In the right group Böhler angle average was 29.68°±4.71 and was in 20.20°–41.20° range. In the left group Böhler angle was 31.54°±4.88° in average and was in 20.20°–41.20° range. In the right group Gissane angle was 102.96°±5.25° in average and was in 93.70°–114.5° range. In the left group average value was 103.89°±7.14° and was in 93.10°–120.40° range. For both angles no significant difference was found between left and right (for BA p=0.118; for GA p=0.545).

Conclusion: Os calcaneus angles may differ between races and populations. These angular values are important in determining os calcaneus fractures, base values of these angles are especially important in diagnosing os calcaneus fractures. In literature, the risk of fractures (especially depleted fractures) increases as the Böhler and Gissane angles approach the lower limits. Values obtained in this study will contribute establishing reference values in Turkish population.

Keywords: Böhler angle, Gissane angle, os calcaneus.

P-50

Case report: a two headed accessory muscle on the sole of foot

Boracı H[1], Zeren E[2], Kirazlı Ö[1], Verimli U[1], Arifoğlu Y[2]

[1]Department of Anatomy, School of Medicine, Marmara University, Istanbul, Turkey; [2]Department of Anatomy, School of Medicine, Bezmialem Vakıf University, Istanbul, Turkey

Objective: The foot is a complex structure that has numerous muscles, ligaments and articulations. It has a vital role in maintaining the static posture and the dynamic balance. On the plantar surface, four layers of muscles are described. Numerous cadaver studies in the literature describe several accessory muscles such as peroneus digiti mimimi, flexor digitorum accessories longus muscle (FDAL). Majority of the cadaver studies in the literature demonstrate wide range of variations regarding the origins and the insertions of the accessory muscles observed. In accordance with the literature, an accessory muscle on the plantar surface was assessed during the dissections.

Methods: In Marmara University School of Medicine Department of Anatomy Dissection Laboratory, a 83 year- old male cadaver was dissected and a two headed accessory muscle was observed on the plantar surface of the left foot.

Results: The medial head of the accessory muscle originated from flexor digitorum longus muscle and lateral head originated from flexor digiti minimi brevis muscle. The insertion point of this muscle was observed to be the distal phalanx of the fifth toe. The length of the muscle and the tendon was measured approximately as 108.85mm and 67.18mm respectively. Both medial and lateral heads of the muscle run close to the medial and lateral plantar neurovascular bundles. The tendon of the muscle was pierced by the tendon of the flexor digitorum longus muscle and both muscles inserted on the distal phalanx of the fifth toe. Recent studies emphasize that the accessory muscles may have close anatomical relations with the neurovascular bundles of the region and this relation may cause neuropathies and vascular insufficiencies due to entrapments or compressions to these bundles in the clinical aspect.

Conclusion: According to the results of the current study, the described accessory muscle may have an important contribution the flexion movement of the toes. In this respect, it may have a significant role during the walking phase. Furthermore, the variations of the accessory muscles should be taken into consideration in surgical interventions since they may change the course of the intervention or as in the case of Abductor halluces, muscle they may be used in reconstructive procedures as grafts.

Keywords: accessory muscle, plantar surface, variation

P-51

Gene enrichment cluster analysis of differentially expressed genes in males and females in non-alcoholic fatty liver disease

Kaçar S, Bağcı R, Şahintürk V

Department of Histology and Embryology, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Non-alcoholic fatty liver disease is a liver disorder that affects people who either not consume or consume a little alcohol. As its name implies, the main feature of this disease is the accumulation of excessive fat in the liver cells. In its progressive stages, the disease is characterized by liver inflammation that may lead to irreversible liver damage.The purpose of this study is to identify the differentially expressed genes of males and females in non-alcoholic fatty liver disease and to identify in which gene sets those genes are categorized.

Methods: In the current study, the GENEVESTIGATOR programme, a microarray database was used. The expressed genes in males and females in non-alcoholic fatty liver disease were selected from previously registered studies. A new gene set was created with at least two-fold differentially-expressed genes in either male or female. Afterward, which known gene set those genes belong to was determined by performing enrichment cluster analysis

Results: It was found that 48 genes are differentially expressed either in men or women in desired conditions in non-alcoholic fatty liver disease. The number of genes associated with the endoplasmic reticulum network, membrane-bounded organelles, intracellular organelles, oxidation-reduction and biosynthetic process of organic substances is ascertained as 8, 22, 23, 7 and 16 among those identified 48 genes.

Conclusion: According to these results, there are differentially-expressed genes of men and women in non-alcoholic fatty

liver disease. The reasons for these differentially expressed genes should be investigated with more advanced studies.

Keywords: gene enrichment, cluster analysis, non-alcoholic fatty liver disease

P-52

Morphometric evaluation of acetabulum

Gören H[1], Alpay M[2], Yeğin B[3], Aydar Y[3], Ay H[3], Özden H[3]

[1]Department of Anatomy, Faculty of Medicine, Düzce University, Düzce, Turkey; [2]Department of Anatomy, Faculty of Medicine, Tekirdağ Namık Kemal University Tekirdağ, Turkey; [3]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Researches on the anatomy and function of the hip joint are critical for surgery, orthopedics, rheumatology, physiotherapy, radiology and many other branches for years. The structures that make the joint so important are the acetabulum found on the pelvis and the head of the femur. The aim of surgical treatment of a fractured acetabulum is to fix the joint surface and provide a firm fixation allowing post-operative exercise. Thus, a comprehensive understanding of the anatomic measurements of bone tissue will increase the postoperative comfort of the patient. Morphometric measurements of acetabulum have not been investigated in detail in previous studies. In the present study, we therefore aimed to evaluate several morphometric parameters of the acetabulum because of its surgical, orthopedic and anatomic significance.

Methods: We examined 36 pelvis skeletons in the present study. The bones were available at the Bone Collection of Department of Anatomy at the Medical School of Eskişehir Osmangazi University. While some pelvis skeletons contained whole hip bone, others contained half of the hip bone. The following measurements were made:1) area of the facies lunata, 2) acetabulum diameter, 3) acetabulum depth, 4) limbus acetabuli, 5) small curvature of limbus acetabuli, 6) fossa acetabuli diameter, and 7) incicura acetabuli. After calculating the measurements, the mean values of the parameters, their relation to each other, the minimum and maximum values were examined. Electronic digital calipers and millimetric measurement paper were used for mentioned measurements.

Results: The average area of facies lunata was 2.14±0.38 mm^2. The average diameter of the acetabulum was 53.49±3.76 mm. The average depth of the acetabulum was 31.54±3.51 mm. The average length of facies lunata's curvature minors was 8.16±0.93 cm. The average diameter of the fossa acetabuli was 25.95±3.8 mm. The average length of the incicura acetabuli was 35.95±4.01 mm.

Conclusion: Morphometric examination of the hip joint has potential to offer numerical values for future comparisons and other studies. Accordingly, we attempted to complete the present study examining several various measurements regarding the anatomy of the acetabulum.

Keywords: acetabulum, morphometry, hip joint

P-53

The importance of cadaver in anatomy education from past to today

Gören H

Department of Anatomy, Faculty of Medicine, Düzce University, Düzce, Turkey

Objective: The anatomy course, which is one of the cornerstones of medical education and which is being started to be given to the students in the first years of their education, is very important for the students to better understand the human body and the medical education to be given. The basis of the anatomy science is cadaver knowledge and education. Although cadaver-equivalent course materials are presented, no technological development is at a level where the workings on the human body can hold its place. We aim to investigate studies, collections, and articles from past to present on the anatomy and cadaver studies and to examine the importance of cadaver material in medical education and the values that it has contributed to the scientific world.

Methods: Articles related to anatomy and cadaver trainings were scanned on Google academic and Pubmed search engines and appropriate articles of study were reviewed. As a result of the surveys we made, studies on the cadaver from the time of 500 BC to the present day were examined in detail.

Results: The place of cadavers in the anatomy of science is the antagonism of Alcmaeon's work from Croton-Italy in 500 BC. For the first time in history, the dissection study on the human body was carried out in Alexandria Medical School in the third century BC. The famous work of the surgeon-anatomist Vesalius, defined as the father of the anatomy, "De Humani Corporis Fabrica" (1543) is an important work in which information based on anatomic dissection is included with images and texts. LEONARDO, a multi-faceted and universal artist who shapes the Renaissance, is also the VINCI, which scientifically embodies the "Vitruvius Man", which refers to the proportions and proportions of the human body. Hrista Stambolski published the first Turkish anatomy atlas in 1868. The cadaver donation started in the 19th century in the Western countries. In our country, cadaver donations have started with the 23rd and 24th articles on the protection of the person of the Civil Code. For this reason, cadaver education and training in Europe is even more advanced than our country.

Conclusion: Cadaver training, the cornerstone of every period of medical education, is the best material for learning the human body. However, the number of medical faculties and the increase of quotas make cadaver education more and more difficult. Although material equivalent to cadaver is used for anatomy training with the development of technology, no material cadaver can take place.

Keywords: anatomy, cadaver, medical education

P-54

Evaluation of missions between subcothical seeds in healthy individuals by conventional magnetic resonance imaging method

Sezer HM[1], Akan EG[2], Şakul BU[1]

[1]Department of Anatomy, School of Medicine, Istanbul Medipol University, Istanbul, Turkey; [2]Department of Radiology, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

Objective: The subcortical nuclei which are basal ganglia and thalamus are the gray matter bodies located in the white matter, deep in brain hemispheres. Various metric or volumetric values were identified in previous studies concerning many disease groups especially neurodegenerative and neuropsychiatric. However, an index related to normal values is absent. The main purpose of this study is to determine locations that can be related to diseases on magnetic resonance images and establish an index in order to detect morphological and volumetric changes in subcortical structures due to various pathologies.

Methods: A retrospective study was conducted on 57 healthy subject. They were divided into three age groups as 20–29, 30–39 and 40–49. Previously determined 12 locations were measured at both hemispheres on the mr images of these people.

Results: Evaluation of these 12 parameters between genders, age groups, male and female results within themselves showed statistically significant difference.

Conclusion: It is believed that this study will be helpful for understanding severity, diagnosis and plan the treatment of pathologies. Also, it may be helpful to establish an index with metric values on two-dimensional planes. It is planned to study comparatively healthy and patient groups in a larger sample size. It is planned to study significant values comparatively in healthy and patient groups with a larger sample size as the continuation of this study.

Keywords: basal ganglia, thalamus, magnetic resonance imaging, subcortical structures, morphometry

P-55

Anatomical errors detected in anatomic illustrations of inner ear

Baylan H, Karacan K, Sınav A

Department of Anatomy, Faculty of Medicine, Sakarya University, Sakarya, Turkey

Objective: Anatomy is a visual science and the use of anatomical illustrations both in textbooks and atlases is very common. In addition using those visual materials are often used without questioning the anatomic correctness of them. Those illustrations, which are predicted to be correctly drawn, may reveal anatomical information sometimes incorrectly when examined in detail. The purpose of this study is to raise awareness about the anatomical errors in visual materials which are the essential and indispensable sources of anatomy education, mentioning about the mistakes in illustrations of inner ear used in education which we observed more frequently.

Methods: Illustrations describing the inner ear anatomy of 10 textbooks of histology, physiology and anatomy in the market and the illustrations downloaded from the internet were examined. The anatomical errors in the illustrations were determined by comparing them with the anatomically correct images. By analyzing the mistakes, it was tried to understand the reasons of repetitive mistakes.

Results: we can list the errors as following; 1. Describing the bone type surrounding the inner ear structures such as cochlea and semicircular canals as spongy type. However, it is known that the bone here is compact type 2. It is shown in some illustrations that bony labyrinth is sometimes located in a space covered with mucosa. In fact, there is no space covered with mucosa in the inner ear like tympanic cavity.

Conclusion: It is an undeniable fact that the anatomical structure of the inner ear can be depicted very difficultly. However, this difficulty should not be an excuse to make such mistakes causing misunderstandings of the anatomy. The similarity of the anatomical mistakes and making those mistakes repeatedly by different illustrators underscore that anatomy education is very important in medical painting. It is necessary for both students and trainers to recognise and underline the erroneous drawings being used in education.

Keywords: inner ear, errors, illustration

P-56

Importance of the mandibular morphometry in sex determination

Erdem H, Boyan NE, Kızılkanat ED, Oğuz Ö

Department of Anatomy, Faculty of Medicine, Çukurova University, Adana, Turkey

Objective: The largest and the most robust one among the bones forming the viscerocranium is the mandible. Mandible is mostly used in sex and identity determination due to having a structure that resists environmental conditions in a long time period. In this study, we aimed to investigate the effect of morphometric measurement results, belong to the mandibles, on sex determination.

Methods: Dry mandibles, with unknown sex and age, belongs to the University of Çukurova, Medicine Faculty, Department of Anatomy were examined for sex determination in accordance to the criterias defined before in the literature. According to the criteria, 20 male and 20 female mandibles were determined. The mandibles without significant morphological features for sex determination were not included in this study. The measurements were performed by two different researchers in a specific order: length of the ramus mandibulae, length of the processus coronoideus, length of the incisura mandibulae and the mandible angle. Lengths were measured

by a digital caliper accurate to 0.01 mm and the angles measured by the goniometer. Statistical analysis of the data was performed by the SPSS 19.00 package program.

Results: The mandibles classified as male according to the criteria in the literature have higher mean values than mandibles classified as female. It was also found that these results were statistically significant ($p<0.05$). Statistically significance was not observed between the right and left sides ($p>0.05$).

Conclusion: The morphometric data obtained from this study increase the reliability of the criteria which defines the morphological sex differance of the mandibles. Also, we believe that these data can contribute to sex determination criteria that can be used in forensic medicine and anthropology.

Keywords: mandible, morphometry, sex determination

P-57

Anatomy of the supra- and infra-trochlear triangles at the lateral wall of the cavernous sinus

Gürses İA, Coşkun O, Gayretli Ö, Kale A, Öztürk A

Department of Anatomy, Istanbul University, Istanbul Faculty of Medicine, Istanbul, Turkey

Objective: Supra- and infra-trochlear triangles are surgical corridors for approaching the lateral wall of the cavernous sinus. The literature provides conflicting results for the morphology and morphometry of these triangles. Additionally, possible vascular relationships were scarcely studied.This study was aimed to investigate the morphology, morphometry, and vascular relationships of the supra- and infra-trochlear triangles of the cavernous sinus.

Methods: Cranial bases of 25 cadavers, including vascular injections in 5, were dissected under surgical microscobe. The morphology and morphometry of both triangles were evaluated. The drainage patterns of the superficial middle cerebral vein were also investigated.

Results: Type A, B, C, and D triangle morphology was present on 23 (46%), 9 (18%), 10 (20%), and 8 (16%) sides, respectively. The average areas for supra- and infra-trochlear triangles were 22.2 (±11.7) mm^2 and 78.4 (±27.7) mm^2, respectively. The supra-trochlear triangle was significantly larger in Type D triangles. On 71.4% of injected specimens, the superior petrosal sinus contributed the cavernous sinus and formed a Type A triangle.

Conclusion: The anatomy of the supra- and infra-trochlear triangles are highly variable than previously reported. Introducing the knowledge regarding these variations to neurosurgical residency education programs and daily surgical practice could be valuable.

Keywords: cavernous sinus, supratrochlear triangle, medial triangle, infratrochlear triangle, Parkinson's triangle, lateral triangle

P-58

A rare case: eosinophilic angiocentric fibrosis

Harmankaya İ

Department of Pathology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: Eosinophilic angiocentric fibrosis (EAF) of the sinonasal tract is an exceedingly rare condition characterized by progressive submucosal perivascular fibrosis of unknown etiology. Most patients present with a history of long-standing and progressive nasal obstruction accompanied. The septum and lateral nasal wall are most commonly affected, but involvement of the maxillary sinus, facial or orbital soft tissues, or subglottis can be seen.

Methods: A 72-year-old male patient had complaints of of nasal obstruction for 1.5 years and f fullness in the right eye.

Results: The extracted orbital tomography showed a mass of soft tissue extending from the retroorbital region to the middle incision, leading to an enlargement on the sinus wall of the right maxillary sinus. The appearance of mild exophthalmos in the right eye due to mass compression was detected. With these findings, the patient was planned for an operation. During the operation, the right osteomeatal region and the fibrotic lesion extending from the maxillary sinus to the orbit are excised. Detached tissue samples were sent for pathological examination. Histopathological examination, it was characterized by a variable and evolving mixture of a rich polymorphic cellular inflammatory infiltrate, and dense fibrosis. The inflammatory infiltrate composed of numerous eosinophils, with variable numbers of B and T lymphocytes, plasma cells, neutrophils, and macrophages. The fibrosis consists of a distinctive perivascular concentric fibrosis with an "onion-skin" appearance. Immunohistochemically, it was SMA positive, CD34, EMA and S100 negative. Histochemically, intense staining was observed with Masson tricrom.

Conclusion: Nasal obstruction is, by far, the most frequent initial complaint. Pain and epistaxis are uncommon. On physical examination, the nasal mucosa and adjacent soft tissue appear swollen, thickened, and fibrotic, often resulting in fibrous tumor-like masses. Surgical resection with relief of the nasal obstruction is the treatment of choice in EAF, although recurrences are extremely common and multiple excisions are frequently required. Perivascular fibrosis is not a typical finding in Wegener's granulomatosis; furthermore, giant cells, necrosis, and increased serum ANCAs are not seen in EAF. Churg-Strauss syndrome has fibrinoid necrosis and granulomas that are absent in EAF

Keywords: sinonasal tract, fibrosis

P-59

Lung squamous cell carcinoma metastasizing to the breast

Harmankaya İ

Department of Pathology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: Squamous cell carcinoma (SCC) accounts for 20-30% of lung non-small cell cancers. 90% of patients with SCC are smoking. SCC is caused by atypical proliferation of squamous epithelial cells. SCC is associated with squamous dysplasia and carcinoma insitu. Mediastinal lymph node is frequently metastasized. Distant organ metastasis is rare. The primary SCC of the breast is a very rare tumor, a form of metaplastic carcinoma of the breast. To be able to talk about the primary SCC of the breast, it must be determined that the tumor is not a metastatic SCC that develops from the skin of the breast, from the areola, or anywhere else in the body. In addition, 90% of the tumor or nearly complete malignant squamous cells should be formed.

Methods: A 61-year-old female patient was diagnosed with a mass of 4 cm in the right upper lobe of the lung about 1 year ago and biopsied.

Results: The patient was diagnosed with squamous cell carcinoma and underwent radiotherapy and chemotherapy. The patient is admitted to the hospital because of complaints of right breast pain and swelling 10 months later. A needle biopsy was done. Histopathological examination of the sections prepared from the lesion revealed a tumor composed of atypical epithelial cells with oval, round nucleus, large eosinophilic cytoplasm, infiltrating solid islands in the fibrous stroma. Immunohistochemically, estrogen and progesterone receptors were found to be negative, HMWCK and CK5 / 6 positive. Cerb-B2 overexpression was not observed.

Conclusion: Pure SCC of the breast is very rare. Malignant breast diseases have been reported between 0.04% and 0.1%. In order to establish a positive SCC diagnosis, the SCC should be absent in the patient's skin and in another organ. Lesions such as metaplastic squamous epithelium, epidermoid-dermoid cyst, fibroadenomas, fibroepithelial neoplasms, squamous cysts with gynecomastia, ductal and lobular hyperplasia, papillomas, chronic abscess and breast implants can be precursors for pur SCC. Since there is no evidence that the tumor has developed from the breast in our case and the tumor was previously diagnosed as SCC in the lung, the lung tumor was thought to be SCC metastasis.

Keywords: lung, squamous cell carcinoma, metastasis, breast,

P-60

Primary Ewing's sarcoma of the lung

Harmankaya İ

Department of Pathology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: Primitive neuroectodermal tumor (PNET) is a high-grade malignant tumor originating from the neural crest and neuroectoderm. Peripheral PNETs, which are now thought to be virtually identical to Ewing's sarcoma (ES), originate from neural crest cells. Ewing sarcoma is a malignant bone tumour (occurring predominantly in the pelvis, femur, tibia and ribs) or soft-tissue tumour (occurring predominantly in the thoracic wall, gluteal muscle, pleural cavities and cervical muscles) that mainly affects children, adolescents and young adults. Rarely, it occurs as a primary soft tissue neoplasm without bone involvement, known as extraosseous ES.

Methods: A 10-month-old male infant is admitted to the hospital with a complaint of cough. Chest radiographs are taken on a mass in the right upper lobe.

Results: A 7 cm diameter mass adjacent to the lung is excision. In the sections examined, tumor cells forming oval nuclei, narrow cytoplasm, solid layers are observed. Immunohistochemically these cells are CD99, Fli-1 and Pansitokeratin positive, NSE, Chromogranin, Synaptophysin, NFP, Desmin, Myogenin, LCA, CD3, CD20 and TdT negativity. Histomorphological and immunohistochemical findings suggest Ewing Sarcoma. After the operation, there are no pathological findings in the residual tumor and bone scintigraphy performed on the thorax.

Conclusion: Extraskeletal Ewing's sarcoma, first described in 1969, that can originate within a wide array of extraosseous/soft tissue locations, including the retroperitoneum, chest wall, or paravertebral space. Primary pulmonary involvement is very rare. Ewing sarcoma is characterized by a recurrent balanced chromosomal translocation, most commonly t (11; 22) (q12; q24). This translocation results in the most common fusion being EWSR1–FLI1 (85% of cases). This results in immunohistochemical Fli1 positivity. As for the differential diagnosis of solitary lung lesions, primary pulmonary neoplasms in children are rare; secondary malignancy, from primary tumors such as Wilms tumor, osteosarcoma, or rhabdomyosarcoma, are far more common, however, these usually present with multiple lesions. Carcinoid represents the most common primary pulmonary malignancy in children. Bronchogenic carcinoma and pulmonary blastoma represent the second and third most frequent pediatric primary pulmonary cancers, respectively. Also, small round-blue-cell tumor group needs to be excluded in leukemia and lymphoma.

Keywords: Ewing sarcoma, lung, primary

P-61

Determination of cerebral lateral ventricle width nomogram in pregnancy

Desdicioğlu K[1], Desdicioğlu R[2], İpek A[3]

[1]Department of Anatomy, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey; [2]Department of Obstetrics and Gynecology, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey; [3]Radiology Clinic, Ankara Atatürk Training and Research Hospital, Ankara, Turkey

Objective: The cerebral lateral ventricle begins to be observed on ultrasonography from the 11th week of gestation. If the cerebral lateral ventricle is wider than normal, chromosome anomalies and congenital infection factors should be researched. We aimed to assess the cerebral lateral ventricle width in fetuses from 18–27 weeks gestation in normal pregnancies and to determine the correlation of cerebral lateral ventricle width with maternal

age, maternal body mass index, gestational week and fetal parameters and assess clinically.

Methods: The study included 328 healthy fetuses with 18–27 weeks gestation of mothers aged from 19–40 years (mean: 28.52). The cerebral lateral ventricle width of the fetuses was measured. Additionally, the fetal parameters of bi-parietal diameter (BPD), abdominal circumference (AC) and femur length (FL) were obtained. Later the fetuses were divided into the following groups; five groups based on maternal age of 20 years and younger, 21–25 years, 26–30 years, 31–35 years and older than 35 years; and four groups based on body mass index of 20–24.9, 25–29.9, 30–34.9 and more than 35.

Results: The cerebral lateral ventricle width of fetuses with 18–27 weeks gestation was identified to vary from 5.5–7.02 mm (mean: 6.42 mm). Additionally, the mean and standard deviation of fetal cerebral lateral ventricle width and fetal parameters were determined according to maternal age, maternal body mass index and week of pregnancy. Later the correlations between fetal cerebral lateral ventricle width with fetal parameters, maternal age, maternal body mass index and week of pregnancy were examined. Fetal cerebral lateral ventricle width was not identified to correlate with week of pregnancy, fetal parameters, maternal age and maternal body mass index ($p>0.01$). Comparison of cerebral lateral ventricle width thickness with week of pregnancy, age groups and body mass index groups did not determine statistical differences ($p>0.05$).

Conclusion: Maternal age and maternal body mass index are important factors affecting fetal development. We believe the data obtained as a result of our study will be beneficial to clinicians in terms of assessing fetal development and identifying fetal anomalies.

Keywords: pregnancy, ultrasonography, cerebral lateral ventricle

P-62

Determination of fetal transcerebellar diameter nomogram in pregnancy

Desdicioğlu R[1], İpek A[2], Desdicioğlu K[3]

[1]Department of Obstetrics and Gynecology, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey; [2]Ankara Atatürk Training and Research Hospital, Radiology Clinic, Ankara, Turkey; [3]Department of Anatomy, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey

Objective: Structures called neural plates develop with thickening of the ectoderm layer of the central nervous system. Transcerebellar diameter is important for assessment of fetal development and chromosomal anomalies. We aimed to determine transverse cerebellum diameter of fetuses from 18-27 weeks gestation and to determine the correlation of transverse cerebellum diameter with maternal age, maternal body mass index, week of pregnancy and fetal parameters.

Methods: The study included 328 healthy fetuses with 18–27 weeks gestation of mothers aged from 19–40 years (mean: 28.52). The transverse diameter of the cerebellum of the fetuses was measured. Additionally, the fetal parameters of bi-parietal diameter (BPD), abdominal circumference (AC) and femur length (FL) were obtained. Later the fetuses were divided into the following groups; five groups based on maternal age of 20 years and younger, 21–25 years, 26–30 years, 31–35 years and older than 35 years; and four groups based on body mass index of 20–24.9, 25–29.9, 30–34.9 and more than 35.

Results: The cerebellum transverse diameter of fetuses with 18–27 weeks gestation was identified to vary from 19.93–30.10 mm (mean: 22.60 mm). Additionally, the mean and standard deviation of cerebellum transverse diameter and fetal parameters were determined according to maternal age, maternal body mass index and week of pregnancy. Later the correlations between cerebellum transverse diameter with fetal parameters, maternal age, maternal body mass index and week of pregnancy were examined. Fetal cerebellum transverse diameter was correlated with week of pregnancy and fetal parameters ($p<0.01$) but was not identified to correlate with maternal age and maternal body mass index ($p>0.01$). Comparison of fetal cerebellum transverse diameter with week of pregnancy identified a statistical difference between weeks ($p<0.05$), while comparison with age groups and body mass index groups did not determine a statistical difference ($p>0.05$).

Conclusion: Maternal age and maternal body mass index are significant factors affecting fetal development. We believe the data obtained as a result of our study will be beneficial to clinicians in relation to assessing fetal development, determining fetal age and identifying fetal anomalies.

Keywords: pregnancy, ultrasonography, cerebellum

P-63

Ultrasonic determination of fetal nuchal fold thickness in normal pregnancies and clinical assessment

İpek A[1], Desdicioğlu R[2], Desdicioğlu K[3]

[1]Radiology Clinic, Ankara Atatürk Training and Research Hospital, Ankara, Turkey; [2]Department of Obstetrics and Gynecology, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey; [3]Department of Anatomy, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey

Objective: Fetal nuchal fold thickness is a routine method used in the 2nd trimester of pregnancy. Increased fetal nuchal fold thickness may be associated with fetal anomalies. We aimed to determine nuchal fold thickness of fetuses from 18–23 weeks gestation and to determine the correlation of nuchal fold thickness with maternal age, maternal body mass index, week of pregnancy and fetal parameters.

Methods: The study included 253 healthy fetuses with 18–23 weeks gestation of mothers aged from 19–40 years (mean:

28.52). The nuchal fold thickness of the fetuses was measured. Additionally, the fetal parameters of bi-parietal diameter (BPD), abdominal circumference (AC) and femur length (FL) were obtained. Later the fetuses were divided into the following groups; five groups based on maternal age of 20 years and younger, 21–25 years, 26–30 years, 31-35 years and older than 35 years; and four groups based on body mass index of 20–24.9, 25–29.9, 30–34.9 and more than 35.

Results: The nuchal fold thickness of fetuses with 18–23 weeks gestation was identified to vary from 2.77–3.94 mm (mean: 3.45 mm). Additionally, the mean and standard deviation of fetal nuchal fold thickness and fetal parameters were determined according to maternal age, maternal body mass index and week of pregnancy. Later the correlations between fetal nuchal fold thickness with fetal parameters, maternal age, maternal body mass index and week of pregnancy were examined. Fetal nuchal fold thickness was correlated with week of pregnancy and fetal parameters ($p<0.01$) but was not identified to correlate with maternal age and maternal body mass index ($p>0.01$). Comparison of fetal nuchal fold thickness with week of pregnancy identified a statistical difference between weeks ($p<0.05$), while comparison with age groups and body mass index groups did not determine a statistical difference ($p>0.05$).

Conclusion: We believe data about fetal nuchal fold thickness obtained in our study will be beneficial for clinicians in terms of assessing fetal development and identifying fetal anomalies.

Keywords: pregnancy, ultrasonography, fetal nuchal fold thickness

P-64

Comparative investigation of the anatomy practical exam types of faculty of medicine

Özen KE[1], Erdoğan K[1], Yarar B[1], Çizmeci G[1], Ay Keselik G[1], Elmalı F[2], Malas MA[1]

[1]Department of Anatomy, Faculty of Medicine, Izmir Katip Çelebi University, Izmir, Turkey; [2]Department of Biostatistics, Faculty of Medicine, Izmir Katip Çelebi University, Izmir, Turkey

Objective: The aim of this study is to investigate comparatively the classical tag (ring) exams with the slide exams which are preferred as the practical anatomy exams, in order to contribute the anatomical education program of Izmir Katip Çelebi University.

Methods: The results of the anatomy practical exams in last five years (2013–2014 – 2017–2018) belong to first (N_1: 651) and second (N_2: 785) year medical students of the Izmir Katip Çelebi University Faculty of Medicine which features an integrated curriculum, are evaluated retrospectively. All data of the students who couldn't take any exam due to any reason, and data of the practical exams of the blocks of integrated curriculum which are not executed due to any reason are all excluded.Descriptive statistics, correlations and statistical comparisons of the tag (ring) exams and the slide exams which are the components of the integrated blocks are calculated.

Results: 29 integrated blocks were evaluated in this study. There was correlation between slide and tag (ring) exams in all integrated blocks ($p<0.001$). It was determined that the strongest correlation was in locomotor system block in 2017–2018 (0.779) and the weakest correlation was in circulatory and respiratory systems block in 2015–2016 (0.404). Tag exams scores were higher statistically significant ($p<0.05$) in 10 integrated blocks. Slide exams scores were higher statistically significant ($p<0.05$) in 13 integrated blocks. There was no statistically significant difference between practical exam types in 6 exams.

Conclusion: We hope the results of our study will be beneficial to studies about assessment and evaluation systems and increasing the quality of anatomy education in faculty of medicine.

Keywords: anatomy education, anatomy practical exam, tag (ring) exam, slide exam, ölçme-değerlendirme, assesment-evaluation

P-65

Variations of forearm and hand muscles: four case reports

Öztürk K, Canbaloğlu AE, Şanlı OC, Dursun A

Department of Anatomy, Faculty of Medicine, Süleyman Demirel University, Isparta, Turkey

Objective: Because the forearm and hand are the most commonly used regions of the body, injuries in this region are common. For this reason, the normal and variational anatomy of the muscles in this region is very important for clinicians. We aimed to present four case reports in the forearm and hand muscles.

Methods: During the dissection education, four variations in the forearm and hand area of the left upper extremity of a 73-year-old male cadaver were found.

Results: First of these cases; the absence of palmaris longus muscle, second; the absence of flexor digiti minimi muscle, third; extensor pollicis longus and brevis muscles had two tendons. Two of these tendons joined together to form a third tendon. In the fourth case, a long thin tendon emerging from the extensor carpi radialis longus muscle, extending distally, it was found inserting into an accessory muscle belly originating from the proximal phalanx of the first finger that is located laterally of the abductor pollicis brevis muscle.

Conclusion: Knowledge of these variations are important for clinicians who interests this area and routine surgical procedures.

Keywords: forearm muscles, hand muscles, variation

P-66

Evaluation of acromial index, critical shoulder angle, lateral acromial angle and coracohumeral distance on MRI rotator cuff tears

Yılmaztürk K[1], Gülenç B[2], Kuyucu E[3], Bülbül AM[1]

[1]Department of Anatomy, School of Medicine, Istanbul Medipol University, Istanbul, Turkey; [2]Department of Orthopedics and Traumatology, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

Objective: The supraspinatus, infraspinatus, teres minor and subscapularis muscles that connect the scapula to the humerus are all called "rotator cuff" muscles of the shoulder joint at once. Subscapularis supports the shoulder joint from anterior, supraspinatus from the superior, infraspinatus and teres minor from the posterior aspect. Thus, these muscles form a structure that surrounds the shoulder joint except the inferior aspect. Shoulder muscle activity balances translational forces with compressive forces to maintain the stability of the shoulder joint during movement. Therefore, the rotator cuff plays an important role in the static and dynamic stability of the shoulder joint. Factors that cause rotator cuff degeneration are divided into extrinsic factors and intrinsic factors. Extrinsic factors are the causes of bony and soft tissues. Instrinsic factors are events that occur within the tendon itself. In this study, the acromial index, critical shoulder angle, lateral acromial angle, and coracohumeral distance were evaluated in order to shed light on the theories about rotator cuff tear.

Methods: In this retrospective study, measurements were made on a total of 100 images, 50 of which were rotator cuff ruptures and 50 which did not have rotator cuff ruptures in different age groups (20–80) with MR shoulders. Those with previous inflammatory disease and those with trauma traumas were not included in the study.

Results and Conclusion: There was no significant difference in acromial index and coracohumeral distance ($p>0.05$) in the patient group. Difference between the control group and patient group for lateral acromial angle and critical shoulder angle parameters were statistically significant ($p<0.05$).

Keywords: lateral acromial angle, acromial index, critical shoulder angle, coracohumeral distance, scapular geometry

P-67

A case report: polyorchidism

Karacan K[1], Karacan A[2], Baylan H[1], Sınav A[1]

[1]Department of Anatomy, Faculty of Medicine, Sakarya University, Sakarya, Turkey; [2]Department of Radiology, Faculty of Medicine, Sakarya University, Sakarya, Turkey

Objective: Polyorchidism is an extremely rare accessory anatomical variation and there are more than two testicles in the scrotum. The left side polyorchidism is appeared three times frequent than the right side. The cases are detected incidentally between 15 and 25 years of age, during diagnosis of infertility or other clinical pathologies. We aimed to present a case about polyorchidism, rarely seen on the right side, in our study.

Methods: During the clinical examination of a 36-year-old male patient who was investigated for the reason of infertility, a rigid and mobile mass of approximately 1 cm was found adjacent to the testis in the right scrotum.

Results: Right and left testis were at normal size in the ultrasonographic examination. In the right scrotum, a 12 mm tissue adjacent to the testicle was detected with a uniform contour and same echogenicity with the testis. Advanced examinations were done considering this tissue could be an accessory testis as a preliminary diagnosis. Pelvic MR images confirmed the presence of a second testis in the right scrotum. Biochemical tests, gonadal hormone levels and tumor markers were found at normal limits.

Conclusion: Poliorchidism, also called "supernumerary testis" in the literature, is a rare variation that is not included in classical anatomy textbooks. However, it is necessary to perform a differential diagnosis among clinically important cases including spermatocele, hydrocele, epididymal cyst and aberrant epididymis which can be perceived as intrascrotal mass. A careful ultrasonography is often sufficient for differential diagnosis. On the ultrasonograph, the accessory testis shows a similar echo pattern with a normal testis. When ultrasonographic findings are insufficient for discrimination Color Doppler US and MR imaging can also be used for diagnosis. On those imaging techniques, the accessory testis has similar imaging features with a normal testis has. As a result, polyorchidism is usually detected incidentally, and differentiation from other scrotal masses is a clinically important requirement. Clinical diagnosis should be verified by histopathologic examination of the affected tissue, although the palpable mass may be detected by ultrasonography or other radiological methods. In the treatment, asymptomaticcases that make no problem can be followed after the malignancy has been excluded by biopsy. The frequency of this rare anatomic variation that is not included in the anatomy textbooks should be determined by restrospective scanning studies.

Keywords: polyorchidism, supernumerary testis, infertility

P-68

Investigation of lower extremity muscle development in human fetuses using microscopic method

Erdoğan K[1], Ay Keselik G[1], Akyol Bahçeci S[2], Çizmeci G[1], Malas MA[1]

[1]Department of Anatomy, Faculty of Medicine, Izmir Katip Çelebi University, Izmir, Turkey; [2]Department of Histology, Faculty of Medicine, Izmir Katip Çelebi University, Izmir, Turkey

Objective: This study is aimed to investigate lower extremity muscle development in human fetuses using microscopic method in prenatal period.

Methods: Aged between 12–38 gestational weeks 20 human fetuses without external anomalies or pathology which obtained from Department of Anatomy of Medical Faculty of Izmir Katip Çelebi University were used in our study. The specimens were taken from gluteus maximus, biceps femoris, quadriceps femoris, triceps surae and tibialis anterior muscles of lower extremity of fetuses bilaterally. After standard tissue processing, it was investigated muscle development during fetal period with determining the muscle fiber number and the parenchyma-stroma ratio from histologic section of muscle specimens using stereological methods by light microscope.

Results: Muscle fiber number and parenchyma-stroma ratio were showed an increasing trend in fetuses from 12th to 38th gestational weeks during the fetal period bilaterally. There were positive correlation between gestational age and muscle fiber numbers and parenchyma-stroma ratio in all muscle specimens ($p<0.001$). It was determined the difference between right and left extremity muscles about muscle fiber numbers and the parenchyma-stroma ratio, furthermore the left extremity had more muscle fibers ($p<0.05$).

Conclusion: We hope that the knowledge obtained by our study about development of lower extremity muscle during intrauterine period will provide useful contributions to clinical practices and future investigations. Also we consider that the results about determining anomalies and pathologies related to development of extremity muscles will be beneficial to investigations, diagnosis and treatments in disciplines such as obstetric, perinatology and fetal pathology.

Keywords: muscle development, fetal period, muscle fiber number, parenchyma-stroma ratio, stereology

P-69

Location of infraorbital foramen with reference to soft tissue and palpable landmarks in human fetuses

Kastamoni Yaşar Y, Yazar İyigün K, Öztürk K, Dursun A

Department of Anatomy, Faculty of Medicine, Süleyman Demirel University, Isparta, Turkey,

Objective: The location of the infraorbital foramen (IOF) is important for surgical or anesthetic procedures. The purpose of our study was to determine the location of IOF relative to soft tissue and palpable landmarks in human fetuses.

Methods: 25 fetuses between 21–40 weeks of gestational age (13 females, 12 males) were dissected on both sides to expose infraorbital foramens (IOF) and were photographed from the front view using a digital camera with a scale bar. Measurements were made indirectly via ImageJ software. SPSS 20 for Windows software was used for statistical analysis of the measurements. Closest distances between IOF and the horizontal line through the infraorbital margin (LIOM), the vertical line through the lateral orbital margin (LLOM), the vertical line tangent to the lateral edge of the ala of the nose (LAN), the horizontal line passing through subnasale (LSN) and infraorbital margin (IOM) were measured for both sides. We also observed whether IOF could be on the line joining the most lateral point of lateral orbital margin and the lateral edge of ala of the nose. IOF was considered on the line if the distance was less than 1mm.

Results: There was no statistically significant difference between genders or right and left sides in all measurements. According to the trimester, there was a significant difference only in the distance between IOF and LLOM. 64% on the left and 68% on the right sides, IOF was found on the line extending from lateral orbital margin to ala of the nose.

Conclusion: We believe that the data obtained in our study will be helpful with understanding the change of the position of IOF during the fetal period, and also be useful during oral or maxillofacial surgery in newborns.

Keywords: infraorbital foramen, fetus, cadaver, newborn

P-70

Functional recovery after cut injury of the sciatic nerve: effect of a prostacyclin analogue

Sarıkçıoğlu L

Department of Anatomy, Faculty of Medicine, Akdeniz University Antalya, Turkey

Objective: İloprost is a prostacyclin analogue which is produced by arachidonic acid and it inhibits platelet aggregation and increases microvascular circulation and it is a strong vasodilatator agent.

Methods: In the present study it is aimed to study its effects on functional recovery after cut injury of the sciatic nerve.

Results: After six postoperative weeks sciatic nerve function were analyzed by walking pattern analysis, pinch test (sensory function analysis) and ultrastructural analysis.

Conclusion: As a result, it has been found that iloprost showed a beneficial effect on sciatic nerve injury by it effect on microvascular circulation.

Keywords: iloprost, sciatic nerve injury

P-71

Suitability of a 3-way-conduit (isogeneic trifurcated aorta) for facial nerve reconstruction: experimental study in rats.

Bendella H[1], Rink S[2], Manthou M[3], Papamitsou T[3], Nakamura M[1], Angelov DN[4], Sarıkçıoğlu L[5]

[1]Department of Neurosurgery, University of Witten/Herdecke, Cologne Merheim Medical Center (CMMC), Cologne, Germany; [2]Department of Prosthetic Dentistry, School of Dental and Oral Medicine, University of Cologne, Cologne, Germany; [3]Department of Histology and Embryology, Aristotle University, Thessaloniki, Greece; [4]Department of Anatomy I, University of Cologne, Germany; [5]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: The "post-paralytic syndrome" after facial nerve reconstruction has been attributed to (i) malfunctioning axonal

guidance at the fascicular (branches) level, (ii) supernumerary collateral branches from transected axons, and (iii) intensive intramuscular terminal sprouting of regenerating axons which causes polyinnervation of the neuromuscular junctions (NMJ). The first two reasons were managed by an innovative approach which should supply the re-growing axons optimal conditions to elongate and selectively re-innervate their original muscle groups.

Methods: The transected facial nerve trunk was inserted into a 3-way-conduit (from isogeneic rat abdominal aorta) which should "lead" the re-growing facial axons to the three main branches of the facial nerve (r. zygomaticus, r. buccalis and r. marginalis mandibulae). The effect of this method was tested also on facial nerve axons after facial-facial anastomosis (FFA). Coaptation classic FFA (facial-facial anastomosis) served as controls.

Results: When compared to its classic coaptation alternative, 3-way-conduit operation of FFA promoted a trend for reduction in the proportion of double-labelled perikarya (indicative of collateral axonal branching). In contrast, polyinnervation of NMJ in the levator labii superiors muscle was increased and vibrissal (whisking) function worsened. The use of 3-way-conduit provides no advantages to classic coaptation. Should the latter be impossible (too large interstump defect), this type of reconstruction may be applied.

Conclusion: The option of inserting 3 separate interpositional nerve grafts should be tested.

Keywords: facial nerve, hypoglossal nerve, facial-facial anastomosis (FFA), 3-way-conduit

P-72

Evaluation of the brainstem volume and intracranial volume ratio

Karakoyun ZN[1], Öz N[1], Alkan E[1], Acer N[2], Süzen LB[1]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [2]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey

Objective: It is known that the human brain is influenced by many factors during its development. Gender is one of these factors. In many studies it has been shown that men have larger brains. However, at the literature, gender's effect on brainstem has had different results.The aim of this study is to investigate the effect of gender on brainstem volume and the gender factor on the brainstem to intracranial volume ratio.

Methods: Magnetic resonance images of 12 healthy subjects, 6 men and 6 women, aged 45–75 years, who had no pathological findings in the brainstem, were used in the study. Magnetic resonance images were analyzed in VolBrain software, an automatic parceling method. The mean of brainstem and intracranial volume results were calculated and the ratio of brainstem to intracranial volume was evaluated.

Results: As a result of measurements, average brainstem volume of male subjects was 23.91±1.58, average intracranial volumes was 1442.65±97.06, and ratio of brainstem to intracranial volume was 1.67±0.14. For female subjects, average brainstem volume was 22.16±1.76, average intracranial volume was 1297.14± 112.32, and ratio of brainstem to intracranial volume was 1.71±0.05. The brainstem and intracranial volume results of male subjects are greater, while the ratio of brainstem to intracranial volume is found to be higher in women.

Conclusion: Knowing the factors that affect brain morphology can help to brighten the mechanisms which are related with these factors.

Keywords: brainstem, VolBrain, volume, gender

P-73

A rare case report of os acromiale: anatomy and clinical significance

Bilgin C[1,2], Yıldız Yılmaz M[2], Gökalp G[1], Şendemir E[2]

[1]Department of Radiology, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey; [2]Department of Anatomy, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey

Objective: Os acromiale, a variation of acromion ossification centers, is a result of a fusion defect. On axillary radiographs, the normal acromion is in the form of a single bone structure. However, in some cases, it has been observed that there is no integrity of this bone structure. Acromion has three ossification centers, preacromion where coracoacromial ligament and anterior fibers of the deltoid muscle attach, mesoacromion the site where the middle fibers of the deltoid muscle attach and metaacromion where the posterior fibers of the deltoid muscle attach. The most common site of os acromiale is between meso and meta acromion. Os acromiale is a rare condition and often cannot be diagnosed in patients with shoulder pain. In addition, symptoms such as subacromial impingement syndrome and rotator cuff tears may also occur.

Methods: A 67-year-old female patient was admitted to the rheumatology clinic with the complaint of right shoulder pain.

Results: A bilateral os acromiale variation was found in the extremity computerized tomography of the patient who had limited flexion and abduction in shoulder movements. A separate bone fragment was found between right os acromiale and acromion, and ipsilateral double os acromiale was considered on the right shoulder.

Conclusion: Although the incidence of os acromiale is reported between 1.3% and 15%, it is usually diagnosed incidentally on radiographs. While os acromiale is mostly reported unilaterally, the incidence of bilateral involvement ranges from 33.3% to 62% in the cases. For the ipsilateral double os acromiale, the incidence is not a common occurrence in the literature. It should be kept in mind that os acromiale may cause compression syndromes and pain, although rotator cuff disease and glenohumeral instability are more common in the etiology

of shoulder pain. Nonsteroidal anti-inflammatories, steroid injections, physical therapy and surgical applications are used in the treatment of os acromiale which is easily recognized in radiographs, computed tomography, and magnetic resonance imaging. Better identification of anatomy of the os acromiale and frequency in the population reveals more clearly the role of os acromiale in shoulder pathology.

Keywords: os acromiale, variation, ossification

P-74

Evaluation of cribriform plate of ethmoid bone in fetus cadavers: a morphometric study

Celep M, Özyaşar AF, Çan MA, Uluutku MH

Department of Anatomy, Faculty of Medicine, Karadeniz Technical University, Trabzon, Turkey

Objective: It is asserted that olfactory sensation is the earliest developing special sense in fetus. After 30 weeks of gestation, fetuscan distinguish odorous molecules in amniotic fluid. In previous studies, it was suggested that surface area of cribriform plate may indicate olfactory capacity. The aim of this study is to have an idea about the development of olfactory preference and relationship between olfactory capacity and cribriform plate by comparing right and left surface area with each other in fetus cadavers that haven't exposed any environmental factors yet.

Methods: This study was performed with 17 fetus cadavers (11 females, 6 males) aged between 20–35.5 gestational weeks. Fetus cadavers were fixed with %10 formaldehyde. Crista galli length, right and left surface area of cribriform plate and distance between right and left anterior clinioid process was measured. The measurements were calculated with ImageJ software.

Results: There was no significant difference between the right and left cribriform plate surface areas in the whole fetus cadavers group (p=0.827). We found a considerable difference in terms of right and left cribriform plate areas among the fetuses older and younger from 30 weeks (right; p=0.017, left; p=0.00). A significant difference was found in the average length of crista galli among fetuses older and younger from 30 weeks (p=0.00). As the total cribriform plate area and crista galli lengths increase, the distance between anterior clinoid processes also increases (cribriform plate; p=0.809, crista galli; p=0.909).The measurements carried out in this study show that there is no difference between right and left cribriform plate fields. However, structures derived from the neural crest demonstrate similar developmental correlations.

Conclusion: In order to talk about olfactory preference, it is crucial to evaluate in terms of both olfactory bulb volumes and the number of nerve fibers with the nerve thickness.

Keywords: cribriform plate, fetus, olfactory nerve

P-75

Ultrastructural investigation of the effect of melatonine and vitamin C on damage in rat bulbus olfactorius after chronic cellulosic thinner inhalation

Önder M[1], Gürer Eİ[2], Oğuz N[1], Yolcular OB[3]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [2]Department of Pathology, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [3]Department of Biostatistics and Medical Informatics, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: The effect of melatonin and c vitamin on the damage to the bulbus olfactorium after chronic cellulosic thinner inhalation was investigated in rats In our study, it was aimed to investigate the ultrastructural effect of melatonin and vitamin c on the damage caused by chronic inhalation of cellulosic thinner in rat bulbus olfactorius.

Methods: In our study, 30 male Wistar rats of the genus Rattus norvegicus weighing about 350–400 gr were used. The rat groups: Group 1, Group 2 and Group 3. Group 1: Ultrastructural analysis was performed on the olfactory bulb after 6 weeks of treatment without any treatment in this group. Group 2: In this group, the olfactors bulb were taken and analyzed after the thinner was inhaled twice a day for 6 weeks. Group 3: In this group, thinner was infused twice a day for 6 weeks, followed by intraperitoneal melatonin and C vitamin, then ultrastructural analysis of bulb olfactors

Results: In the semi-thin sections of the control group, an oval nucleus, granular chromatin were seen in the mitral cell layer. Compared with the control group of the mitral cell layer in the semi-thin sections of the thinner inhalation group, there was condensation in the oval nucleus decrease in the density of cytoplasm was reported.

Conclusion: In our study; we observed a decrease in the mitochondrial density in the mitral cells, dilation in the thinner receiving group. We think that the effects of thinner abuse on health should be determined.

Keywords: inhalation, olfactory bulb, thinner

P-76

Evaluation of morphometric measurements of scapula

Meker M[1], Tokpınar A[2], Değermenci M[1], Öztürk M[1]

[1]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey; [2]Department of Anatomy, Faculty of Medicine, Yozgat Bozok University, Yozgat, Turkey

Objective: Scapula is aunique irregular bone with a complex anatomy. Details of the anatomy of the scapula should be known for the surgical interventions to be applied in fractures, dislocations, arthritis and various tumoral conditions of the shoulder joint. Furthermore, knowing the morphometric measurements of the scapula can be useful in the forensic field. We aimed to present some morphometric measurements of the scapula in detail in this study.

Methods: We performed our study on a total of 20 (10 right and 10 left) scapula of unknown age and sex in Erciyes University Anatomy Department. 20 parameters are used in our measurements. These parameter measurements were made using a 0.01 millimeter sensitive electronic caliper. The obtained data were statistically analyzed using the SPSS program.

Results: The average length of the scapula in the anatomy laboratory was found to be 142.79±15.50 mm in the 10 scapulae, 10 in the right, 10 in the left, 3.36±1.03 mm in the medial margin of the scapula, 7.08±1.37 mm in the angulus inferior. The mean coracoacromial distance was 30.16±5.36 mm, the medial lateral diameter of the cavitas glenoidalis was 24.83±3.37 mm, and the superior diameter of the cavitas glenoidalis was 35.76±4.07 mm.

Conclusion: The knowledge of morphometric differences due to sex and race in scapula may be beneficial to anthropology and some clinical fields, especially forensic medicine. Morphometric measurements of our work were presented in detail. It is assumed that the length differences between our work and other morphometric studies on the scapula originate from racial differences. We also think that the measurement results can be evaluated in surgical applications.

Keywords: anatomy, morphometry, scapula

P-77

Calcaneus length measurements

Öztürk M, Meker M, Tahta Y

Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey

Objective: Anthropometric measurements are important in terms of reflecting many identifying information (age, sex, etc.) of the individual or the collective. The data obtained from these measurements are frequently used in many areas such as anatomy, orthopedic surgery, physical therapy and rehabilitation departments, and forensic medicine. Recently calcaneus has been started to be used anthropometrically because the calcaneus bone may be better protected due to the poor preservation of the skull and pelvis bones used for sex and age discrimination. We think that the anthropometric measurements of calcaneus which we calculated in this study will contribute to the formation of both anthropometric index and surgical field.

Methods: In our study, 20 well-preserved calcaneus (10 right and 10 left) were used in the Anatomy Laboratory of Erciyes University without sex discrimination. A total of 5 measurements were made in these calcanei, with maximum length, body height, minimum width, force arm length and force arm width. Millimeter calipers were used in the measurements. These data were then statistically analyzed using the SPSS program.

Results: The maximum length of the right calcaneus was 68.63±2.99 mm, the minimum width was 18.86±2.06 mm, the body height was 47.96±3.15 mm, the force length was 44.46±2.02 mm and the force The arm width was calculated as 37.41±2.59 mm. The maximum length of the left calcaneus was 72.2±3.62 mm, the minimum width was 21.56±1.94 mm, the body height was 46.8±1.54 mm, the force arm length was 45.59±2.17 mm and the force arm width was calculated as 38.55±2.33 mm. In this study we have made anthropometric measurements of calcaneus.

Conclusion: We think that these measurements will contribute to the surgical interventions to be applied to calcaneus and to the formation of anthropometric index.

Keywords: anatomy, anthropometry, calcaneus

P-78

Effect of ligation of the superior gluteal artery after sciatic nerve injury

Sarıkçıoğlu L, Sindel M

Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: Epineurium has a rich vascular plexus that also has highly adaptation mechanism to direct blood flow. However, due to late reconstruction the nerve stumps nerve ischemia or anoxia may be occured after nerve injury. This is why, it is difficult to understand which parameter has a role on injury. In the present study, we studied effect of ligation of the superior gluteal artery on sciatic nerve injury.

Methods: After six postoperative weeks sciatic nerve function were analyzed by walking pattern analysis (sciatic function index), pinch test (sensory function analysis) and ultrastructural analysis.

Results and Conclusion: As a result, we found that ligation of tjhe superior gluteal artery has a minor role on sciatic nerve injury since vascular flow may have been compansated from other blood sources.

Keywords: superior gluteal artery, sciatic nerve injury

P-79

Ultrastructural evaluation of cuprizone induced demyelination and remyelination in corpus callosum

Öztürk S[1], Aytaç G[2], Göksu K[3], Tanrıöver G[3], Akkoyunlu G[3], Sindel M[1]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [2]Department of Anatomy, Faculty of Medicine, Yüksek İhtisas University, Ankara, Turkey; [3]Department of Histology and Embryology, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: Multiple sclerosis (MS) is a chronic demyelinating disease of the central nervous system (CNS) that affects more than 2 million people worldwide with many physical, psy-

chosocial and economic burdens. The underlying mechanisms of MS disease are still not fully understood. The aim of this study was to investigate the effects of the cuprizone on demyelination of corpus callosum (CC) and to obtain more information about MS pathogenesis with ultrastructural evaluation of remyelination.

Methods: In this study, C57BL/6 type mice were used. Four groups were designed as: demyelination/control and remyelination/control. Demyelination group was given 0.2% cuprizone via gavage for 6 weeks. Remyelination group was given 0.2% cuprizone via gavage for 6 weeks and then with normal chow for 6 weeks. Control groups were fed with normal chow. In order to evaluate demyelination and remyelination, the g-ratio of nerve fibers in CC was calculated with electron microscopy. Immunohistochemically, CC myelin basic protein (MBP) expression was evaluated.

Results: The g-ratio of the demyelination group was calculated 0.86±0.07, the g-ratio of the demyelination control group was calculated 0.66±0.1, the g-ratio of the remyelination group was calculated 0.83±0.06, the g-ratio of the remyelination control group was calculated 0.76±0.09. In the demyelination group, the intensity of MBP expression was decreased when compared with demyelination control group.

Conclusion: In conclusion, 2% cuprizone causes damage in nerve fibers both ultrastructurally and immunohistochemically. In this context, it is thought that the cuprizone model could provide a ground for new projects related to demyelinating diseases of the CNS.

Keywords: demyelination, remyelination, electron microscopy, ultrastructural

P-80

Uncommon termination of the cephalic vein: case report

Aygün D, Çotur A, Ekici S, Özdemir H, Özdemir MB

Department of Anatomy, Faculty of Medicine, Pamukkale University, Denizli, Turkey

Objective: Region of the cephalic vein where it drains into axillary vein is common place for interventions to the body. For this reason normal anatomy and variations of this region should be known.

Methods: During routine dissection of a 61 year old male cadaver unilateral variation was observed.

Results: The cephalic vein lay normal course in forearm and arm. It ascends in deltopectoral groove, then it passed in front of clavicle and drain into internal jugular vein.

Conclusion: These variations are important for clinicans to do right applications.

Keywords: cephalic vein, variation, internal jugular vein

P-81

The variation of major cardiac vessel: a case report

Ünver Doğan N[1], Fazlıoğulları Z[1], Koplay M[2], Pirinç B[1], Karabulut AK[1]

[1]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [2]Department of Radiology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: Major cardiac vessel variations are the least frequently prenatally diagnosed congenital cardiac abnormalities. Aortic arch variation identified in prenatal period is associated frequently with other cardiac/non-cardiac malformations, notably tracheal or esophageal compression and microdeletions 22q11.

Methods: 256-slice multidetector computed tomography (MDCT) coronary angiography images of a male baby image who presented with newborn respiratuar dyspnea to the Selcuk University Medical Faculty were reviewed.

Results: We observed expansion in the right chambers of the heart and the heart in the mid site mesocardiac. The aorta emerged from the right ventricle with a diameter of 14 mm. Aorta descendens was observed to be located to the right of the vertebra. In addition, presence of ventricular septal defect and hypoplasic atrium in the superolateral neighborhood of left ventricle were detected. Although the incidence of arcus aorta anomalies is not known, the adult rate is approximately 1/1000. In arcus aorta anomalies, it is very important to identify the structure and branching of vessels, and to determine the presence of other variations. As our case, accompanying anomalies significantly affect the prognosis and postnatal survival of the patient.

Conclusion: MDCT is very important in the identification of arcus aorta anomalies and other accompanying cardiac anomalies.

Keywords: arcus aorta variation, ventricular septal defect, MDBT

P-82

Direct branching of a. hepatica dextra, a. hepatica sinistra and a. gastroduodenalis from truncus coeliacus: a case report

Güner N[1,2], Işıklar S[3], Kurt MA[1], Nas O[4]

[1]Department of Anatomy, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey; [2]Department of Anatomy, Faculty of Medicine, Lokman Hekim University, Ankara, Turkey; [3]Medical Imaging Techniques Program, Health Services Vocational High School, Bursa Uludağ University, Bursa, Turkey; [4]Department of Radiology, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey

Truncus coeliacus is a short (1.25 cm) and thick (7–20 mm) vessel, branches from the aorta abdominalis 1–2 cm below the hiatus aorticus at T12-L1 level. This vessel usually divides into three branches; a. gastrica sinistra, a. hepatica communis and a. spleni-

ca. A. hepatica communis then branches into a. gastroduodenalis, a. gastrica dextra a. hepatica propria. A. hepatica propria enters into the porta hepatis through lig. hepatoduodenale where it divides into two branches; r. dexter and r. sinister that supply blood for liver. In this study, a variation of truncus coeliacus observed in a 39 year old female patient diagnosed with haemangioma in the right lobe of her liver and directed to Interventional Radiology Unit of Uludağ University Faculty of Medicine Radiology Department for treatment of haemangioma through embolization, is presented. Coeliac DSA images obtained from the case following the catheterization from a. femoralis under local anesthesia, revealed the presence of penta-furcation of truncus coeliacus ocur by direct branching of ramus dexter and ramus sinister of a.hepatica propria and a. gastroduodenalis from the truncus coeliacus. In some cases, blood supply of the liver may be provided by a typical hepatic arteries called "replaced hepatic arteries" branching from various arteries of the region, instead of classical anatomical blood supply of liver. In the literature; the incidence of replaced a.hepatica dextra that supply right liver lobe and a. hepatica sinistra that supply left lobe are reported as 11–12% and 3.8–10%, respectively. The branching characteristic found in this case is rare and the incidence of truncus coeliacus penta-furcation similar to this case was reported as12.9%in the literature. We think that the knowledge on the arterial variations of thisregion would be crucial in the planning of all surgical and radiological interventions performed on the upper abdomen region.

Keywords: a. hepaticadextra, a. hepatica sinistra, truncus coeliacus, replaced hepatic artery, variation

P-83

Estimating the nasal morphological features of Anatolian population for forensic craniofacial reconstruction

Güner N[1,2], Babacan S[1], Işıklar S[3], Kafa İM[1], Gökalp G[4]

[1]Department of Anatomy, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey; [2]Department of Anatomy, Faculty of Medicine, Lokman Hekim University, Ankara, Turkey; [3]Medical Imaging Techniques Program, Vocational School of Health Services, Bursa Uludağ University, Bursa, Turkey; [4]Department of Radiology, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey

Objective: Craniofacial reconstruction is one of the techniques used in forensic sciencesto rebuild the probable antemortem face of unknown human skulls. The nose has considerable diversity and these varieties have an important significance for craniofacial reconstructions. The aim of current study was to determine the morphology of the nasal characteristics of Anatolian population and develop the regression formulas in order to estimate the nose shape using the measurements of the skulls.

Methods: The current study was conducted on three-dimensional (3D) computed tomography cranial images. The images belonging 50 adult patients (25 male, 25 female) were taken from Radiology Department of Uludağ University Medical Faculty Hospital. Eighteen parameters on bony structure and twenty four parameters on soft tissue were measured using Image J software. SPSS 22.0 software was used for statistical analyses.

Results: The regression formulas were developed in order to estimate the nose morphologybelonging the skull parameters. The formulas such as; "The nasofrontal angle= 107.710 + (8.87 × The distance between nasion and spina nasalis anterior) + (2.41 × bizygomatic facial width) – (9.39 × the width of apertura piriformis) – (14.62 × the height of apertura piriformis) Adjusted R2=0.687; S.E=12.41. The height of nose= 1.096 + (0.43 × The distance between nasion and spina nasalis anterior) + (0.36 × The distance between Rhinion and spina nasalis anterior) Adjusted R^2=0.693; S.E=0.35 were developed using the correlated parameters between the bony structure of the skull and the soft tissue.

Conclusion: The accurate nasal shape prediction one of the most important stages for theidentification or reconstruction of the unknown skulls. We believe that the regression formulas we developed in this study will be helpful for different approaches used in the craniofacial reconstruction studies.

Keywords: nose morphology, craniofacial reconstruction, forensic sciences, nose shape

P-84

Anatomic localization and surgical importance of asterion

Kılıç Şafak N, Türkmen B, Yücel AH

Department of Anatomy, Faculty of Medicine, Çukurova University, Adana, Turkey

Objective: Asterion is the meeting point of sutura parietomastoidea, sutura occipitomastoidea and sutura lambdoidea and located on the fonticulus posterolateralis. Asterion is an important surgical landmark for reaching fossa cranii posterior structures. And also it emphasize it's closely relationship with sinus sigmoideus and sinus transversus. The aim of the study is to investigate morphometry of the asterion which can be useful for the posterolateral cranial surgical approaches.

Methods: This study was performed on 17 unknown sex and age dry cranium in the Department of Anatomy, Faculty of Medicine, Çukurova University, Adana. Deformed specimens were exluded from our study. The distance between asterion and the root of the arcus zygomaticus, protuberantia occipitalis externa, apex of the processus mastoideus were measured by using digital caliper nearest 0.1 mm.

Results: Mean distances were found as followingly: from asterion to the root of the arcus zygomaticus: 58.85±6.61 mm (right side) and 59.99±7.92 mm (left side), to protuberantia occipitalis externa: 65.17±6.30 mm (right side) and 65.41±8.84 mm (left side) and to apex of the processus mastoideus; 49.99± 3.59 mm (right side) and 48.90±5.12 mm (left side).

Conclusion: This data will also be helpful to fossa cranii posterior surgeries to neurosurgeons by decreasing risk factor.

Keywords: Asterion, fonticulus posterolateralis, fossa cranii posterior surgery, morphometry

P-85

Comparison of gender and hand preference of fingerprint types

Akbaytürk N, Çan MA, Uluutku MH

Department of Anatomy, Faculty of Medicine, Karadeniz Technical University, Trabzon, Turkey

Objective: The skin surface of the fingers on the palmar face is made up of patterns made by the skin folds that are shaped in personality, embryonic life.

Methods: In this study, the types of fingerprints of the fingers on the right and left total of 753 hands of 377 students who were educated at KTÜ Faculty of Medicine were evaluated in relation with hand preference and gender. The hand preference of the subjects was determined by the Edinburgh Hand Preference Questionnaire, grouped as dominant right hand, weak right hand, ambidextrous, weak left hand and dominant left hand. Fingers placed on a scanner were received to identify their fingerprint type.

Results: Examination of all images showed that fingerprints were classified into three groups. Fingerprints were recorded as types of Arch (simple arch and tented arch), Loop (radial loop and ulnar loop) and Whorl (spiral whorl, symmetric whorl, double loop whorl, central packet whorl, accidental whorl) types and subtypes. Fingerprint types were evaluated according to hand preference and gender. As a result of the statistically evaluations, there were no statistically significant differences between the fingerprints of the pollex, digitus medius, digitus anularis and digitus minimus, hand preference and gender. There was a significant difference between the gender of the left index fingerprint types (p=0.048). However, no significant difference was found in the binary comparisons made with the post-hoc test.

Conclusion: The biometric measurements and analyzes to be obtained from studies that will be performed with a high number of subjects will be based on identification, recognition, etc. and it was thought to be important for forensic science applications.

Keywords: hand preference, fingerprint, right-left hand

P-86

Comparison of gender and hand preference of palmar crease types

Akbaytürk N, Çan MA, Uluutku MH

Department of Anatomy, Faculty of Medicine, Karadeniz Technical University, Trabzon, Turkey

Objective: People's hand sets, fingertips, soles of the feet, and epidermis lines have special patterns shaped in embryonic life, formed by folding.

Methods: In this study, the types of the palmar creases on the right and left total of 753 hands of 377 students who were educated at KTÜ Faculty of Medicine were evaluated in relation with hand preference and gender. The hand preference of the subjects was determined by the Edinburgh Hand Preference Questionnaire. To view palmar creases, each hand was scanned with the fingers in the normal abduction, and the images were examined and typed. Proximal and distal transverse creases were classified as normal type, forked type, cascade type, branched type, broken type, and accessory type. Thenar crease was classified as normal type, double type, forked type, cascade type, branched type, broken type, short type.

Results: In females and males; proximal transverse, distal transverse, and thenar crease were seen to be the most frequently forked type as a result of analyzes. Palmar crease types distribution; when evaluated according to hand preference and gender, there was no statistically significant difference.

Conclusion: In hand surgery applications, palmar creases to be used as an incision line in topography and access to deep tissues were tried to be described in detail.

Keywords: hand preference, palmar creases, right-left hand

P-87

The prevalence of os odontoideum: a radiographic study

Keleş Çelik N[1], Şekerci R[1], Öğüt E[1], Cakın H[2], Gediz T[3]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [2]Department of Neurosurgery, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [3]Department of Neurosurgery, Antalya Education and Research Hospital, Antalya, Turkey

Objective: Os odontoideum, located in the craniocervical region, is a separate ossicle in variable dimensions and is an accessory bone formed by the separation of the odontoid process from the main body with smooth peripheral cortical edges. Os odontoideum was first described by Giacomini in 1886 and later classified into two anatomical types, orthotopic and dystopic. orthotopic; an ossicle that moves with the atlas's front arch, and a dystopic bone that is functionally fused to the base region. In both types, stability between the atlas and axis is impaired and joint mobility is reduced. Os odontoideum is an odontoid anomaly, the other forms of which are aplasia and hypoplasia. Case reports of Os odontoideum are available in the literature. The aim of this study was to determine the prevalence of os odontoideum in Turkish cases and to examine the radiographs of cervical MR, CT and DG scans in order to analyze the differences between age and gender.

Methods: In Akdeniz University Medical Faculty, Neurosurgery; A total of 12.722 patients who underwent cervical MR, computed tomography and direct graphs between January 2014 and June 2018 were evaluated. A total of 3000 cases with cervical MR, computerized tomography and direct graphs between January 2014 and June 2018 in Antalya Education and Research Hospital, Neurosurgery were evaluated.

Results: A total of 12.722 patients with cervical MR, computed tomography and direct graphs were evaluated and os odontoideum was detected in 21 cases (0.13%). The age range of the cases was between 5 and 64 years. The distribution of the cases by gender was 12 male and 9 female. In order to be able to accurately identify os odontoideum, the points to be considered in radiographic images and the different clinical tables have been determined.

Conclusion: In order to reduce unnecessary consultations and misdiagnoses in the craniocervical region, os odontoideum should be well known in clinical practice. Our study describes the incidence of os odontoideum and the clinical significance of possible pathological conditions. This may contribute to the knowledge and diagnostic processes of clinicians working with the craniocervical region.

Keywords: craniocervical region, dens axis, os odontoideum, variation

P-88

Cortex cerebri terminology in three different books from 17–19th centuries

Tuncel Cini N[1], Güner N[1,2], Erer Kafa S[3], Kafa İM[1]

[1]Department of Anatomy, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey; [2]Department of Anatomy, Faculty of Medicine, Lokman Hekim University, Ankara, Turkey; [3]Department of Deontology, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey

Objective: In this study, we reviewed the terminological changes of the structures forming the cortex cerebri taking into account the three anatomy books from different centuries. It is known that detailed drawings of the brain was not made until the depictions of Andreas Vesalius (1514–1564), and before that the brain resembled as the macaroni in a bowl. In later centuries, the "convolutus" word has emerged as a term related to the special appearance of the brain cortex. This term has changed over the time and replaced with the "gyrus" term and similar changes can be traced through historical books.

Methods: In the digital platform we accessed to the entire three books related to the subject: (1) Nevrographia Universalis, published by Raymond Vieussens in 1684, (2) Traité d'anatomie et de physiologie which published in 1869 and belong to the Felix Vicq d'Azyr, (3) Die Hirnwindungen des Menschen nach eigenen Untersuchungen by Alexander Ecker and translated (The Convolutions of the Brain) by John C. Galton et al published in 1786. Within these books only with the drawings and depictions of the *cortex cerebri* and related terminology have been reviewed.

Results: When the drawings of Vieussens were examined, it was observed that he divided the cortex into four quadrants without any naming for gyri or sulci andstudied the brain by separating it into white and gray matter parts. It is interesting that although he examined the cortex separately, he didn't give any name. Vicq d'Azyr used the term "convolution" and described many of them for the first time. He described the *gyrus precentralis* and *gyrus postcentralis* without using Latin terminology. Ecker has been collected and combined the terminology from different scientists.

Conclusion: It is seen that there are some similarities with contemporary *Terminologia Anatomica* and Ecker's publication.

Keywords: cortex cerebri, convolutus, gyrus, history, terminology

P-89

Neural correlates of default mode network connectivity between musicians and non-musicians

Acer N[1], Bastepe Gray S[2], Dönmez H[3], Kurtoğlu E[1], Değirmencioğlu L[4], Gökmen Z[5]

[1]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey; [2]Johns Hopkins University, The Peabody Conservatory, Baltimore, MD, USA; [3]Department of Radiology, Faculty of Medicine, Erciyes University, Kayseri, Turkey; [4]Department of Music, Faculty of Fine Arts, Erciyes University, Kayseri, Turkey; [5]Department of Biostatistics, Faculty of Medicine, Erciyes University, Kayseri, Turkey

Objective: To investigate the value of image post-processing with medical image analyzing tools, individual brain atlases using web based MriCloud volumetric analyses of the some brain structures such as brain regions and in order to volumetric assessment compared to musicians and non-musicians. Also, the objective of this study is to explore neural correlates of Default Mode Network (DMN) regions in musicians and non musicians using resting-state functional magnetic resonance imaging (rs-fMRI)

Methods: The study included T1-weighted magnetic resonance imaging (MRI) of 14 musicians and 10 non-musicians with 1.5T MRI system. Using a magnetization prepared rapid gradient echo (MPRAGE) sequence with a slice thickness of 1 mm, the volumes of different cerebral regions were calculated using web based parcellation using MriCloud. Statistical differences were examined using student t test analyses accounting for spatial interpretations percent volume difference. Two DMN regions (medial prefrontal cortex (MPFC), the posterior cingulate cortex (PCC) in each one were used as seeds and their functional connectivity with the whole brain was explored and compared between musicians and control groups using t-test ($p<0.05$).

Results: Our results do not indicate statistically significant differences between musicians and non-musicians. We observed that when DMN regions were selected as seeds, the connected regions were different between two groups and were mostly in the right hemisphere in musicians contrary to the left hemisphere in the control group.

Conclusion: In conclusion, neural correlates of DMN regions differ in musicians compared to controls. Our findings suggest that in musicinas, DMN regions show more connectivity with the right hemisphere of the brain whereas the left hemisphere is more functionally connected with DMN in controls. Further research is required to explore this atypical DMN connectivity using larger cohort.

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Keywords: automated image analysis sytem, resting-state fMRI, Default Mode Network (DMN), functional connectivity.

P-90

Hippocampal volume changes observed in diabetic rats

Semiz N[1], Erçelen B[2], Ulupınar E[1,2]

[1]Department of Health Science Institute, Interdisciplinary Neuroscience, Osmangazi University, Eskişehir, Turkey; [2]Department of Anatomy, Faculty of Medicine, Osmangazi University, Eskişehir, Turkey

Objective: Diabetes mellitus is a disease in which high blood sugar levels might cause systemic complications. It also correlates with impairements in the central nervous system such as learning and memory deficits, depression, dementia and Alzheimer's disease due to reduction in synaptic plasticity. To investigate the changes in the volume of hippocampus in streptozotocin-induced diabetic rats.

Methods: Adult Sprague-Dawley rats were divided into two groups: Healthy control (n=5), and i.v. single-dose streptozotocin-injected (50 mg/kg) diabetic group (n=6). After intracardiac perfusion, hippocampal sections were takenat 100 µm thickness, with the usage of a vibratome and stained with toluidine blue. In sections selected with systematic randomized sampling method, the total volumes of hippocampal subfields corresponding to dentate gyrus (DG) and CA1-3 regions were calculated with Cavalieri volume estimation method. Data was statistically compared by using student's t-test.

Results: It was observed that inhistological sections,granular and pyramidal cell layers of diabetic rats were thinner and their cells were more scattered. However, in the control group, it was observed that cells in the DG and CA1-3 subfields were located more adjacently and remarkably packed densely. The total volumes of the DG and CA1-3 in control and diabetic animals were calculated as ($20.64\times10^6\pm24373.42$ and $49.24\times16^6\pm76436.31$) respectively. Whereas, these estimations were ($24.72\times10^6\pm29305.34$ ve $53.33\times10^6\pm48531.05$) in diabetes groups. No significant difference was observed in the total volumes of the control and diabetes groups.

Conclusion: Although our data showed no significant difference between the hippocampal subfield volumes of diabetic rats, distribution of cells per unit area seemed different. In the literatures, it has been reported that neuronal losses caused by reduction in the proliferation of cells neurons especially in DG produce learning and memory deficits and cognitive disorders. Therefore, comparison of the total number of neurons and glial cells, by using advanced immunohistochemical and stereological counting methods, has a critical importance in experimental studies using diabetic rats.

Keywords: diabetes mellitus, dentate gyrus, hippocampal volume, streptozotocin

P-91

Morphology and morphometric measurements of the interlaminar distance of the lomber region

Gediz T[1], Önder M[2], Çetin M[2], Sindel M[2], Yolcular OB[3], Oğuz N[2]

[1]Department of Brain and Nerve Surgery, Antalya Training and Research Hospital, Antalya, Turkey; [2]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [3]Department of Biostatistics and Medical Informatics, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: The interlaminar distance is generally a gap in the upper part divided by the ligamentum interspinosum, which is covered by ligamentum flavum, the lower limit's the upper lamina being the upper limit of the lower lamina and the laterals being the facet joints. on the anatomical region of the anesthesiology and algology branches. The aim of the study is to demonstrate the anatomical boundaries of the interlaminar space in the lumbar region and to investigate the morphological differences according to the vertebral levels.

Methods: In our study, 14 formalin cadaver paravertebral soft tissues were removed in the Anatolian Laboratory of Akdeniz University and then lumbal intervertebral gaps were established and the distances of the largest vertical diameter between the two laminae and the planar median of the largest transverse transverse diameter were measured using Microscribe-G2X. Morphological structures of all ranges are also shown in the drawings.

Results: Measurements of distance to the lower border of the interlaminar space in the 14 formalin cadaver lumbar region were statistically analyzed.

Conclusion: The data obtained as a result of the measurements are: We believe that a detailed anatomic examination of the lumbar interlaminar intervals will be useful in avoiding difficulties and avoiding complications in surgical procedures performed in this region.

Keywords: facet, flavum, interlaminar distance, lamina

P-92

Analysis of the insula volume of healthy adult subjects according to different age groups

Öz N[1], Karakoyun ZN[1], Alkan E[1], Acer N[2], Süzen LB[1]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [2]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey

Objective: Human brain changes with age. In many studies on healthy adults today, it has been shown that the brain is getting smaller and the brain cortex is getting thinner with age. However, brain structural changes are different in each brain region. The insula has been reported in many studies as a place where significant changes due to age and diseases are frequently observed. The aim of this study is to evaluate the effect of the age factor on the insula volume.

Methods: In this study, magnetic resonance images of 12 healthy adult subjects who were 6 subjects (3 women and 3 men) with an mean age of 53.83±1.41 years in the 45-60 age range and 6 subjects (3 women and 3 men) with a mean age of 68.83±0.71 years in the 60–75 age range were used. Magnetic resonance images were analyzed by IBASPM software which was an automatic segmentation method and insula volumes were obtained. According to both groups, mean volumes were calculated then the mean volumes were compared.

Results: The mean of the right insula volumes of the subjects in the 45–60 age range was measured as 7.93±0.31, and the mean of the left insula volumes was measured as 7.47±0.54. the mean of the right insula volumes of the subjects in the 60–75 age range was measured as 6.98±0.18, and the mean of the left insula volumes was measured as 7±0.27. As a result, the insula volumes of subjects in the 60–75 age range were found to be smaller than those in the 45–60 age range bilaterally.

Conclusion: We think that the results obtained in this study will contribute to the discussion about the effect of age factor on the volume of insula.

Keywords: age, IBASPM, insula, magnetic resonance imaging, volumetry

P-93

The course of radial artery in the snuff box and its relation to the surrounding structures

Öztürk S[1], Acar B[2], Öz N[1], Göztepe B[3], Oğuz N[1], Sindel M[1]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [2]Department of Orthopedics and Traumatology, Antalya Training and Research Hospital, University of Health Sciences, Antalya, Turkey; [3]Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: Excision of the trapezium is a surgical procedure frequently applied in the surgical treatment of arthrosis of carpometacarpale joint of the thumb (CMCJT). The incision made during surgery is within the limits of snuff box (SB). Damage to the anatomical structures in the SB during surgical dissection may result in various complications. One of these is the injury of radial artery (RA). Dorsal carpal branch of the RAprovides about 80% of arterial supply of scaphoid. It is important to know the anatomical proximity of the surrounding tissues to the surgical incisions that surround the SB to avoid injury to the RA. It was aimed to reduce the risk of complications due to the damage of RA in surgical procedures involving the SB and to evaluate the relation with the environmental structures.

Methods: In our study, 12 upper extremities were used in Akdeniz University Medical Faculty Anatomy Department The mean distance between RA and extensor pollicis longus muscle tendon's (EPLMT) exit point from extensor retinaculum of the hand (ERH); CMCJT to the RA; radial styloid process (RSP) to the EPLMT; the length of RA in the SB were measured with a digital caliper while the wrist was in the neutral position. Average values were calculated for each measurement.

Results: The mean distance between RA and EPLMT's exit point from ERHwas measured as 18.57±5.67 mm, The mean distance between CMCJT to the RA was measured as 6.29±0.31 mm. The mean length of RA in the SB was measured as 16.77±1.65 mm. The mean distance between RSP to the EPLMT was measured as 12.33±1.64 mm.

Conclusion: Knowing the course of RA in the SB may help prevent complications from surgical procedures.

Keywords: radial fovea radial artery, snuff box

P-94

Four accessory mental foramina and three accessory mandibular foramina: case report

Kastamoni Yaşar Y, Şanlı OC, Dursun A, Albay S

Department of Anatomy, Faculty of Medicine, Süleyman Demirel University, Isparta, Turkey

Objective: The mandibular foramen is an irregularly located foramen. It is just above the center of the medial face of the mandible. The mandibular foramen continues as mandibular canal in the bone.Mandibular canal ends as the mental foramen at external face. The mental foramen is a small foramen on the buccal cortical plate of the body of mandible. Typically, it is adjacent to the apical region of the second premolar.

Methods: In our study, it was aimed to better define of mandibular variations by better learning the diversity and location of accessory mental foramen and mandibular foramen. Accessory formations on a dissected fetal mandible were examined under a microscope. In order to be seen more clearly of these formations, they were photographed with the camera and a microscope.

Results: On one of the dissected fetal mandibles for fetal mandible study, on the right half of mandible, an accessory mental foramen near the mental foramen and an accessory mandibular foramen above the mandibular foramen were found. On the left half of mandible, it was detected that three accessory mental foramen, one laterally and one medially according to the it are in buccal face and one is in lingual face and two accessory mandibular foramen, an accessory mandibular foramen above the it and another accessory mandibular foramen is in buccal face. In all accessory foramens, vascular-nerve input and output were apparent.

Conclusion: Knowledge of such variations is important in the prevention of possible surgical complications and in diagnostic methods. In addition, the presence of the accessory mandibular foramen and accessory mental foramen are causes incomplete anesthesia during surgical intervention. Therefore, it is important for physicians to evaluate these findings during the surgical procedure.

Keywords: accessory mental foramen, fetal mandible, mandibular foramen

P-95

Effect of acute organophosphate intoxication on female rat hippocampus morphology, biochemistry and number of pyramidal neurons

Baş O[1], Çankaya S[2], Enginyurt Ö[3], Aslan A[4], Uydu HA[5], Odacı E[6], Yılmaz A[7], Demir A[8], Gül T[9]

[1]Department of Anatomy, Faculty of Medicine, Ordu University, Ordu, Turkey; [2]Department of Sports Management, Faculty of Sport Sciences, Ondokuz Mayıs University, Samsun, Turkey; [3]Department of Family Medicine, Faculty of Medicine, Ordu University, Ordu, Turkey; [4]Department of Physiology, Faculty of Medicine, Ordu University, Ordu, Turkey; [5]Department of Medical Biochemistry, Faculty of Medicine, Recep Tayyip Erdoğan University, Rize, Turkey; [6]Department of Histology and Embryology, Karadeniz Technical University, Faculty of Medicine, Trabzon, Turkey; [7]Department of Neurosurgery, Faculty of Medicine, Ordu University, Ordu, Turkey; [8]Department of Chemistry, Recep Tayyip Erdoğan University, Rize, Turkey; [9]Department of Neurology, Faculty of Medicine, Ordu University, Ordu, Turkey

Objective: The most commonly used insecticides and pesticides globally are organophosphate compounds, chemicals that irreversibly inhibit the cholinesterase enzyme. Acute intoxication with cholinesterase inhibitors is known to cause permanent effects to the brains of both humans and rats. As a result, in this study we decided to research the effect of acute organophosphate intoxication on the hippocampus morphology, biochemistry and number of pyramidal neurons in female rats.

Methods: Twenty-one rats were randomly divided into three groups. The control group had normal nutrition and no procedure performed. The sham group contained rats given intraperitoneal physiologic serum. The experimental group had intraperitoneal 0.8 g/kg fenthion administered. Twenty-four hours after the procedure, rats were sacrificed. The brains were removed. The brains were divided in two medially with one side left in 10% neutral formalin. After fixation procedures, tissues were blocked. Blocks were sliced and stained. Then neuron count was performed for the hippocampus. The other hippocampus homogenized and used for biochemical procedures.

Results and Conclusion: The hippocampus sections from rats in the experimental group had swelling and loss of shape of pyramidal cells, while there were no changes observed in rats from the control and sham groups. The pyramidal neurons in the hippocampus were calculated stereologically. The number of neurons in the experimental group was found to be slightly statistically lower compared to the control and sham groups. Biochemical assessment found that MDA and GSH values in the experimental group were slightly higher compared to the control and sham groups.

Keywords: fenthion, hippocampus, organophosphate, rat, stereology

P-96

Multiple muscular abnormalities in a fetal cadaver with CHARGE syndrome

Beger O[1], Koç T[1], Beger B[2], Özalp H[3], Hamzaoğlu V[3], Vayisoğlu Y[4], Talas ÜD[4], Kurtoğlu Olgunus Z[1]

[1]Department of Anatomy, Faculty of Medicine, Mersin University, Mersin, Turkey; [2]Department of Pediatric Surgery, Faculty of Medicine, Van Yüzüncü Yıl University, Van, Turkey; [3]Department of Neurosurgery, Faculty of Medicine, Mersin University, Mersin, Turkey; [4]Department of Otorhinolaryngology, Faculty of Medicine, Mersin University, Mersin, Turkey

Objective: The CHARGE syndrome characterized by coloboma, heart defects, atresia of the choanae, retarded growth, genitourinary hypoplasia, and ear anomalies is one of the rare syndromes. Although certain clinical issues (scapular winging, sloping shoulder, Sprengel's deformity, kyphosis and scoliosis) which could be related to abnormalities in musculoskeletal structures of the neck and shoulder have been identified in CHARGE syndrome, data on details of muscle anomalies seem to be quite limited in the literature.

Methods and Results: In this case report, bilateral multiple muscular abnormalities (agenesis of the trapezius, presence of the rhombo-atloid muscle, and presence of the bipartite rhomboid minor with superficial and deep parts) was presented in a fetus cadaver with atypical CHARGE syndrome to attract the attention of clinicians for definitive diagnoses and surgical reconstruction of the shoulders deformity such as scapular winging and Sprengel's deformity.

Conclusion: By considering the previous studies, we propose that the absence of the trapezius as well as the other muscle abnormalities around the neck and shoulder should be revised as being a component of CHARGE syndrome.

Keywords: bipartite rhomboid minor, CHARGE syndrome, rhombo-atloid muscle, semicircular canals, trapezius muscle

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Evaluation of foramen mentale localization with three dimensional computed tomography in pediatric population

Barlak HB[1], Turamanlar O[1], Özer Gökaslan Ç[2], Eryiğit Ö[1], Oflu AT[3]

[1]Department of Anatomy, Faculty of Medicine, University of Afyonkarahisar Health Sciences, Afyonkarahisar, Turkey; [2]Department of Radiology, Faculty of Medicine, University of Afyonkarahisar Health Sciences, Afyonkarahisar, Turkey; [3]Department of Pediatry, Faculty of Medicine, University of Afyonkarahisar Health Sciences, Afyonkarahisar, Turkey

Objective: Mental foramen is an anatomical entity located on the anterior surface of the mandibular body of the mandible. The localization and detection of the mental foramen is important in terms of complete dental procedures, endotontic treatments, implant applications, surgical procedures in the premolar area,

and local anesthesia. Location of mental foramen has been reported to vary in race, personality and age. The purpose of our study is to evaluate the localization of the mental foramen in the pediatric population using 3D computerized tomography in living persons according to age, sex and location (right / left) to know the limits and size.

Methods: This descriptive study was performed retrospectively on the images of 99 individuals with a mean age of 9.11 (± 2.7) who underwent cranial computerized tomography for any reason.

Results: The mean of the measurements we made from the mental foramen to the alveolar crest point (E1) in our study was 12.5±2.7 mm, the average of the measurements made from the lower margin of the mental foramen to the lower limit of the mandible (E2) 9.1±1.8 mm mean of measurements from the medial margin of the mental foramen to the point of the symphysis menton (E3) 21.4±1.9 mm, the mean of the measurements made from the lateral margin of the mental foramen to the point at the posterior border of the ramus (E4). We found 46.4±4.4 mm. There was no significant difference between male-female and left-right comparisons (p>0.005). There was positive correlation between age and E2, E3, E4 measurements and negative correlation between age and right E1. There was no significant difference between age and E1. When we compare the information obtained in our study with the knowledge of the literature, it is observed that many of the findings are similar but there are differences in some measurements. These differences may be due to the fact that other studies were performed on dry bones and panoramic radiographs, working in different age groups, different measurement methods, and less work on living person CT studies. Mental foramen has certain age-related changes.

Conclusion: Precise localization of the mental foramen in the pediatric population is of great importance in reducing the complications of anesthesia in surgical applications to be performed in the premolar region.

Keywords: mental foramen, pediatric population, three-dimensional computerized tomography

P-98

Classification of the sacrum as surface of the sacroiliac joint morphology

Cihan ÖF, Karabulut M, Zencirci B

Department of Anatomy, Faculty of Medicine, Gaziantep University, Gaziantep, Turkey

Objective: Sacroiliac joint is a snovial joint between the auricular surfaces of both iliac and sacrum bones. Due to the interosseous ligaments which connects surfaces, it has a very limited movement capabilitiy.The sacrum carries the loads via the upper surface of the 1. sacral vertebrae and the surfaces of the lumbosacral zygapophysial joints.. The weight transpose along the surfaces of joint to the iliac bone at both sides. In this study, sacrum classified according to the variable positions of auricular surfaces. The aim of this study is to classify the sacrum by the morphometric evaluation of the anatomical structure of sacroiliac joints, the identification and the frequency of the variations.

Methods: In this study, measurements were made on 91 sacrum and 140 ilium bones. Images of the sacrum bones were taken and transferred to the computer environment and investigated using the Horos v.3.0.1 software. Classification of the articular surface of the sacrum with the alpha angle which defined in the sagittal axis of the sacroiliac joint, measurement of the joint surface area, height of the auricular surface, and the ratio of the length of the specified alpha angle to the length of the auricular surface was determined. In addition, the length of the sacrum and the body width of the first sacral vertebrae, the depth of the bone depressions in the posterior part of the sacrum, and the anteversion diameter were measured.

Results: In our study the sacral vertebrae corpus of the first group is wider. 4 sacrum have single or double sided accessory articulation faces on the surface of the ala of the sacrum. In the joint-shape analysis due to the alpha angle, type 3 observed most commenly. In Type 2, the angle of facies auricularis was most commonly found in the over the 1. dorsal sacral foramina while it was observed in line of 1. dorsal sacral foramina in Type 1 and 3. Depressions differed on two sides of a single bone or different sacrums and superior depression's value was higher. Anteversion value was similar in the right and the left but the highest value was observed in the first group.

Conclusion: This study is important as to and and to lead clinicians during the diagnosis and treatments.In addition we thought this study will contribute to the literature of anatomy.

Keywords: auricular surface, classification, morphology, sacrum

P-99

Spontaneous idiopathic bilateral vertebral arteriovenous fistula: a case report

Cihan ÖF[1], Erkutlu İ[2], Zencirci B[1]

[1]Department of Anatomy, School of Medicine, Gaziantep University, Gaziantep, Turkey; [2]Department of Neurosurgery, School of Medicine, Gaziantep University, Gaziantep, Turkey

Objective: Vertebral arteriovenous fistulas (VAVF) are rarely seen vascular problems. While VAVFs are most commonly occur after trauma, they are also seen congenitally and spontaneously. We discussed here a very rare case of spontaneous idiopathic bilateral VAVF.

Methods: A 43-year-old male patient presented to the neurosurgery clinic with headache and weakness. There was no neurological defificit except for neck stiffness on physical examination.

Results: Right cerebral artery bifurcation aneurysm was detected in cerebral CT angiograpy (CTA) of the patient.He was discharged after the aneurysm clippage surgery and was

asked to come to the control a month later. When CTA images were examined pre and postoperatively, VAVF was detected between the vertebral arteries and deep cervical veins in the paravertebral region. A clinical and radiological pathology was not found in the patient who was examined for cardiac insufficiency to diagnose the possibility of a high-flow VAVF. The endovascular fistula embolization for VAVF was suggested to the patient and then the possible risks of this procedure were explained. However, the patient was discharged because he was not suffering anything in his daily life activities and did not accept these risks that could result from this treatment modality.

Conclusion: VAVF is rarely observed and usually develops after trauma. Although the etiology of congenital and spontaneous arteriovenous fistulas is not completely known, it may be related to its anatomical localization, arteriosclerosis, neurofibromatosis and arterial wall diseases. As stated in the largest review in the literature, bilateral and spontaneous cases are very rare and the etiologies are uncertain. Endovascular embolization and / or occlusive surgical techniques can be used most frequently in treatment. In this series of Vinchon et al., only one bilateral VAVF with fibromuscular displasia was reported.

Conclusion: In the second case presented by Hiroshi et al., etiology of neurofibromatosis and atlantoaxial dislocation association is reported. The importance of our case is the third case in terms of bilateral localization and the first spontaneous development with an undetectable etiology case in the literature. Due to these features, bilateral and subaxial cases are difficult to treat, and surgical complications can be life-threatening.

Keywords: vertebral arteriovenous fistula, spontaneous, idiopathic, bilateral

P-100

Variations of sacroiliac joint and the assessment of degenerative changes in periarticular tissue of variant joints with CT

Cihan ÖF[1], Karabulut M[1], Kılınçoğlu V[2], Yavuz N[3]

[1]Department of Anatomy, Faculty of Medicine, Gaziantep University, Gaziantep, Turkey; [2]Department of Orthopedy and Traumatology, Faculty of Medicine, Gaziantep University, Gaziantep, Turkey; [3]Department of Radiology, Faculty of Medicine, Gaziantep University, Gaziantep, Turkey

Objective: Articulatio sacroilica is a synovial joint between the auricular surfaces of sacrum and ilium in human body. Several modalities such as conventional radiography, CT, MR, have been used in the evaluation of sacroiliac joint. CT scaning of the sacroiliac joints is thought to be ideal for describing the anatomy of the joint, for showing morphological anomalies and also for detailed viewing of the curved surfaces of the sacrum. The morphology of the sacroiliac joint and its possible variations are important for correct diagnosis in radiological images. In this study, identification of variations, determination of the frequency of variations, and changes in periarticular tissues of varying joints and the evaluation of the joint space were aimed.

Methods: The study was carried out on 145 MDCT images of the pelvis in patients admitted to hospital to Orthopedics and Traumatology Department in Medical Faculty of Gaziantep University. In our study, CT images were examined to determine the anatomical variations and the changes in the periarticular tissues of the joints showing variation were investigated. In the obtained images, the sacroiliac joints reconstructed in 3D format with Horos v.3.0.1 software and examined.

Results: In our study involving 145 individuals (290 joints) we detected 6 types of variation in sacroiliac joint. 18.4% of these variations were unilateral and 7.7% were bilaterally observed. The most common variation was the iliosacral complex and its incidence for males was 4.8% and %2.4 for females. The most common type of variation for males was the iliosacral complex with 4.8% and the two-piece iliac bone with 4.9% for females. In our study, subchondral sclerosis (0.04%), ankylosis (0.006%), vacuum phenomenia (0.06%) and subchondral cyst (0.04%) were observed as the most common degenerative changes in periarticular tissue of sacroiliac joint.

Conclusion: It is thought that the variations in the normal population and the periarticular degenerative changes which investigated in our study will contribute a better understanding of the normal morphology of sacroiliac joint and the literature of anatomy.

Keywords: sacroiliac joint, degenerative changes, variations

P-101

Evaluation of cerebellum hemisphere and lobule volumes in relation to gender and age using MR images: preliminary evaluation

Sevinç Ö[1], Akkuş V[1], Koparal B[2], Aktepe R[1], Üçüncü Y[1], Hocaoğlu C[2], Barut Ç[3]

[1]Department of Anatomy, Faculty of Medicine, Recep Tayyip Erdoğan University, Rize, Turkey; [2]Department of Psychiatry, Faculty of Medicine, Recep Tayyip Erdoğan University, Rize, Turkey; [3]Department of Anatomy, Faculty of Medicine, Bahçeşehir University, Istanbul, Turkey

Objective: Cerebellum is found within the fossa crranii posterior behind the pons and medulla oblongata. It consists of two laterally placed hemispheres connected by a median portion, the vermis. Cerebellum is composed of three lobes as follows: lobus cerebelli anterior, lobus cerebelli posterior ans lobus flocculonodularis. These lobes are further divided into lobule by various fissures. The aim of this study is to evaluate the morphology of cerebellum and lobules in terms of volume in relation to gender and age.

Methods: Cranial MR images obtained by 1.5 Tesla MR unit of 93 individuals (48 female, 45 male) were evaluated retrospectively. All the individuals were reported to have no cranial pathologies. The study group was divided into four according

to age as follows: Group1: 21–35 years, Group 2: 36–50 years, Group 3: 51-65 years, Group 4: Over 66. Cranial MR images were evaluated using volBrain and Ceres softwares. These softwares automatically segmentated the cerebellum and volume of the whole cerebellum, right and left hemispheres and the lobules were calculated. All the calculated values were divided by the total intracrainal volume, thus ratios related with all the calculated values were obtained and statistically analysed.

Results: Lobule I–II total %, lobule VI total % and crus I total % values of females were significantly higher than those of males. For the rest of values there were statistically no significant differences between genders which can be considered as a similarity in both genders. There were statistically significant differences between age groups with respect to lobule V total% and lobule VI total % values while no significant statistical differences were found between the age groups for the rest of the parameters. The insignificant results can also be considered as similarity in different age groups for the rest of the parameters. In addition there was a significant negative correlation between age and cerebellum total %, right and left cerebellum hemisphere %, lobule I–II total %, loble V total %, lobule VI total %, lobule VIIB total and lobule VIIIA parameters for the whole study group.

Conclusion: In this study we evaluated the similarities and differences of the hemsipheres and lobules of cerebellum in relation to gender and age. There were significant differences between age groups with respect to lobule V total % and lobule VI total % values. Furthermore significant negative correlations were encountered between age and certain parameters. For most of the parameters evaluated morphological arrangement was similar in both genders.

Keywords: age, cerebellum, hemisphere, lobule, sex, volume

P-102

Place of the glenoid cavity in the reverse shoulder arthroplasty

Güzelad O, Yıldırım FB, Süzen LB

Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: Reverse shoulder arthroplasty is a newly developed surgical procedure approved in 2004 in the USA and successfully used in recent years. This method is often used in cases where arthritis is prominent or the rotator cuff muscles are torn. The rotator cuff muscles help hold the humerus head in the glenoid cavity and the arm can then be lifted up. When these muscles can not be used, the humerus head slides up in the glenoid cavity and it gets harder to lift the arm up. If a normal joint prosthesis is used in this case, the pain may increase and it is often difficult to lift the arm up. This study was done to shed light on determining the size of the base plate for surgeons.

Methods: This study was carried out with 78 scapulae (40 right 38 left) at the Akdeniz University Faculty of Medicine, Department of Anatomy and the height and width of the glenoid cavity were measured.The measurements were performed by BTS digital calipers. There is a statistically significant difference between the height and width of the glenoid cavity according to the values both on the right and the left ($p<0.05$).

Results: The height of the glenoid cavity was found to be 34.346±3.624 mm on the left side and 34.89±2.89 mm on the right side.While the maximum height for the left side was 42.02 mm and the minimum height was 26 mm, the maximum height for the right side was 40.17 mm and the minimum height was 24.75 mm. The width of the glenoid cavity was found to be 23.54±2.75 mm on the left side and 24.299±2.34 mm on the right side. While the maximum width for left side was 30.42 mm and the minimum width was 19.74 mm, the maximum width for the right side was 29.03 mm and the minimum width was 17.66 mm.

Conclusion: Reverse shoulder arthroplasty has become a widespread surgical procedure because of it's positive results. This data may be a guide for surgeons who performs reverse shoulder arthroplasty. Further studies with larger sample sizes are recommended to emphasize the clinical significance of this study.

Keywords: reverse shoulder arthroplasty, scapula, glenoid cavity

P-103

The effect of growth hormone on calcium-binding proteins in bulbus olfactorius of 6-OHDA Parkinson model rats

Kirazlı Ö[1], Acinikli M[2], Öztürk M[2], Demir S[2], Büyükyılmaz Z[2], Şehirli ÜS[1]

[1]Department of Anatomy, Faculty of Medicine, Marmara University, Istanbul, Turkey; [2]Medical Student, Faculty of Medicine, Marmara University, Istanbul, Turkey

Objective: Hyposmia is the earliest symptom for Parkinson's disease (PD), which is common in synucleopathies and occurs before motor and cognitive symptoms. Growth hormone (GH) is a hormone that stimulates cell growth and regeneration. There are also studies showing that neuronal functions are associated with recovery after brain injury. Calcium binding proteins (CBP) protect the nerve cells from harmful effects of increased calcium through calcium buffering. Calretinin (CR) is one of the most well-known and studied CBPs. The aim of this study is to investigate the protective or therapeutic properties of calcium-binding proteins that suppressed / induced by growth hormone in the bulbus olfactorius of PD.

Methods: Sprague Dawley rats; control (n=4) and GH group (n=4) were stereotaxically administered to 6-OHDA (4 µL) medial forebrain bundle. GH (0.15 mg / kg / day) and saline were administered for 1 month from the day following the injection. Brains were perfused and CR staining was performed on the sections taken from the bulb olfactorius. CR + neurons

in the lateral olfactory tract (LOT) were counted under a fluorescence microscope and evaluated by statistical analysis.

Results: The mean number of neurons in the BD treatment group was 534.18±55.2 while the average number of neurons in the Parkinson group was 473.90±41.7 Compared with the control group, the number of CR + neurons was increased in the sections of the bulbus olfactorius of GH group, but this increase was not statistically significant. Thinning was observed in the LOT of the control group and it was seen that the neurons were lost in continuity and a clustered image throughout the tract was observed.

Conclusion: In the literature, the decrease of CBPs is closely related to neurodegenerative diseases. In our study, the increase in the number of CR + neurons in the group receiving BH and the changes in the LOT morphology of the control group may be related to hyposmia pathophysiology.

Keywords: calretinin, growth hormone, hyposmia, lateral olfactory tract, Parkinson's disease

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Scaphoid bone anatomy and clinical significance: morphometric study

Sindel M[1], Göztepe B[2], Öztürk S[1], Kaştan ÖZ[3], Oğuz N[1]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [2]Faculty of Medicine, Akdeniz University Antalya, Turkey; [3]Vocational School of Health Services, Akdeniz University, Antalya, Turkey

Objective: Scaphoid bone is one of the proximal major bones of the carpal bones.The most common carpal bones fractures are scaphoid bone due to their connection with other bones.The fracture of scaphoid bone is recovering fairly late due to limited circulation to the bone. In addition, displaced scaphoid bone fractures often cause posttraumatic osteoarthritis due to late boiling. For this reason, it is very important that these fractures be recognized rapidly and treated with immobilization or surgical fixation. In this study, anatomic changes in size and appearance of scaphoid bone were investigated.The bone has been typed according to the structure of tuberculum ossis scaphoidei. It is aimed to have a wide knowledge about the localization and anatomical orientation of the bone in morphological measurements.

Methods: The study was carried out on 37 dry scaphoid bones in Akdeniz University Medical Faculty Anatomy Department. Measured parameters; the length and waist circumference of scaphoid bone, the length and width of sulcus dorsalis, the primer and the secondary length and the circumference of tuberculum ossis scaphoidei,. A digital caliper is used for the measurement of the morphometric parameters. Circumference measurements were made by wrapping the rope. The types of bone are classified as pyramidal and conical according to the structure of tuberculum ossis scaphoidei.

Results: Tuberculum ossis scaphoidei was present in 37 bones examined. 10 of the 24 scaphoid bone on the left side is pyramidal, 14 conical; 6 of the 13 scaphoid bones on the right side is pyramidal and 7 conical.

Conclusion: According to morphological measurements, recognizing the locations affected by fracturing forces is effective in using stabilizing implants and positioning the fragments. Knowing these properties can help in the treatment of scaphoid bone damage.

Keywords: morphometry, scaphoid bone, tuberculum ossis scaphoideum

P-105

Ultrasonographic determination of fetal cisterna magna width and clinical assessment in pregnancy

Desdicioğlu R[1], İpek A[2], Desdicioğlu K[3]

[1]Department of Obstetrics and Gynecology, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey; [2]Department of Radiology, Ankara Atatürk Training and Research Hospital, Ankara, Turkey; [3]Department of Anatomy, Faculty of Medicine, Ankara Yıldırım Beyazıt University, Ankara, Turkey

Objective: The cisterna magna is a fluid-filled formation in the rear section of the brain between the cerebellum and medulla oblongata. On ultrasound assessment, widths above 10 mm are called mega cisterna magna. We aimed to determine the cisterna magna width of fetuses from 18–27 weeks gestation and the correlation between cisterna magna width and maternal age, maternal body mass index, gestation week and fetal parameters.

Methods: The study included 328 healthy fetuses with 18–27 weeks gestation of mothers aged from 19–40 years (mean: 28.52). The cisterna magna width of the fetuses was measured. Additionally, the fetal parameters of bi-parietal diameter (BPD), abdominal circumference (AC) and femur length (FL) were obtained. Later the fetuses were divided into the following groups; five groups based on maternal age of 20 years and younger, 21–25 years, 26–30 years, 31–35 years and older than 35 years; and four groups based on body mass index of 20–24.9, 25–29.9, 30–34.9 and more than 35.

Results: The cisterna magna width of fetuses with 18–27 weeks gestation was identified to vary from 4.40–4.82 mm (mean: 4.75 mm). Additionally, the mean and standard deviation of cisterna magna width thickness and fetal parameters were determined according to maternal age, maternal body mass index and week of pregnancy. Later the correlations between fetal cisterna magna width with fetal parameters, maternal age, maternal body mass index and week of pregnancy were examined. Fetal cisterna magna width was correlated with week of pregnancy and fetal parameters ($p<0.01$) but was not identified to correlate with maternal age and maternal body mass index ($p>0.01$). Comparison of fetal cisterna magna width with week of pregnancy identified a statistical difference between weeks ($p<0.05$), while comparison with age groups and body mass index groups did not determine a statistical difference ($p>0.05$).

Conclusion: Maternal age and maternal body mass index are important factors affecting fetal development. We believe the data obtained as a result of our study will be beneficial for clinicians in assessing fetal development, determining fetal age and identifying fetal anomalies.

Keywords: cisterna magna, pregnancy, ultrasonography

P-106

Right aortic arch determined by MDCT coronary angiography

Erdem S[1], Fazlıoğulları Z[1], Koplay M[2], Ünver Doğan N[1], Karabulut AK[1]

[1]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [2]Department of Radiology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: The aorta is the largest artery that delivers oxygenated blood to the whole body. Its first part is ascending aorta, the second part is aortic arch and the last part is descending aorta. In the 'right aortic arch' cases the aortic arch is located in the right side of trachea whereas it is normally in the left of it.

Methods: 256-slice MDCT coronary angiography images of a male baby with pain complaint from Selçuk University Faculty of Medicine were reviewed.

Results: The aorta had dextro-position and "right aortic arch" appearance. In addition, pulmonary atresia was determined. A confluence, organized by vascular structure, was observed between right pulmonary artery and left pulmonary artery. There was a vascular structure that exits from brachiocephalic trunk and extends to the bifurcation level of truncus pulmonalis. It is thought that this vascular structure is the major aorta-pulmonary collateral artery (MAPCA) and the pulmonary circulation is provided by MAPCA. Also, there was ventricular septal defect in patent foramen ovale and perimembranous area besides of the mirror-image of vascular structures arising from the arcus aorta.

Conclusion: Right aortic arch is an anomaly seen in adults with 0.1% incidence. In cases of right aortic arch, anomalies such as abnormal left subclavian artery, abnormal left innominate artery and mirror-image branching are common. There are also anomalies such as fallot tetralogy, ventricular septal defect, pulmonary atresia, MAPCA and truncus arteriosus in the cases with mirror-image. These may lead to serious respiratory and gastrointestinal problems in newborns due to the degree of the press and the presence of MAPCA or may not cause any symptoms until adulthood. We believe that the recognition of these variations will benefit not only anatomists but also surgeons, neonatologist and radiologists in the clinic to create a new concept for diagnosis, treatment and surgery.

Keywords: right aortic arch, truncus pulmonalis atresia, MAPCA

P-107

The sacred disease of ancient time: epilepsy

Adanır SS, Cihan ÖF

Department of Anatomy, Faculty of Medicine, Gaziantep University, Gaziantep, Turkey

Epilepsy is as old as the existence of mankind. The terms epilepsy and epileptics are derived from the verb of the epilambanine, of Greek origin, used to seize or attack. The first official definition as a disease was made by Hippocrates. Hippocrates said about epilepsy called the sacred disease 'I think it is more sacred than other diseases, but it has a natural cause like other diseases. The reason for this disease is like the other big diseases'. He wrote the first manuscript about the epilepsy "the sacred disease" in 400 BC. In ancient times, like many diseases, epilepsy was considered to be a divine disease and was interpreted as a punishment of God. This widely advocated view of epilepsy found support at the time, even in the medical world. As a result, more religious treatments have been made. This was due to the lacking of the anatomy knowledge. During the Renaissance, the present views on epilepsy have begun to be debated like the many aspect with the anatomical advance. This has led scientists to move away from superstitious thoughts about epilepsy to a more rational approach. The increase in anatomical knowledge in this period has resulted in the examination of the anatomical bases of epilepsy as well as many diseases. It has become widespread that epilepsy is a brain related disease. With the increase of anatomical knowledge in medical history, more detailed and accurate information about the causes and treatments of diseases is obtained. The historical process of epilepsy is also an indication of this condition.

Keywords: anatomy, history of epilepsy, the sacred disease

P-108

Anormal origin of the ramus sinister a. hepatica propria: case report

Develi S, Yıldız S

Department of Anatomy, Gülhane Faculty of Medicine, University of Health Sciences, Ankara, Turkey

Objective: Truncus coeliacus from the ventral branches of aorta abdominalis participates in arterial feeding of digestive tract by dividing into three main branches. The largest branch is a.splenica and other branches are a.hepatica communis and a.gastrica sinistra. Arterial feeding of liver is supplied by a.hepatica propria which branched from a. hepatica communis. A.hepatica propria is divided into ramus dexter and sinister branches in porta hepatis and provides arterial feeding of liver. In this presentation; a case with abnormal origin of the r.sinister will be discussed.

Methods: During routine student dissection, in a 78-year-old male cadaver fixed with formaldehyde, r.sinister supplying the left lobe of the liver was observed to be originating from a.gastrica sinistra.

Results: After branching from a.hepatica communis, a.hepatica propria courses to porta hepatis by passing through the lig.hepatoduodenale. It divides into r.dexter and sinister branches and provides arterial feeding of liver. In literature, variations of these vessels have been reported very often. These variations need to be well known both in transplantation, tumor surgery and radiological imaging. Here, a.hepatica propria was supplying the right lobe of liver without branching, r.sinister was supplying the left lobe by passing through lig.hepatogastrica and anteroinferior of lobus caudatus. It was entering left lobe by passing from the left side of porta hepatis. According to the classifications by Michel and Hiatt, this variation is called Type-2, with an incidence of between 2%-10%.

Conclusion: Especially in terms of transplantation surgery, when considering that the vessels of the recipient and donor should be compatible with each other, such variations should be well known.

Keywords: gastrica sinistra artery, hepatica propria artery, ramus dexter, ramus sinister

P-109

Cadaver donation form example prepared in accordance with the Supreme Court jurisprudence about informed consent

Develi S

Department of Anatomy, Gülhane Faculty of Medicine, University of Health Sciences, Ankara, Turkey

Objective: Informed consent is one of the preconditions of good medical practice and is based on the principle of autonomy, which is one of the basic principles of medical ethics. Autonomy; it can also be expressed as the self-determination of one's own health. Informed approval process comprises whether the patient is adequately informed, able to approve or reject any medical procedure to be applied to him/her, to reflect on the information he/she receives, and to make his/her decision based on free choice. The quality of diagnosis and treatment methods to be applied, the expected benefits, potential side effects, other diagnostic and treatment options and information about their properties should be provided to patients. The fulfillment of these conditions is directly and / or indirectly the responsibility of the physician. The informed consent is defined in universal medical ethics documents and in our country it is put into practice with legal regulations. Cadaveric donation, which plays an important role in the practice of anatomy, should be evaluated within this context and should be careful against erroneous practices. In this text; a sample of the donation form prepared in light of Supreme Court jurisprudenceis presented for use in cadaver donation procedures.

Methods: The 2008 and 2014 decisions of the Supreme Court concerning with the informed consent were evaluated and the points that should be in the cadaver donation form were determined.

Results and Conclusion: A detailed form example was prepared according to the identified subjects. The detailed text about the created form was published in Volume 12 - Issue 1 - Apr 2018 of the journal Anatomy-an international journal of experimental and clinical anatomy.

Keywords: cadaver donation form, informed consent

P-110

Four-headed musculus gastrocnemius: case report

Develi S, Erçıktı N

Department of Anatomy, Gülhane Faculty of Medicine, University of Health Sciences, Ankara, Turkey

Objective: M.gastrocnemius; is one of the superficial group muscles located in the posterior compartment of the leg. It's a two-headed muscle and lies posterior to the m.soleus. Caput mediale origins from condylus medialis, caput laterale origins from condylus lateralis of femur. Together with m.soleus, forms tendo calcaneus, also known as the Achilles tendon, and it is attached to calcaneus. It flexes the leg in the knee joint and plantar flexes the foot in the ankle joint. It is innervated by N.tibialis. In this presentation; a case of four-headed m.gastrocnemius associated with fossa poplitea and neurovascular structures will be presented.

Methods: During routine student dissection, in a 78-year-old male cadaver fixed with formaldehyde, four-headed m.gastrocnemius was observed in right lower extremity.

Results: M. gastrocnemius forms the inferior border of the fossa poplitea. In literature, three-headed variations, agenesis or anomalous origins were reported. Four-headed variation has been reported very rarely. The accessory head is often called caput tertium. In this case, caput mediale and caput laterale was attached to the femur condyles as described in classical anatomic definition. The medial accessory head was attached to condylus medialis of femur, the lateral accessory head was attached to condylus lateralis of tibia. N. tibialis was coursing distally by passing between accessory heads. A. and v. poplitea was coursing distally by passing under the lateral accessory head. V. saphena parva was draining into v.poplitea close to attachment point of lateral accessory head. Claudication, stasis or nerve entrapment can be seen due to vascular or nerve pressure by accessory heads.

Conclusion: This case report intended to raise awareness about a rare variation of m. gastrocnemius.

Keywords: popliteal artery, caput tertium, tibial nerve, gastrocnemius muscle, popliteal vein

P-111

Evaluation of the subgroup fibers of the musculus infraspinatus

Develi S, Yalçın B

Department of Anatomy, Gülhane Faculty of Medicine, University of Health Sciences, Ankara, Turkey

Objective: Musculus infraspinatus which is one of the rotator cuff muscles is located in the fossa infraspinata placed in the dorsal of the scapula. The muscle is innervated by the nervus suprascapularis and contributes to the external rotation and stabilization of the shoulder joint. In the classical anatomy tetbooks, subgroup fibers of the muscle are not described. However, some recently published studies have suggested that subregions of the muscle fibers (ie; pars clavicularis or pars acromialis of the musculus deltoideus) have different contributions to the movement of the shoulder joints. Shoulder joint is one of the joints that we use very often in our daily activities. The detailed knowledge of the subregion fibers of musculus infraspinatus and their functions as one of the supporting muscles of shoulder joint will be important and useful for clinicians. In this presentation; subregions of the musculus infraspinatus are discussed in the examples of our population.

Methods: The upper limbs of the cadavers belonged to Department of Anatomy were included in the study. Samples which have a pathology related to muscle infraspinatus in the dorsal region of scapulae have not been included in the study. A total of 35 upper limbs, fixed with formaldehyde were examined. Musculus trapezius and musculus deltoideus were removed, and muscle infraspinatus and its fascia were evaluated macroscopically.

Results: Three subgroups of the musculus infraspinatus were observed in all of the specimens examined. The upper group of fibers constituted about one-fourth of the muscle mass and were parallel to the spina scapulae. The middle group of fibers formed approximately half of the muscle mass and observed to be coursed obliquely and attached to tuberculum majus. The inferior group fibers constituted one fourth of the muscle mass and parallel to the margo lateralis of the scapula and attached to tuberculum majus. In one of the samples, fibrous septa was observed that combining the fibers of the teres minor with the superior part. In three of the samples, a similar fibrous septa was observed between the fibers of the superior and inferior parts.

Conclusion: The obtained results were discussed with the literature data.

Keywords: fossa infraspinata, musculus infraspinatus, rotator cuff

P-112

Epigenetic regulators: miRNAs regulate each stage of neural development

Tomsuk Ö, Kaçar S, Şahintürk V

Department of Histology and Embryology, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: MicroRNAs (miRNAs) are non-coding RNA molecules that are approximately 22 nucleotides in length and negatively regulate eukaryotic gene expression on post-transcriptional level. miRNAs were first discovered with their embryonic developmental roles. Furthermore, miRNAs have several roles in many important events such as stem cell development and differentiation, apoptosis and cell cycle.miRNAs abundantly exist in brain as well as their expression in many organs. The anatomical and functional complexity of the brain requires the precise coordination of multilayered gene regulatory networks. In the developmental process, miRNAs play a crucial role in maintaining this coordination. The flexibility and speed of miRNAs function provide precise temporal and spatial gene regulatory capabilities to brain. This regulatory capability is critical for brain to properly function. The goal of this study is to examine miRNA types and their roles in neural development.

Methods: The articles published in 2010–2018 were searched in Sciencedirect and Web of Knowledge search engines by using the keywords "miRNA" and "neural development". Among the results, miRNA studies related to neural development were selected.

Results: As a result of the search, 15 specific studies were identified. According to these studies, miR-124, miR-9 and miR-17–92 were shown to have a particularly important role in neural development and brain. miR-124 constitutes 24–48% of the miRNAs in brain. Furthermore, miRNAs expressed in brain play various roles in each developmental stages of the nervous system. miR-124 and miR-125b were associated with human pluripotent stem cells and were found to be involved in the differentiation of neurons. Additionally, the abnormal expression of miRNAs are associated with different neurodevelopmental disorders such as schizophrenia, autism, Down's syndrome and fragile X syndrome.

Conclusion: miRNAs are suggested to be critical in neural development. More sophisticated multidisciplinary studies are needed to elucidate this subject.

Keywords: miRNA, neural development

P-113

Flow cytometric analysis of combined expression of caspase 3 and 7 after acrylamide in normal lung cells

Kaçar S[1], Kutlu HM[2], Şahintürk V[1]

[1]Department of Histology and Embryology, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey; [2]Department of Biology, Faculty of Science, Eskişehir Technical University, Eskişehir, Turkey

Objective: Acrylamide is a chemical used to produce materials called polyacrylamide and acrylamide copolymers. Polyacrylamide and acrylamide copolymers are used in many industrial processes such as the production of paper, paint and plastics and in the treatment of drinking water and wastewater. In addition, acrylamide is present in some foods and cigarettes. Although the effect of acrylamide on cell death has been studied in many cell types, to our best knowledge, -there are very few studies about its effect on normal lung cells. In the present study, we sought to evaluate how acrylamide affects the com-

bined expressions of caspase 3 and 7 in BEAS-2B normal lung cells by flow cytometry.

Methods: BEAS-2B cells were cultured in RPMI-1640 medium supplemented with 10% (v/v) fetal bovine serum and 100 U / ml penicillin-100 µg / ml streptomycin at 37 °C in an incubator containing 5% CO_2. Two cell groups were formed as acrylamide-treated and untreated cells. BEAS-2B cells were exposed to acrylamide in 6-well plates for 24 hours. At the end of the time period, the caspase 3/7 activity was assessed by flow cytometry using a commercial kit.

Results: According to flow cytometry results, control and acrylamide group were detected to have cell viability of 92.6% and 76.5%, early apoptosis of 2.3% and 16.0%, and late apoptosis of 2.4% and 3.6%, respectively.

Conclusion: Acrylamide induces apoptosis in BEAS-2B lung cells.

Keywords: acrylamide, caspase 3, caspase 7, flow cytometry

P-114

Gene enrichment cluster analysis of differentially expressed genes in males and females in non-alcoholic fatty liver disease

Kaçar S, Bağcı R, Şahintürk V

Department of Histology and Embryology, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Non-alcoholic fatty liver disease is a liver disorder that affects people who either not consume or consume a little alcohol. As its name implies, the main feature of this disease is the accumulation of excessive fat in the liver cells. In its progressive stages, the disease is characterized by liver inflammation that may lead to irreversible liver damage. The purpose of this study is to identify the differentially expressed genes of males and females in non-alcoholic fatty liver disease and to identify in which gene sets those genes are categorized.

Methods: In the current study, the GENEVESTIGATOR programme, a microarray database was used. The expressed genes in males and females in non-alcoholic fatty liver disease were selected from previously registered studies. A new gene set was created with at least two-fold differentially-expressed genes in either male or female. Afterward, which known gene set those genes belong to was determined by performing enrichment cluster analysis

Results: It was found that 48 genes are differentially expressed either in men or women in desired conditions in non-alcoholic fatty liver disease. The number of genes associated with the endoplasmic reticulum network, membrane-bounded organelles, intracellular organelles, oxidation-reduction and biosynthetic process of organic substances is ascertained as 8, 22, 23, 7 and 16 among those identified 48 genes.

Conclusion: According to these results, there are differentially-expressed genes of men and women in non-alcoholic fatty liver disease. The reasons for these differentially expressed genes should be investigated with more advanced studies.

Keywords: gene enrichment cluster analysis, non-alcoholic fatty liver disease

P-115

NF-KB protein expression of hepatocytes increased in vitro after acrylamide admisintration

Kaçar S, Şahin E, Şahintürk V

Department of Histology and Embryology, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Acrylamide, also known as 2-propenamide, is a vinyl monomer with the formula of C3H5NO. It reaches up to our homes via foods or by various materials in which acrylamide is used. Thus, acrylamide is exposed in daily life. NfκB is a complex protein that modulates cell survival, take part in immune response and increases in stress. In this experiment, our goal is to demonstrate how acrylamide shifts NfκB expression.

Methods: 24 hours prior to the experiment, Clone 9 hepatocytes, cultured in an incubator at 37 °C and 5% CO_2, were plated onto coverslips in 6-well plates and were allowed to adhere. Then, some of the cells were given acrylamide while some of the cells were not given acrylamide. After 24 hours, cells were fixed, and their membrane permeabilities were increased by treating them with Triton X for 5 min, and the cells were stained with anti-NfκB antibody.

Results: The comparison of immunocytochemically stained samples of acrylamide-treated and untreated cells, revealed that NfkB was more positively stained in the acrylamide group.

Conclusion: Acrylamide increases NFκB protein expression in Clone 9 cells. Further studies are warranted to elucidate the mechanism in more detail way.

Keywords: acrylamide, NfκB, immunocytochemistry

P-116

The sensitivity of neutral red cytotoxicity test was assessed by serial dilution method

Kaçar S, Tomsuk Ö, Tanrıkut C, Şahintürk V

Department of Histology and Embryology, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Neutral Red (NR) is a colorimetric viability test commonly used to determine cell viability through lysosomal activity. It is based on the principle that living cells are stained with neutral red. This study aims to evaluate whether the change in absorbance of the neutral red is sufficiently parallel with the change in cell number.

Methods: Du145 cells were used for this study. Cells were seeded into 96-well tissue culture plates (100 µl/well) each by serial dilution. 6 wells were used for each sample. After 24 hours of incubation at 37 °C, the cells were washed with DPBS (Dulbecco's phosphate-buffered saline), wrapped with aluminum foil and incubated with 1% NR 3 hours at 37 °C. At the

end of the incubation, the medium was discarded, the cells were re-washed with DPBS, and 100 µl of desorption solution (1% glacial acetic acid, 49% ethanol) was transferred to the wells to solubilize the dye, and the plate was shaken for 20 min. Finally, absorbance values wavelength were read in ELISA at 540 nm

Results: In general, the viability ratios which neutral red indicates decreases in proportional to the decreasing number of cells. However, that decrease was not preciselyproportional to the serial decrease in cell number. When the viability of undiluted cells is accepted as 100, and the viabilities of other diluted cells are accepted as 50, 25, 12.5, 6.25, 3.125, 1.56 and 0.78., viability ratios of neutral red correspond to 100, 73.0, 59.3, 38.5, 27.7, 14.3, 11.5 and 8.3, respectively. In this sense, as the number of cells decreases, the sensitivity of the measurement decreases in the neutral red test.

Conclusion: Neutral red viability test may not be a sensitive enough to assess number of cells. It should be evaluated together with other cytotoxicity tests.

Keywords: cell culture, cytotoxicity, neutral red test

P-117

Rare variation in the aortic arch anatomy - avian form: a case report

Işıklar S[1,2], Özdemir S[2], Nas ÖF[3]

[1]Medical Imaging Techniques Program, Health Services Vocational High School, Bursa Uludağ University, Bursa, Turkey; [2]Department of Anatomy, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey; [3]Department of Radiology, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey

Objective: The aorta, that is the main artery of the body, consists of three basic parts: aorta ascendens, arcus aorta and aorta descendens. Arcus aorta starts at the level of the upper edge of the right second sternocostal joint and continues to the back and to the left in the form of a curve. The classic and most common branching pattern of Arcus aorta, respectively, truncus brachiocephalicus, a. carotis communis sinistra and a. subclavia sinistra from right to left. The incidence of this type has been reported in the literature as 64.9–94.3%. There are many anatomic variations in the aortic branch of Arcus. A total of 6 different branching models are mentioned in the literature. The most rare type is Avian arcus aorta. There are few cases reported for Avian arcus aorta, the most rare type.

Methods: Fifty nine years old male patient was admitted to our hospital with complaints of headaches. The patient was referred to the Interventional Radiology Unit of Radiology Department of Uludağ University Medical Faculty for supraaortic nonselective catheterization. Aortic arch injection with 5 French pigtail catheters was performed before the procedure. Digital subtraction angiography (DSA) image of arcus aorta was examined from left oblique projection.

Results: Both carotid arteries were observed to have a common trunk. Similarly, the bilateral subclavian arteries were found to have continued from a common trunk. This anatomic appearance resembling that of the arcus aorta in the birds was regarded as a rare Avian arcus aorta.

Conclusion: Avian arcus aorta variation is often asymptomatic and there is no need for treatment. However, it should be known that different arcus aortic branching variations can lead to clinical findings. Knowing the arcus aorta branching variations and its type in terms of surgical interventions planned for diagnostic and therapeutic interventional radiological procedures and especially in the head and neck and chest region will be important in terms of prevention of possible neurological complications. Knowing and recognition of the Avian form arcus aorta variant, in which there is very few reported cases reported with a frequency of 0.16% by Natsis et al., is important for cardiologists, interventional radiologists, cardiovascular surgeons and chest surgeons.

Keywords: anatomy, avian arcus aorta, variation

P-118

Left persistent superior vena cava: anatomical and radiologic evaluation of four cases and review of the literature

Karabekir E[1], Çalışkan S[2], Akkaşoğlu S[2], Günenç Beşer C[3]

[1]Department of Radiology, Ankara Atatürk Training and Research Hospital, Ankara, Turkey; [2]Department of Anatomy, Faculty of Medicine, Yıldırım Beyazıt University, Ankara, Turkey; [3]Department of Anatomy, Faculty of Medicine, Hacettepe University, Ankara, Turkey

Objective: Superior vena cava is a right sided single vein formed by the union of left and right brachiocephalic veins. Left persistent superior vena cava (LPSVC) is a thoracic venous variation which is usually incidentally diagnosed. However, it is a rare congenital anomaly with the incidence of 0.3–0.5 %, it is considered to be the most common congenital venous anomaly among the other thoracic venous system anomalies. LPSVC may present as an isolated anomaly or may accompany other congenital heart diseases such as aortic coarctation, tetralogy of Fallot, transposition of great vessels or dextroversion. LPSVC usually drains into right atrium via coronary sinus (90%), but it may also drain into left atrium directly or via an unroofed coronary sinus.

Methods: In the present study, four cases with LPSVC, incidentally diagnosed in the radiology department were reported. 1of the cases was viewed with Computed Tomography (CT) and 3 of the cases with Magnetic Resonance Imaging (MRI).

Results: 3 of the patients were females and 1 of them was male. The ages of the patients were 33, 40, 59, 60. No other accompanying pathologies were found.The literature about the LPSVC cases and their clinical implications were searched and discussed in this article.

Conclusion: LPSVC is an asymptomatic anomaly diagnosed by radiologists when an imaging method is performed for another medical reason. Such anomalies should be taken into consideration by the surgeons dealing with this region to prevent the injury of the variant vessels. This situation may also

lead to difficulties with central venous catheter insertion and pacemaker implantation.

Keywords: clinical anatomy, left persistent superior vena cava, MRI, CT, radiologic anatomy, variation

P-119

The importance of the supratrochlear foramen of the humerus in humans: an anatomical study

Erdoğmuş S[1], Güler M[1], Eroğlu S[2], Duran N[3]

[1]Department of Anatomy, Tayfur Ata Sökmen Faculty of Medicine, Hatay Mustafa Kemal University, Hatay, Turkey; [2]Department of Anthropology, Hatay Mustafa Kemal University, Hatay, Turkey; [3]Department of Microbiology, Tayfur Ata Sökmen Faculty of Medicine, Hatay Mustafa Kemal University, Hatay, Turkey

Objective: The supratrochlear foramen (STF) is an important and relatively common anatomic variation in the lower end of the humerus in humans. Its structure has received increased attention in recent years. Anatomical knowledge of STF is useful for anatomists, anthropologists, orthopedic surgeons, and radiologists. The goal of this study was to describe the features of STF of the humerus in the Turkish population.

Methods: All bones were obtained from the Department of Anatomy, Faculty of Medicine and Department of Antrophology, University of Mustafa Kemal, Hatay. A total of 166 dried humeri (83 right side and 83 left side), of which 78 belonged to males and 88 to females, were examined to determine the presence of supratrochlear foramen. Digital vernier calipers were used to measure the maximum width (transverse) and height (vertical) of the STF.

Results: Out of 166 bones, the foramen was present in 18 humeri (4 right side and 14 left side), showing the incidence as 10.8% with unpaired humeri. We observed 4 types of shape: oval, round, triangular, and sieve-like. The average diameter of the long (transverse) axis was 5.93±1.68 mm and the short (vertical) axis was 4.06±0.89 mm. Some of the bones showed translucency of the bony septum, found in 17 (20.5%) on both sides of the humeri.

Conclusion: There are few studies about STF in the Turkish population. Knowledge of supratrochlear foramen in the distal humerus in humans is important in diagnostic orthopedics, in intramedullary nailing of the humerus, and in possibly increasing the risk of future low-energy fractures. In addition, STF is a radiolucent area in radiographs and may be misinterpreted as an osteolytic or cystic lesion.

Keywords: anatomy, humerus, observer variation, supratrochlear foramen

P-120

An accessory muscle in hypothenar region

Yıldız SD[1], Bilisli E[2], Verimli U[1], Özdoğmuş O[1], Şehirli ÜS[1]

[1]Department of Anatomy, Faculty of Medicine, Marmara University, Istanbul, Turkey; [2]Department of Anatomy, Faculty of Medicine, Yeditepe University, Istanbul, Turkey

Objective: The hypothenar region of the hand possesses three muscles: m.abductor digiti minimi (AbDM), m. flexor digiti minimi brevis (FDMB) and m.opponens digiti minmi (ODM). Variations of these muscles are relatively common and described in several studies. In hypothenar region variations of the number of muscle belly and their origin and/or insertion points can be occured. An accessory muscle in the hypothenar region was observed during a cadaveric dissection. This report presents a detailed description of the anatomy of an accessory muscle in hypothenar region.

Methods: During one of the routine dissections of the hand region, a variant muscle was observed in left hypothenar region in a 83-year-old male cadaver. A detailed dissection of the muscle was performed to determine its course.

Results: The variative muscle originates from the tendon of the flexor carpi ulnaris muscle, continues under the palmaris brevis muscle between AbDM and FDMB muscles. During its course, it is observed medial to the ulnar nerve and artery. Its tendon unites with some fibers of the AbDM muscle but inserts onto deep transverse metacarpal ligament. Lenght of the muscle is 111.4 mm. The lenght of the tendon is 83.6 mm. Circumference of the muscle at the middle portion is 11.13 mm. The widest width of the muscle is 6 mm. The average width of the tendon is 0.58 mm. The muscle is innervated by ulnar nerve and supplied by the ulnar artery It tends to flex the fourth and the fifth digits.

Conclusion: The muscle variations should be taken into consideration during surgical procedures and clinical decision making since they may impact the course of treatment in the pathologies of this region.

Keywords: hypothenar, muscle, variation

P-121

The fiber dissection technique: systematic anatomic medial approach

Çelik S, Bilge O, Yurttaş C, Özturk L

Department of Anatomy, Faculty of Medicine, Ege University, Izmir, Turkey

Objective: Development in magnifying techniques and micro neurosurgery was necessitated to the neurosurgeon research fibers pathways anatomy and make practice on cadaver's brains. Because of this fact there is limited researches executed in recent literature by anatomist despite of the clinicians especially neurosurgeons. The fiber dissection technique of the brain is important not only for neurosurgeons but also for anatomist. Only with clinical view or disregarding of aspect of anatomist cause terminological and descriptive confusion of terms and preparation methodology of the fibers. The aim of the study was to evaluate fiber technique, determine steps and terminology of the brain fiber dissection of the medial surface in systematic anatomic manner, finally organizing national dissection course for young anatomists.

Methods: Brains were prepared according to modified Klingler method. Medial surfaces of seven hemispheres were dissected for determining steps as it can show the most brain structure in systematic manner. Wooden spatulas with different size of tips, scalpels and 1.8×, 3× and 6× magnified glasses were used. Respectively cortex and the white matter of the limbic, frontal, parietal, occipital and temporal lobes were dissected. After description of dissection steps of process a national course for young anatomist would executed in 2016–2017. In final step questionnaire were executed to evaluate effectiveness of the model in practical learning.

Results: Steps of the technique was determined in systematic manner and terminology of the structures are described according to anatomical terminology. The young anatomists (28 trainees) attended to Medical Dissection Course (MEDISEC) Brain and Fiber Dissection Course in 2016 to 2017 and they dissected brains. All trainees replied to the survey that the method is very effective.

Conclusion: This method is very effective, allow to learn almost all white fiber of the medial surface and our staff executed national fiber dissection course.

Keywords: brain white matter, fiber dissection technique, modified Klingler method, postgraduate cadaver dissection course

P-122

Ebstein's anomaly; anatomical and radiologic evaluation of five cases and review of the literature

Ercan K[1], Akkaşoğlu S[2], Çalışkan S[2], Günenç Beşer C[3]

[1]*Department of Radiology, Ankara Atatürk Training and Research Hospital, Ankara, Turkey;* [2]*Department of Anatomy, Faculty of Medicine, Yıldırım Beyazıt University, Ankara, Turkey;* [3]*Department of Anatomy, Faculty of Medicine, Hacettepe University, Ankara, Turkey*

Objective: Tricuspid valve consists of anterior, posterior and septal leaflets. Ebstein's anomaly (EA) is a congenital heart disease characterized by the downward displacement of septal and posterior leaflets. They form a functional tricuspid annulus below the anatomic annulus. The dysplastic leaflets directly insert into myocardium or they are tethered by short papillary muscles. EA can be seen at one to five of 200,000 live births with an incidence of less than 1% among the congenital heart diseases. The displaced functional annulus divides the right ventricle into two parts; 'atrialized' part (which looks like a direct continuation of right atrium) and 'functional' part. Structural abnormalities which are likely to accompany EA are the atrial septal defect, patent foramen ovale, pulmonary stenosis and ventricular septal defect.

Methods: In this study, there are five cases incidentally diagnosed with Ebstein's Anomaly in the radiology department. The patients underwent cardiac imaging for various symptoms. All of the cases were viewed with Magnetic Resonance Imaging (MRI).

Results: 3 of the patients were female and 2 of them were male. The ages of the patients were 26, 50, 52, 55 and 60. No other accompanying pathologies of this region were found.

Conclusion: EA is a congenital anomaly and is present at birth but clinical findings may occur at any age. It presents with a spectrum of severity. While some patients present with ventricular dysfunction, others are asymptomatic. Because of its' long-term life expectancy after surgical repair radiologic view in asymptomatic patients becomes important. EA must be kept in mind by the radiologists dealing with thoracic imaging even in asymptomatic patients.

Keywords: Ebstein's anomaly, radiologic anatomy, variations, magnetic resonance image

P-123

Optic nerve sheath diameter measurement: a means of detecting raised increased intracranial pressure in pseudotumor cerebri patients

Ertekin T[1], Boyacı MG[2], Bilir A[1], Yücel A[3], Ertekin A[4], Turamanlar O[1]

[1]*Department of Anatomy, Faculty of Medicine, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey;* [2]*Department of Neurosurgery, Faculty of Medicine, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey;* [3]*Department of Radiology, Faculty of Medicine, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey;* [4]*Emergency Medicine, Afyonkarahisar State Hospital, Afyonkarahisar, Turkey*

Objective: ONSD (optic nerve sheath diameter) is a method used for indirect measurement of the increased intracranial pressure. Pseudotumor cerebri (PS) occurs when the pressure inside your skull (intracranial pressure) increases for no obvious reason. The aim of this study was to investigate the relationship between the optic nerve sheath diameter (ONSD) measured on magnetic resonance images (MRi) and the diagnosis of PS on neurosurgical patients.

Methods: Retrospective study of MR data of adult PS patients (n=40) and control group (n=40) were analyzed. Intracranial pressure was measured invasively in neurosurgical intensive care unit with lumbar puncture. For ONSD measurements, the 3-mm posterior location where the optic nerve enters the eyeball was used. The median

Results: ONSD for control and PS groups was 4.35 mm and 5.25 mm, respectively ($p \leq 0.001$). A correlation was determined between the intracranial pressure and ONSD values (r: 0.27).

Conclusion: This non-invasive technique maybe useful in monitoring the current invasive intracranial catheter and has wide potential clinical applications in district hospitals, emergency departments and intensive care units. Assessment of ONSD in head MRI taken with PS suspicion may contribute to the diagnoses of SP.

Keywords: intracranial pressure, optic nerve, pseudotumor cerebri

P-124

Effect of ultrasound therapy on collateral axonal branching at the lesion site and vibrissal muscle polyinnervation pattern after facial nerve injury

Özsoy U[1], Öğüt E[1], Şekerci R[1], Hizay A[1], Angelov DN[2]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [2]Anatomical Institute I, University of Cologne, Cologne, Germany

Objective: Facial nerve damage is a trauma that occurs frequently in the clinical practice and causes accompanying psychological and social problems. Although several studies have focused on the repair of the injured nerve, no functional recovery has been achieved yet. Ultrasound therapy after nerve damage is becoming increasingly important in recent years. However, the underlying mechanism of beneficial effect from ultrasound therapy could not be revealed. In our recent studies we have shown that, manual stimulation reduces poly-innervation of the motor endplates in denervated muscles and improves recovery of vibrissal whisking after facial-facial and hypoglossal-facial nerve repair. The aim of this study is to test whether ultrasound therapy improves morphological and functional parameters after facial nerve injury and repair.

Methods: For this purpose, after transection and suture of the buccal branch of the facial nerve, pulsed or continuous type of ultrasound therapy were applied to the paralyzed whisker pad muscles of rats in the course of 2 months.

Results: Continuous ultrasound therapy caused a significant increase in collateral axonal branching when compared to the to the pulsed or sham ultrasound therapy. Both types of therapy could not reduce poly-innervation pattern. Pulsed type of ultrasound caused a slight improvement in functional parameters.

Conclusion: This is the first study on effect of therapeutic ultrasound on poly-innervation and collateral axonal branching after peripheral nerve repair.The results of the present study show different impact of pulsed and continuous ultrasound therapy on the functional and structural recovery after nerve injury. The variable structural and functional results generated by different types of ultrasound indicate the need for future work by dose adjustment.

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Keywords: therapeutic ultrasound, poly-innervation, collateral axonal branching

P-125

Morphometrical investigation of femur in gender determination

Hız İ[1], Akbaş Y[1], Güner M[1], Öz S[2], Özden H[1]

[1]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey; [2]Health Care Services Vocational School, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Human bones are important structures in gender determination. Despite the fact that cranium and pelvis are more commonly used for sex determination, long bones are also used. When pelvis or cranium bones can't be used, long bones are important for gender determination. In this study, we will use the femur of the long bones to estimate the gender difference.

Methods: 100 femurs were used in our work; 53 are left, 47 were right femurs. These bones were obtained from ESOGÜ Faculty of Medicine Anatomy Department. Digital calipers with 0.1 mm sensitivity were used in the measurements.

Results: In the measurement of the 100 femurs, the distance of the bicondylar and the edge measurements of the imaginary triangle formed on the back of the femur head were made. The "A" point of the created triangle was chosen as the tip of the lateral part of the femur head joint, the "B" point being the most medial of the "trochanter major", the "C" point being the top of the trochanter minor. The 'B', 'C' and 'A' points in the triangles described are directly related to the functional muscle movements of the person. For this reason, the position of the "A" point will change in both sexes. AB, BC, AC lengths were measured by forming an imaginary triangle. 57% male, 43% female; 43% male, 57% female; 43% male and 57% female according to AB, AC, BC. At the end of the bicondylar length measurement, 52% male and 48% female were estimated.

Conclusion: When there are no pelvis or cranium bones, the most important parts of the body are the long bones and the most important is the femur in gender determination.

Keywords: digital caliper, femur, gender determination

P-126

Prof. Dr. Fuat Sezgin's studies on medicine and anatomy

Akbaş Y, Aslan D[1], Hız İ, Özden H

Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: Professor Dr. Fuat Sezgin is a precious scientist who has been working in the field of science and technology in the history of Islam. He studied at the Oriental Institute of the Istanbul University Faculty of Letters with the German Orientalist Hellmunt Ritter in the field of Islamic Sciences and Orientalism. In 1982 he constituted the Museum of the History of Arab-Islamic Sciences affiliated to J.W. Goethe University and the museum in 1983. Sezgin exhibited samples made by muslim scholars around Islamic culture based on written sources of scientific tools and instruments. Later on May 25, 2008, he made a similar role of these scientific instruments and played a leading role in the opening of "Istanbul Islam, Science and Technology Museum". Our purpose in this study to investigate Prof. Dr. Sezgins' studies who is an academic and plays very important role when we see science and technology in our history which gives very valuable works. Especially in Islam, which is a work of 13 volumes, Scientific and Technical Volume IV contains instru-

ments, applied interventions, medical information and anatomical drawings used in the field of medicine in history.

Methods: We did this work from Prof. Dr. Sezgin's various sources, books and interviews.

Results: While the Western world underrates in scientific research and developments in the Islamic world, Prof. Dr. Sezgin intrigued research reveals that this is the opposite picture. Thus, the Islamic World and the Anatolian civilization are conveyed to the present generation rightly. After 1960, he had to go abroad because of political reasons. But as a "contemporary" scientist who has not been a "westernist", he has not conceded his scientific identity and original personality.

Conclusion: While many historians of science in the West and our nation have fallen into the ideological circle of positivism, he has become a ground-breaking patriotic historical researcher with a history of revolution.

Keywords: anatomy, Fuat Sezgin, history, science

P-127

The effect of antiepileptic administration on the hippocampal volume during prenatal period in rats

Akbaş Y[1], Hız İ[1], Güner M[1], Ulupınar E[1,2]

[1]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey; [2]Interdisciplinary Neuroscience Department, Institute of Health Sciences, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: During pregnancy both epileptic seizures and the usage of antiepileptic drugs might similarly cause harmful effects on the fetal growth. Neurodevelopmental disorders and behavioral problems are the most common side effects of antiepileptic drugs following their teratogenic outcomes. The hippocampus, one of the region having the highest capacity of synaptic plasticity in the brain, is closely related to cognitive functions and behavioral disorders. The aim of this study was to compare the effects of phenobarbital, a classically used drug in pregnancy, and lamotrigine, more frequently preferred in clinic recently, on the volume of hippocampus.

Methods: Sprague-Dawley rats were divided into 2 groups (n=6, in each group): Lamotrigine (5 mg/kg) and phenobarbital (20 mg/kg) were administered via oral gavage during pregnancy. After weaning (at postnatal day 26), male offspring born from mothers receiving treatment were perfused by intracardiac 4% paraformaldehyde solution. Serial sections at a thickness of 100 µm were taken from the hippocampus region by using vibratome and stained with Nissl method. The total volumes of dentate gyrus (DG) and CA1-3 subfields s were determined by the Cavalieri volume estimation method. Obtained data were compared statistically using the student's t-test.

Results: The total volumes of DG and CA1-3 regions of the offspring subjected to phenobarbital during prenatal period were calculated as $42.4\times10^7\pm4.56$ and $95.6\times10^7\pm10.5$, respectively. These values were $39\times10^7\pm4.72$ and $75.8\times10^7\pm6.37$ in the lamotrigine group. When the mean volumes of the groups were compared statistically, the volume of CA1-3 region was found significantly ($p<0.05$) lower in phenobarbital-treated group than the values of lamotrigine group. However, no significant difference was observed in the volumes of DG.

Conclusions: Our study's results have shown that phenobarbital has adverse effects, especially on the pyramidal neurons, whereas lamotrigine relatively did not cause a significant alteration on the hippocampal pyramidal and granular neurons. These findings suggest that dentate gyrus, one of the regions where neurogenesis continues in the adulthood and compensatory changes can be occurred, is more resistant to the adverse environmental conditions in prenatal and postnatal periods than the pyramidal neurons.

Keywords: dentate gyrus, hippocampus, CA1-3, lamotrigine, phenobarbital

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Evaluation of vascular and neural anatomy of the hand in adult cadavers

Kastamoni Yaşar Y[1], Anıl A[2], Peker T[2], Anıl F[3]

[1]Department of Anatomy, Faculty of Medicine, Süleyman Demirel University, Isparta, Turkey; [2]Department of Anatomy, Faculty of Medicine, Gazi University, Ankara, Turkey; [3]Akşehir Kadir Yallagoz School of Health, Selçuk University, Konya, Turkey

Objective: The vascular and neural anatomy of hand is quite complex in terms of the number of branches given by these structures and the course of these branches. Recently, with advances in the field of microsurgery, the vascular and neural structure of the hand has become even more important in reconstructive hand surgery. In our study, we investigated the vascular and neural anatomy of the hand in adult cadavers and aimed to determine the normal anatomical structures and variations of these structures.

Methods: 20 hands of adult cadavers were examined by anatomic dissection method. After skin and superficial structures were removed, superficial palmar arch, ulnar nerve and median nerve were identified and anatomical structures and variations of these structures were evaluated. In addition, classifications were made according to the anatomical structure of these structures, the number of branches they gave and course of these branches. After these procedures, the superficial palmar arch and nerves were cut from the wrist fold and removed to the fingers. Lumbrical muscles and flexor muscle tendons were removed. Deep palmar arch was defined and anatomical structure and variations of this arch were evaluated. Subsequently, classification were made according to the anatomical structure of deep palmar arch, the number of branches it gave and course of these branches.

Results: At the end of these procedures, the number of branches given by vascular and neural structures of the hand and the course of these branches were determined. According to these findings; superficial palmar arch, nerves and deep pal-

mar arch were grouped under 7, 4 and 3 main groups, respectively.

Conclusion: We believe that the data obtained in our study will be included in the education of anatomy and will lead neurologists, surgeons, orthopedists, radiologists, pediatricians and anatomists in their studies, diagnosis and treatment.

Keywords: superficial palmar arch, deep palmar arch, ulnar nerve, median nerve

P-129

Sectional examination of anatomical structures in fetus hands by orcein-picroindigocarmine and hematoxylin-eosin staining

Kastamoni Yaşar Y[1], Anıl A[2], Ömeroğlu S[3], Peker T[2], Anıl F[4]

[1]Department of Anatomy, Faculty of Medicine, Süleyman Demirel University, Isparta, Turkey; [2]Department of Anatomy, Faculty of Medicine, Gazi University, Ankara, Turkey; [3]Department of Histology and Embryology, Faculty of Medicine, Gazi University, Ankara, Turkey; [4]Akşehir Kadir Yallagoz School of Health, Selçuk University, Konya, Turkey

Objective: In the cadaveric sections, the appearance of the tissues in similar colors and the inability to be distinguished from each other with radiological imaging methods because of the similar tissue densities of some tissues are the most important of the basic problems in the sectional anatomy. Therefore, histological staining method such as multi-tissue staining is a very useful method for differentiating anatomical structures. In our study, we investigated the vascular and neural anatomy of the hand in fetuses and aimed to determine the anatomical structures of these structures from sections.

Methods: 10 hands of fetuses with ages between 18–20 weeks were examined by histological staining method. Hands of fetuses were embedded in paraffin blocks in accordance with the procedure. Subsequently, sections with a thickness of 4 microns were taken from paraffin blocks, 100 samples were stained with Orcein-Picroindigocarmine and 100 samples were stained with Hematoxylin-Eosin stain. Dyed sections were examined under a microscope, vascular and neural anatomy of the hand was evaluated in particular with some anatomical structures.

Results: In sections dyed by Orcein-Picroindigocarmine, it was observed to be painted that perichondrium turquoise-blue, chondrocytes pink, bone tissue indigo, muscle fibers yellow-green and elastic fibers in arterial wall brown. In Hematoxylin-Eosin staining, it was not that nucleus structures of the cells were dyed dark by taking hematoxylin while the cytoplasm of the cell was dyed light pink by taking eosin. According to these findings, Orcein-Picroindigocarmine staining method is more suitable for differentiating the anatomical structures in the sections than the Hematoxylin-Eosin staining method because its property of dying different tissues in different colors.

Conclusion: We believe that the data obtained in our study will be included in the education of anatomy and histology and will lead pathologists, radiologists, anatomists and histologists in their studies and diagnosis and treatment.

Keywords: sectional anatomy, Orcein-Picroindigocarmine, Hematoxylin-Eosin, multi-tissue staining

P-130

Third ventricle colloid cyst as a rare reason of acute hydrocephalus in childhood

Kaçmaz M, Tahta Y

Step 3 Intensive Care Unit, Education and Research Hospital, Niğde Ömer Halisdemir University, Niğde, Turkey

Objective: Colloid cysts are rare benign tumors of the third ventricle. These cysts can be found incidentally without symptoms, but also with many clinical signs depending on the cyst. Immediately after giving the clinical result, it can also result in death. Cystic growth is an uncommon event, a complication that can cause sudden deterioration and death in the patient's condition, causing obstructive hydrocephalus. In the literature, especially in pediatric patients, the incidence of sudden death resulting from obstruction of the third ventricle after in vivo diagnosis is quite rare. In this case, it is aimed to present the case of third ventricular colloid cyst obstruction with brain death despite urgent ventriculostomy due to rapid development of hydrocephalus in the emergency department with sudden loss of consciousness.

Methods: The case was a 15-year-old male patient who had never had any health problems before. According to the description of the relatives, there was a loss of consciousness at the level of not responding to the warning, and an emergency service was brought by his friends.

Results: In the examination performed on emergency service; blood pressure was 140/80 mmHg, pulse was 67 beats / min, oxygen saturation was 90%. A painful stimulus with eye opening and motor response was not present. Bilateral dilatation and loss of light reflex were present in the pupils. The eye examination performed was compatible with papillary edema. In the preoperative noncontrast brain tomography examination, edema was seen in both cerebral hemispheres. At the level of the foramen monrode, there was a hyperdense appearance of approximately 12 mm in the base of the third ventricle compatible with the collapsed cyst. Because of the patient's presence on the acute hydrocephalus table, the operation was performed to allow immediate ventriculostomy without any time.

Conclusion: Intraventricular obstructive conditions should be considered in the differential diagnosis of sudden headache, nausea and vomiting, especially during childhood. In patients presenting with clinical findings compatible with increased intracranial pressure on neurological examination, further investigation including imaging methods should be performed as soon as possible.

Keywords: acute hydrocephalus, colloid cyst, ventricular

P-131

Incidence of sutural bones in the sutura lambdoidea of the cranium at the Department of Anatomy of Akdeniz University Faculty of Medicine

Yıldırım Y, Süzen LB

Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: It is possible to encounter accessory bones, cranium bones between each other or within themselves. The formation of ossa suturarum is due to additional ossification centers occurring in bone sutures or near sutures. The sutura bones at the lambda point are called os incae. Sutural bones can usually located in the right arm or left arm of the sutura lambdoidea. We performed this study to determine the incidence of sutural bones in the our laboratory.

Methods: In our study, 74 unidentified human cranium was usedin our laboratory.

Results: Included 74 cranium to work; os suturarum and inca bones were found in 18 cranium (24.32%). 8 inca bone were found in 18 cranium (10.8%). Sutural bones in lambdoid suture were found in 10 of 18 cranium (13.51%).

Conclusion: The presence of the sutural bones must be known on the radiological diagnosis, because it can be confused with skull fractures. The rate of sutural bones was 24.32% in our laboratory. We believe that our work will set light to future incidence studies.

Keywords: cranium, sutura lambdoidea, ossa suturarum, os incae.

P-132

Three-dimensional analysis of spinal curvature in adolescent idiopathic scoliosis: a pilot study

Yıldırım Y[1], Özsoy U[1], Tombak K[2], Yüksel İ[3]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [2]Department of Physiotherapy and Rehabilitation, Faculty of Health Sciences, Akdeniz University, Antalya, Turkey; [3]Department of Physiotherapy and Rehabilitation, Faculty of Health Sciences, Eastern Mediterranean University, Nicosia, Turkish Republic of Northern Cyprus

Objective: It is clinically important to determine degree of spinal curvature in adolescent idiopathic scoliosis and follow up during treatment. Therefore, routine radiological methods are used in the clinical examination. However, this may cause patients to suffer from long-term exposure to radiation during the treatment. For this reason, it is important to develop noninvasive methods.In the present study, we used a 3D scanner for the determination of scoliosis-induced spinal curvatures. We compared the results obtained by using 3D scanner with the results obtained by conventional methods such as Cobb angle and POTSI index.

Methods: Five (2 male, 3 female) scoliotic patients aged 9–16 years were scanned and digitized. A mirrored image was generated from original digitized image. Then, the asymmetry value of the torso was calculated by means of the root mean square formula (RMS) by superimposition of original and mirrored images. In order to test correlation among the measurements the Pearson's correlation coefficient was calculated.

Results: Mean Cobb angle value was calculated as 21.38°±9.8°, POTSI index as 16.75±6.9 and RMS as 6.1±3.5mm. A very strong correlation was found between RMS and POTSI values (r=1, p=0.017). However, no significant correlation was found neither between Cobb and POTSI (r=-0.3, p=0.68) nor between Cobb and RMS (r=-0.3, p=0.68).

Conclusion: We believe that the three-dimensional surface analysis method can be used as a new parameter in clinic examinations because of its strong correlation with the POTSI index. However, we think that it should be examined in a new study with a larger patient group.

Keywords: Cobb angle, potsi, RMS, topographic analysis, scoliosis

P-133

Long cystic duct detected by magnetic resonance cholangiopancreatography

Fazlıoğulları Z[1], Pirinç B[1], Koplay M[2], Karabulut AK[1], Ünver Doğan N[1]

[1]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [2]Department of Radiology, Faculty of Medicine, Selçuk University, Konya, Turkey

Objective: Cystic duct, which approximaly 4 cm length, 1 – 5 mm diameter connects neck of gallbladder to common hepatic duct. When food arrives in duodenum, cystic ducttransports concentrated the bile to duodenum along with the bile duct. In this presentation, the findings obtained from magnetic resonance cholangiopancreatography (MRCP) images related to long cystic duct in patients presenting with abdominopelvic pain, nausea and vomiting were described.

Methods: The MR cholangiography images of the patient who was consulted Selçuk University Medical Faculty hospital with abdominopelvic pain, nausea and vomiting were evaluated.

Results: MR cholangiography images of a 47-year-old female patient using intravenous 10 ml contrast material revealed that cystic duct opening to distal level of bile duct and a long cystic duct variation was detected. Length of the cystic duct is 5,94 cm. There were a number of gallstones 17 mm in diameter in lumen of gallbladder and 15 mm in diameter a gallstones at neck of gallbladder level. The findings are consistent with cholecystitis with acute stones. Cystic duct, combined with 1/3 distal segment of the extrahepatic biliary tract and parallel progression of this duct considered as long cystic canal. The frequency of anatomic variations of the cystic duct was 18–23% in the literature, while the long cystic duct variation was reported as 10%.

Conclusion: Knowledge of the variable anatomy of the cystic duct and cysticohepatic junction is important to avoid significant ductal injury in biliary surgery. In addition, ligation of cystic duct, which long and parallel to the common hepatic duct, can damage or result narrowing by mistake/accidently adjacent common hepatic duct. In long cystic duct cases, the residual after cholecystectomy (longer than 6 cm) may be more. Thus, this may cause inflammatory changes and postcholecystectomy syndrome. Liver resection and partial liver transplantation requires accurate identification of biliary anatomy and anatomical variations.

Keywords: anatomy, long cystic duct, magnetic resonance cholangiopancreatography, variation

P-134

The thigh extension of the small saphenous vein: usual course of an unusual proximal thigh extension tributary of the small saphenous vein

Verimli U, Odabaş ZB, Ayran A, Kirazlı Ö, Şehirli ÜS

Department of Anatomy, Faculty of Medicine, Marmara University, Istanbul, Turkey

Objective: The anatomy of the lower extremity venous system is extremely variable. Thigh extension (TE) of the small saphenous vein (SSV) is the proximal continuation of the SSV, branching in the superficial layer of the popliteal fossa. Due to the anatomical proximity of TE of the SSV, it is very commonly used in harvesting for bypass surgery. In this cadaveric case study we aimed to explore the course, connections and termination of the TE of SSV.

Methods: During routine cadaver dissection study in an 83 year-old male cadaver, we have observed an extra vein coursing the posterior thigh as an extension of the SSV on the right thigh region. General anatomical route, proximal and distal terminations of this vein were examined macroscopically. Due to a large premortal hematoma on the left posterior thigh, superficial structures including regional veins could not be recognized thoroughly.

Results: The TE of the SSV was observed to be located at the beginning superficial to thigh fascial structures. The proximal and distal terminations of this vein was traced and photographed. It had a 19 cm long route coursing between its connection to the popliteal vein (PV) and its termination at lateral deep thigh. During its course beginning from its connection to the PV to its end, it deepened its route towards the proximal posterior thigh region. The junction to the PV was in shape of a very uncommon 2.5 cm long "H" type bridge anastomosis. Distally 5 cm above the junction it had a connection to femoral vein by disrupting vastoadductor membrane. Approximately one third proximally, it received branches draining the semimembranosus muscle, then it diverted its course laterally between the long head of biceps femoris and vastus lateralis muscles and towards deeper layers of the area.

Conclusion: This very uncommon variation may be of importance in accumulating data for frequently utilized clinical interventions such as vein harvesting procedures and may prevent possible complications.

Keywords: H type bridge, small saphenous vein, thigh extension, vein harvesting

P-135

Determination of safe interval in percutaneous Achilles tendon repair; cadaveric study

Öztürk S[1], Acar B[2], Göztepe B[3], Karakoyun ZN[1], Büyükmumcu M[4], Sindel M[1]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [2]Department of Orthopedics, Antalya Training and Research Hospital, Antalya, Turkey; [3]Faculty of Medicine, Akdeniz University, Antalya, Turkey; [4]Department of Anatomy, Faculty of Medicine, Necmettin Erbakan University, Konya, Turkey

Objective: The sural nerve (SN) where merges distal 1/3 of the leg, consists of the fusion of medial sural cutaneous nerve from the tibial nerve and lateral sural cutaneous nerve which is the branch of the common peroneal nerve. It can be damaged during percutaneous repair of the Achilles tendon ruptures because of running along superficially. In this study, it was aimed to determine safe interval which allows the intervention without damaging the sural nerve by looking its course and relations between anatomical formations.

Methods: In this study, we used 10 formalin fixed adult human cadavers' lower limbs which have intact knee and ankle joints, in the Akdeniz University Medical Faculty Anatomy Department. Measurements were made by a single person with tape measure. The cadaver was in prone position while the measurement was being made. The course of SN was observed in cadavers. The distance between calcaneal tuberosity and the location where Achilles tendon crosses SN, distance between Achilles' insertion and SN and distance from part of origin of Achilles tendon to calcaneal tuberosity were measured.

Results: When the results of the 5 right and 5 left lower limbs' measurements are taken into consideration, the right and left mean distance from part of origin of Achilles tendon to calcaneal tuberosity was found 22.1 cm. The right and left mean distance between Achilles' insertion and SN was measured as 2.6–2.54 cm, respectively. The mean distance between calcaneal tuberosity and the location where Achilles tendon crosses SN was found as 11.28 cm on the right and 11cm on the left. This distance was measured minimum 8.6 cm, maximum 13.4 cm.

Conclusion: In conclusion, we believe that percutaneous repair of Achilles tendon ruptures which performed 13.4 cm above the calcaneal tuberosity will reduce the risk of damage to SN and will be beneficial to orthopedic surgeons.

Keywords: Achilles tendon, gastrocnemius contracture, sural nerve

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Evaluation of uncus volume in healthy individuals

Karakoyun ZN[1], Öz N[1], Alkan E[1], Acer N[2], Süzen LB[1]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [2]Department of Anatomy, Faculty of Medicine, Erciyes University, Kayseri, Turkey

Objective: The hook-shaped anterior pole portion of parahippocampalis gyrus is called uncus. Uncus is part of the limbic system and rhinencephalon. Hippocampus is a close neighbor. It is associated with epilepsies accompanied by odor hallucinations and uncal hernia caused by tumor, edema, bleeding. In this study, it was aimed to measure uncus volumes of healthy individuals with IBASPM (Individual Brain Atlas Using Statistical Parametric Mapping) software.

Methods: Magnetic resonance images with 3 dimensional (3D), T1-weighted, MPRAGE (Magnetization Prepared Rapid Gradient Echo) sequence and 1-mm slice thickness taken by the Department of Radiology, Akdeniz University Faculty of Medicine were used in the work after the necessary permissions were received. Between the ages of 45–75 twelve individuals (six males, six females) without central nervous system pathology were included in the study. Uncus volumes were measured automatically with IBASPM software.

Results: In males, the mean of right uncus volume was 3.58± 1.52 cm^3 and the mean of left uncus volume was 2.75±0.54 cm^3. In women, the mean of right uncus volume was 3.79±0.82 cm^3 and the mean of left uncus volume was 2.75±0.30 cm^3. The minimum maximum values of the uncus volumes of 12 individuals were 0.70–5.09 cm^3 on the right and 1.86–3.52 cm^3 on the left. In both men and women, the mean of right uncus volume was greater than mean of left uncus volume. When we look at the literature, it is observed that the the mean of uncus volume of women is bigger than that of men.

Conclusion: We think that the data obtained as a result of the measurements will be beneficial to the clinicians and will lead to new studies.

Keywords: IBASPM, morphometry, uncus volume, volume

P-137

What has changed in modern anatomy since Leonardo da Vinci?

Ortadeveci A, Ildız İ, Ay H

Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: One of the most important features of science is "change". One of the branches in which the change is clearly observed is anatomy. Events that changed social norms, such as historical events and cultural changes in society caused serious changes in the anatomy. Many artists and scientist appeared in anatomical history. One of the most known and important of this artist is Leonardo da Vinci. His sketches and drawings were beyond his time. Although there are mistakes in his works that are contradicting with the present day knowledge, that probably came because of the scientific facts and the influence of religion atthat time. The aim of this study was to point out these errors systematically.

Methods: The anatomical drawings of the work named "The Complete Paintings and Drawings" including all the drawings of Leonardo were examined and the organs or tissues in these drawings were compared morphologically with the shapes acknowledged today and the differences were determined. Apart from this, the articles dealing with the life of the painter and his anatomical drawings were also scanned and utilized.

Results: It was seen that Leonardo's most obvious mistakes in the skeletal system drawings was in the vertebrae. Especially in the first drawings, it can be easily observed that the spinous processes are absent on all vertebrae and that all vertebrae are pictured with the same shape. In the drawings of the circulatory system, it is seen that vena cava inferior did not pass through the heart and gives only a small branch to the right atrium. The representations of the internal organs show also some inconsistencies. Strange connections of the uterus, the strange size/shape of the liver, kidney, and spleen are standing out. One of the most obvious mistakes he made in the nervous system is depicting is 4th. ventricle behind the3th. It can be assumed that the channels portrayedon both sides of the medulla spinaliscould be the channels formed by the for.transversarium's, but the existence of a semen leading channel between the penis and spinal cord is contrary to our knowledge of today's anatomy.

Conclusion: Leonardo da Vinci is a genius even after the ages. But even he has made mistakes/changes. One of the most attractive aspects of science is the change itself. The scientist must be aware of this and always have to be open to change.

Keywords: Leonardo da Vinci, anatomy, drawing, error

P-138

Multiple variations in upper limb of a single cadaver

Çalıkuşu A[1], Üçerler H[2]

[1]Graduate Student; [2]Department of Anatomy, Faculty of Medicine, Ege University, Izmir, Turkey

Objective: Median nerve along with brachial artery and ulnar nerve runs distally in the medial bicipital groove which located in the medial region of biceps brachii. At the top of the forearm, it passes between the two heads of the pronator teres. It is stated that in the literature, median nerve does not pass between two heads of pronator teres at 16% of cases. Radial artery is originated from brachial artery in the direction of radial neck, the radial artery lies under the cover of the brachioradialis and in the lower part it becomes superficial under the cover of the skin and fascia. This is the normal configuration of radial artery.Besides of the single variation on the upper extremity, there is little information in the literature about

multiple variations artery and nerve in the single upper extremity. The aim of this case report is to show the rarity of the newly detected configuration of the arteries, and the abnormal course of the median nerve, to illuminate the clinicians for diagnosis and treatment.

Methods: Upper limb of the male adult cadaver that fixed with 10% formalin was dissected in Ege University, Faculty of Medicine, Department of Anatomy.

Results: During the detailed dissection, we encountered multiple artery and nerve variations in the left upper limb of the cadaver. The median nerve did not pass between the two heads of the pronator teres in the course of the cubital fossa in the upper left extremity. It was first observed that median nerve pierced the humeral head and ran to the forearm and then it was seen passing under the ulnar head, which is seen as a fibrous band. At the same time, the radial artery were seen 152.8 mm above the intercondylar line, originated from the brachial artery and torsionally of radial artery with brachial artery runs distally. It was observed that brachial artery was divided into ulnar artery and common interosseous artery branches 51.8 mm below the intercondylar line in cubital fossa.

Conclusion: The high origin of radial artery may cause possible avasculer conditions or traumas during catheterization and surgical operations. The course of median nerve in arm and forearm with the high origin of the radial artery is very important in terms of the success of operations to be performed in these regions.

Keywords: high origin of radial artery, median nerve, pronator teres, entrapment nerve

P-139

Cranial nerves on YouTube

Yücel K[1], Erkorkmaz Ü[2]

[1]Aksaray University, School of Medicine, Department of Anatomy, Aksaray, Turkey [2]Department of Biostatistics, School of Medicine, Sakarya University, Sakarya, Turkey

Objective: The most popular online video sharing platform, YouTube is used by both students and faculty members in health sciences education. We reviewed the general features of the videos on cranial nerve anatomy on YouTube ® and the criteria for the view counts. Our goal was to prepare a guide for making anatomy videos for YouTube.

Methods: On YouTube, each cranial nerve name is written in English in and the videos on the anatomy of the cranial nerves published until the end of 2017 were reviewed. In 1331 videos parameters such as days online, daily view counts, length were investigated. Additonally, we investigated methods such as lecturing by drawing, voice over the slides, etc.in anatomy videos.

Results: 470 videos (35%) included an anatomy lecture. 401 videos were on clinical anatomy and 197 on cranial nerve examination. The latter videos were more popular. The videos including all cranial nerves were more popular. An average anatomy video was published on 28 May 2015, with 11 daily views, and 8 minutes and 7 seconds of length. The facial nerve (n=83) and trigeminal nerve (n=81) had the most number of videos made. The optic nerve videos were the most popular. The most common method used was "voice over the slides". The most popular one was lecturing by drawing. Functional anatomy videos were popular. The least popular ones included clinical anatomy Qs-As. The videos longer than five minutes had three times daily view counts than videos shorter than five minutes.

Conclusion: If you lecture by drawing, longer than five minutes with subtitles, animations and a caption popularity of your video can increase.

Keywords: cranial nerve, YouTube, social media, anatomy education

P-140

Structural changes of the basal ganglia in patients with Huntington's disease: an MRI study

Elhaj AMA, Elfaki AA

Department of Anatomy, Faculty of Medicine, National University, Khartoum, Sudan

Objective: Huntington's disease (HD) is a rare autosomal dominant sever and usually fatal chronic neurodegenerative illness with prevalence of 5.96 to 13.7 per 100,000. The primary pathology is the precipitation of huntingtin protein in the neurons due to the presence of multiple CAG repeat in the N terminal of the HTT gene on the short arm of chromosome 4. Classically this is well known to primarily affect the caudate nucleus the largest of the basal ganglia. This manifests radiologically by shrinkage of the caudate nucleus with secondary dilatation of ventricular system. This however cannot explain the fact that the HD patients show a multitude of psychiatric and cognitive symptoms in addition to chorea. But it may be explained by the recent studies that show the basal nuclei are involved in limbic and emotional control in addition to their motor function. In this study we are reviewing recent MRI studies for evidence of structural basal ganglia changes in patients with HD.

Methods: Using PubMed search engine the MEDLINE database was searched using a predefined set of keywords. Several MRI based studies was found to investigate the structural changes of the basal ganlia in HD. The recent literature, from the past 15 years, was reviewed to summarize the findings.

Results: The review of the literature showed that the initial changes in HD happen in the caudate nucleus. Other parts of the striatum such as the putamen and globus pallidus are also affected, particularly following disease progression, with additional proof of thalamic changes. Such structural changes, in the striatum, for example, have been associated with specific

cognitive deficits including attention, working memory and executive functions. Interestingly studies reported that MRIs are able to detect these changes long before clinical manifestation of HD.

Conclusion: Most of the components of the basal ganglia are reduced in size in HD. This volume reduction is evident years before the onset of the disease. The magnitude of volume reduction is directly related to the severity of the disease. These changes may be used to predict the onset and prognosis of disease and to monitor the response to treatment.

Keywords: Huntington's disease, basal ganglia, volumetric changes, magnetic resonance imaging

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Investigation on the effects of daily business activities on postural balance of nurses

Kocabıyık G[1], Uluçam E[2]

[1]Pediatric Allergy Unit, Balıkesir University, Balıkesir, Turkey; [2]Department of Anatomy, Faculty of Medicine, Trakya University, Edirne, Turkey

Objective: The postural control mechanism plays an important role in ensuring that the human body performs its daily activities in a healthy manner. If an irregularity arises in this mechanism, the quality of life of the persons will also be inevitable. This is especially important for the working group. In our study, we investigated possible effects of daily activities of nurses on body posture balance using ultrasonic-based three-dimensional motion analyzers.

Methods: In our study, we used the balance analysis part of the Zebris © FDM System Type FDM 1.5 (Zebris Medical GmbH), a force platform for the measurement of ground reaction forces, and the WinFDM computer program, in a study of volunteers with 34 healthy nurses. Subjects were lengthened forward for 20 seconds to be parallel to the arms on the platform, their heels were adjacent, and the feet were positioned 30 degrees clear to the front and measurements were taken. The tests were carried out in three positions, with two eyes open, two eyes closed, and eyes open on the right foot. The data used to calculate the oscillation movements of the pressure center were evaluated.

Results: Reliable ellipse length before and after the seizure was reliable and the ellipse field values were significantly different ($p<0.05$). There was no significant difference in pre- and post-seizure values between the two eyes with open eyes and one eye with closed eyes.

Conclusion: When the mean values of pre- and post-seizure balance tests of nurses were examined, it was found that some of the post-seizure performances of the nurses decreased when we disabled the ocular system.

Keywords: pressure center, posture control, force platform, balance

P-142

A case of left inferior pulmonary vein with MDCT coronary angiography

Pirinç B[1], Fazlıoğulları ZE[1], Koplay M[2], Karabulut AK[1], Ünver Doğan N[1]

[1]Department of Anatomy, Faculty of Medicine, Selçuk University, Konya, Turkey; [2]Department of Radiology, Faculty of Medicine , Selçuk University, Konya, Turkey

Objective: Pulmonary veins carry oxygenated blood from the lungs to the left atrium of the heart. Usually there are four pulmonary veins as two from each lung and four independent pulmonary ostia, on either side (%70). Normally, left superior pulmonary vein and left inferior pulmonary vein pierce the pericardium by passing front of thoracic aorta, and open to posterosuperior part of left atrium.

Methods: 256-slice multidetector computed tomography coronary angiography images of a 1-month-old male patient who presented with complaints of dyspnea to the Selcuk University Medical Faculty were reviewed.

Results: It was found that left inferior pulmonary vein unite with right inferior pulmonary vein by passing to right side, and opening right of the left atrium with single commun ostia. A case who atrial septal defect and perimembranous ventricular septal defect was observed, also found in the arcus aorta hypoplasia.The right middle lobar and superior lobar veins usually join before they drain into the left atrium. As a result, two pulmonary veins – superior and inferior – usually emerge from each lung.

Conclusion: The frequency of variation in the right lung is higher than in the left lung, because of diffirent union forms of the right middle lobar vein. A common ostium variation of bilateral inferior pulmonary veins was quite rare, while the opening of the common trunk to the right of the left atrium was not found in the literature. The knowledge of this variation is not only for anatomists, but also surgeons and radiologists in the clinic, we think that the diagnosis and treatment will benefit.

Keywords: left inferior pulmonary vein, variation, anatomy, multislice computed tomography, coronary angiography

P-143

Endovascular treatment of celiac arterial compression depressed by median arcuate ligament

Karavelioğlu Y[1], Özdemir F[2], Ekinözü İ[1], Yetim M[1]

[1]Department of Cardiology, Faculty of Medicine, Hitit University, Çorum, Turkey; [2]Department of Anatomy, Faculty of Medicine, Hitit University, Çorum, Turkey

Objective: Median arcuate ligament syndrome or known as Dumbar syndrome, is characterized by stenosis of the celiac artery attached to the diaphragmatic crust.It was first described by Harjola in 1965. Although a significant number of affected individuals are asymptomatic, postprandial or exercise worsening abdominal pain, nausea, weight loss, diarrhea are the main symp-

toms.We aimed to describe the anatomical structure, diagnosis and treatment of the rare case of Dumbar syndrome.

Methods: In our case, a 43-year-old male patient was admitted to our clinic with complaints concentrated in the upper abdominal region and with food. Our patient had no nausea vomiting or weight loss story. Physical examination was within normal limits. The intermedius artery (IMA) opening 95% lesion is very close to the left main coronary artery (LMCA) and has a high risk of operation, Since our patient is currently less invasive and may be at risk of surgical operation, continuing dual antiplatelet therapy and non-revascularized critical coronary lesions may pose a risk for surgical operation, so this patient's council decision and endovascular stent implantation procedure is planned for the patient's preference.The procedure was performed with right brachial arterial 7 F sheet, considering that the procedure may be better catheterization.Carbofilm coated balloon,expandable renal stent (Alvimedica) was implanted at 1–2 ATMs in the aorta, with a 7.0×17 mm in a 150 cm shaft length without the need for predation of the lesion.

Results: The lesion was fully opened.The procedure was terminated without complications.

Conclusion: At the end of the procedure brachial sheet was pulled. Improvement of doppler flow was observed before the operation of our patient. Complaints of pain in the upper abdominal region have completely disappeared.The patient was followed without any complications.

Keywords: median arcuate ligament syndrome (MALS), celiac artery, endovascular treatment

P-144

Comparison of the effects of nitric oxide precursor L-arginine and nNOS inhibitor 7-nitroindazole on kainic acid-induced seizures using by histopathological methods in rats

Gökçe FM[1], Uzunok B[2], Tümkaya L[3], Altuner D[4], Yıldız L[1]

[1]Department of Physiology, Faculty of Medicine, Recep Tayyip Erdoğan University, Rize, Turkey; [2]Department of Physiology, Faculty of Medicine, Uşak University, Uşak, Turkey; [3]Department of Histology and Embryology, Faculty of Medicine, Recep Tayyip Erdoğan University, Rize, Turkey; [4]Department of Pharmacology, Faculty of Medicine, Erzincan Binali Yıldırım University, Erzincan, Turkey

Objective: The effects of NO on kainic acid model epilepsy were investigated in this study. Our aim was to explain the action mechanism of NO and analyze its effects on kindling model epilepsy induced by kainic acid by hıstopathologıcal methods.

Methods: Male albino Wistar rats with 250–300 grams weight were used for this study. Kainic acid (10 mg/kg) was used to generate epilepsy in the animals. Animals were divided into two subgroups. Group 1 were divided into three prophylaxis groups (n=7) and Group 2 were divided into three treatment groups (n=7) as Control, L-arginine (L-ARG) and 7- nitroindazole (7-NI). 2 microliters saline was applied in prophylaxis-control groups before kainic acid and in treatment-control groups after kainic acid.

Results: were evaluated by ANOVA and Post Hoc test. Brain tissues of animals were removed in a convenient manner and immunohistochemical kits and stains were used to determine hippocampal cell damage states.

Conclusions: It was found that as in some other epilepsy models, NO reduces epileptic seizures by acting anticonvulsant in kainic acid model epilepsy.

Keywords: nitric oxide, kainic acid, epilepsy, electrocorticography (ECoG), GABA, glutamate, anticonvulsant effect

P-145

Classification and angular analysis of the joint surfaces of calcaneus

Ülkir M, Sargon MF

Department of Anatomy, Faculty of Medicine, Hacettepe University, Ankara, Turkey

Objective: The calcaneus is important in posture and kinesiology. Its joint surfaces and angular analyses of them have great importance in performing movements.The classification of joint surfaces of calcaneus and angular analyses of these surfaces are aimed in order to make a contribution to kinesiology.

Methods: The study was performed in 68 right and 45 left (totally 113) dry calcaneus. Firstly; grouping of joint surfaces was done. Then; angulations in between the transverse plane and most inferior point of anterior talar articular surface, most inferior point of middle talar articular surface, most inferior point of posterior talar articular surface and most inferior point of articular surface with cuboid bone were calculated.

Results: In 34% of right and 40% of left calcaneus; anterior and middle talar articular surfaces were found separate. In 22% of right and left calcaneus; anterior and middle talar articular surfaces were semi separate and semi joined. In 44% of right and 38% of left calcaneus; anterior and middle talar articular surfaces were joined. In angular analyses; angulations in between most inferior point of anterior talar articular surface and transverse plane were 5–35° (mean: 17.7°) on right and 10–25° (mean: 13.2°) on left calcenus. Angle in between most inferior point of middle talar articular surface and transverse plane was 30–70° (mean: 51.47°) on right and 40–65° (mean: 51.1°) on left bones. Angle in between most inferior point of posterior talar articular surface and transverse plane was 45–70° (mean: 57.2°) on right and 50–70° (mean: 59°) on left bones. Angle in between most inferior point of articular surface with cuboid and transverse plane was 0–10° (mean: 1.69°) on right and 0–5° (mean: 1.44°) on left calcaneus.

Conclusions: These morphometric data obtained by classification and angular analyses of joint surfaces will have an importance in kinesiology.

Keywords: calcaneus, articular surfaces of calcaneus, morphometry, anatomy, kinesiology

P-146

Morphologic and morphometric analysis of suprascapular notch

Çetin M, Süzen, LB

Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: The suprascapular notch is on the superior margin of the scapula. The notch is limited by the superior transvers ligament (STL) superiorly which attaches laterally to the root of the coracoid process and medially to the limit of the notch. Suprascapular nerve passes under the ligament. Definition of different shapes and diameters of the notch may be beneficial for the surgical interventions to the region. For this reason, in the present study, suprascapular notch were evaluated morphometrically and morphologically.

Methods: In this study, 50 scapulae (25 right and 25 left) were obtained from the bone collection of Akdeniz University, School of Medicine, Anatomy Laboratory. Bones with deformity were excluded from the study. The transverse and vertical diameters of the suprascapular notch were measured by using a caliper.

Results: The mean transverse diameter of the right and left suprascapular notch was measured as 1.00±0.31 cm and 1.09±0.42 cm respectively. The mean of vertical diameter of right and left suprascapular notch was measured as 0.65±0.22 cm and 0.71±0.22 cm respectively. We identified five different types of suprascapular notch. These are deep U shaped, shallow U shaped, V shaped, J shaped and foraminated by ossification of STL.

Conclusion: We consider that our results can help surgeons for the surgery of this region.

Keywords: suprascapular notch, suprascapular nerve, scapula

P-147

Determination of collateral circulation variation in a patient with aortic coarctation by contrast MRI and post-op evaluation

Arpacı MF[1], Döndü K[2], Şenol D[1], Özbağ D[1]

[1]Department of Anatomy, Faculty of Medicine, İnönü University, Malatya, Turkey; [2]Department of Radiology, Private Sevgi Medical Center, Malatya, Turkey

Coarctation of the aorta (CoA) is a congenital defect characterized by weak pulse and low blood pressure in the leg, which is responsible for 5–8% of all congenital heart defects and is associated with increased risk of aortic rupture and death. Stenosis is usually observed near the ligamentum arteriosum in the pars thoracica region of the aorta descendens With contrast MRI, the vessels are polished and visualized with the given contrast material. This imaging is in the form of arterial and venosus imaging. Aortic angiography or aortography is the best method to determine the location of the coarctation in the angiography laboratory. In this case, a 24-year-old woman with a high blood pressure complaint in a private hospital did not have only aortic coarctation, she also has collateral arteries which were observed on both sides.Postoperative imaging shows that the blood flow is stopped in the collateral circulation when the function of aorta descendens begins. Normally, these types of collateral arteries are not seen in aortic coarctation. We observed that collateral circulation interrupted after surgery. therefore, this case is anatomically important. In conclusion, aortic descendens can be compensated with collateral circulation by detected in patients with aortic coarctation. This is an important factor to consider in pre- and post-surgery evaluations.

Keywords: aorta coarctation, contrast MRI, interrupted aorta

P-148

Incomplete Willis polygon; the absence of anterior and posterior communicating arteries

Babacan S[1], Işıklar S[2], Kafa İM[1], Yazıcı Z[3]

[1]Department of Anatomy, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey; [2]Medical Imaging Techniques Program, Vocational School of Health Services, Bursa Uludağ University, Bursa, Turkey; [3]Department of Radiology, Faculty of Medicine, Bursa Uludağ University, Bursa, Turkey

Objective: The circulus arteriosus cerebri was firstly identified by Thomas Willis in 1964 and his name was given it as "Willis Polygon". The circle of Willis is composed of anterior cerebral arteries (ACA), anterior communicating artery (AComA) which links the ACAs, posterior cerebral arteries (PCA), posterior communicating arteries (PComA) that links the PCA to internal carotid artery (ICA) bilaterally. The presence of anterior and posterior communicating arteries is very important components of Willis polygon due to that they provide the collateral blood flow. Considering the variations of Willis polygon is important for the neurovascular and intracranial surgical procedures.

Methods: A seven-aged pediatric female patient underwent an operation due to grade I pilocytic astrocytoma at 3rd ventricle level. The patient was directed to Bursa Uludağ University Faculty of Medicine Department of Radiology Department MR Unit for control cranial MR imaging.

Results: Arterial cranial MR angiography was performed besides the routine imaging because of the examination of bleeding at the prepontin level in the anterior aspect of the case. The anterior communicating artery and the bilateral posterior communicating arteries were not observed radiologically (incompleted Willis arc).

Conclusion: The variations of Willis polygon can be seen on the anterior and posterior parts frequently. Kapoor et al. (2008) examined 1000 brain specimens obtained autopsy subjects. They put forward that the rate of absence of AComA and PComAs as 1.8%; 1%, respectively. Klimek-Piotrowska et al. (2013) studied on computed tomography angiography belonging of 250 patients and they found the lack of all communicating arteries incidence as 7.2%. The findings of the studies about Willis polygon reveals that it has many types of variations. We believe that this findings from the case will contribute the literature related to the Willis Polygon.

Keywords: incompleted Willis polygon, variation, anatomy

P-149

Effect of syringic acid administration after chronic deltamethrin exposure on reactive oxygen and nitrogen species

Öğüt E[1], Yıldırım FB[1], Aslan AM[2]

[1]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [2]Department of Biochemistry, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: It has been reported that administration of deltamethrin (DTM) in rats results in toxic effects with reactive oxygen / nitrogen species (ROS / RNS). Toxicity after DTM exposure causes changes in the hippocampal CA1 and CA3 subfields, leading to neurodegenerative diseases. The aim of this study is to investigate the protective role of syringic acid (SA) against chronic DTM toxicity in hippocampal CA1/CA3 subfields via ROS/RNS analysis.

Methods: 250–270 gr 64 adult Rattus norvegicus Wistar albino male rats were used. Rats were divided into 4 groups of 16 in each group (n=64). SA (25 mg / kg), DTM (1.28–1.35 mg / kg), corn oil (0.5 ml) were given by oral gavage for 2 months every day. Group I; Control; corn oil, Group II; corn oil + DTM, Group III; corn oil + DTM + SA, Group IV; corn oil + SA. At the end of 2 months the rats were sacrified and hippocampal tissues were extracted. The total free radical activity assay on the hippocampus was measured using by OxiSelect ™ In Vitro ROS / RNS Assay Kit (STA-347, OxiSelect ™, Cell Bio, Inc., San Diego, USA).

Results: The ROS / RNS mean values of the control group were 169.15±19.31 DCF (nM) / mg.ml -1 protein, Deltamethrin (DTM)=288.63±19.13 DCF (nM) / mg.ml- 1 protein, Syringic Acid (SA)=117.97±4.02 DCF (nM) / mg.ml -1 protein, DTM + SA=212.23±6.07 DCF (nM) / mg.ml -1 as protein. DTM increased tissue oxidant level compared to control and syringic acid groups ($p<0.05$). Syringic acid administration and DTM + SA decreased the tissue oxidant values compared to DTM group. And the oxidant status was significantly decreased in SA group than DTM + SA group ($p<0.05$).

Conclusions: In this study oxidative damage (ROS / RNS) was significantly higher in the DTM group than the other groups. It has been found that SA has a neuroprotective effect against ROS-induced oxidative damage. These results demonstrate the potential protective role of SA and the antioxidant effect. For this reason, we think that the study can be used as an alternative SA therapy with biochemical ROS / RNS results.

Keywords: chronic deltamethrin, syringic acid, syringic acid therapy, reactive oxygen species, reactive nitrogen species

P-150

Comparison of the morphometric properties of the femur collection in the anatomy laboratory of Süleyman Demirel University

Dursun A, Canbaloğlu AE, Şanlı OC, Kastamoni Yaşar Y

Department of Anatomy, Faculty of Medicine, Süleyman Demirel University, Isparta, Turkey

Objective: The femur neck-shaft angle (NSA) is a measure of the medial tilt of the proximal femur and varies widely during growth, geographical area and transient periods. The femur neck-shaft angle (NSA) varies greatly between modern humans and previous hominids, even in small populations. For modern humans, adult values are usually between 120 and 140 degrees, but <120 degrees and >140 degrees are not uncommon. Femoral anteversion (FNA) is the inclination of the femur neck axis on a plane perpendicular to the axis of the shaft with reference to the knee axis. Femoral anteversion is a physiological condition, which varies depending on the grade and age. Femoral anteversion changes can be detected initially in 7-week gestation, childhood and early adolescence. Individual variations continue until adulthood. The average adult femoral anteversion angle has been shown to vary between 7 and 16 in the investigations. It is aimed to compare the morphometric properties of SDU Anatomy femur collection according to both sex and sides as poster presentation.

Methods: The femurs in the SDU anatomy lab were grouped according to their sex and right and left origin. Each femur was photographed and measurements of anteversion (FNA) and inclination (NSA) were performed in the ImageJ program. With the SPSS 20 program, statistical data between the genders and the sides were determined and compared.

Results and Conclusion: According to our findings, there was no significant difference in the comparison of FNA-NSA measures between both sexes and between the sides.

Keywords: femur, anteversion, neck-shaft angle

P-151

Effects of ketamine on dendritic morphology of the pyramidal neurons in adult rats exposed to stress

Çorumlu EP[1], Aydın OÖ[1], Ulupınar E[1,2]

[1]Department of Inter Disciplinary Neuroscience, Institute of Health Sciences, Eskişehir Osmangazi University, Eskişehir, Turkey; [2]Department of Anatomy, Faculty of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

Objective: In recent years, the subanesthetic doses of NMDA receptor antagonist ketamine has been used as an antidepressant, particularly in treatment-resistance patients. In this study, we aim to investigate the effects of ketamine on behavioral parameters anddendritic lengthof pyramidal neurons in the hippocampus by using chronic unpredictable stress model.

Methods: The stress paradigm was applied once a day for twenty-eight days. In total of 24 adult Spraque-Dawley male rats, divided into four groups: stressed group receiving serum physiologic (S+SF); or 10 mg/kg intraperitoneal ketamine (S+Ketamine); control group receiving SF injection (K+SF), or ketamine treatment (K+Ketamine). Behavioral changes were evaluated by open field, sugar preference, forced swim and modified grip tests. Following intracardiac perfusion, dissected specimens were sectioned by using vibratome at a thickness of 200 µm, then stained with Golgi-Cox method. Dendritic length and branching pattern changes in the hippocampal pyramidal neurons were examined by Sholl analysis.

Results: In animals exposed to stress, adrenal to body weight ratio was significantly ($p<0.05$) higher than the value of kontrol+SF group. However, no significant alteration was observed in the result of applied behavioral tests among the groups. Dendritic lengthsmeasurements in the proximal or distal zones, determined by their distance to the cell body, showed that dendritic length of K+Ketamine group was significantly higher in the proximal zone, than those of K+SF ($p<0.05$) and S+SF groups ($p<0.01$). In the distal zone, dendritic length of the K+Ketamine group was significantly higher than those of S+Ketamine ($p<0.05$) and S+SF groups ($p<0.05$). It was also observed that neurons with dendritic lengths extending to the most distal zone, were belong to the K+Ketamine group.

Conclusions: Even though the effects of applied stress paradigm was not reflected on the behavior of experimental animals, it has been shown that stress might lead to morphological and physiological changes, like depression. Administration of ketamine at subanesthetic doses has therapeutic effects on the dendritic lengths and branching patterns of the hippocampal pyramidal neurons. In future studies, the effect of ketamine on the synaptic plasticity capacity of hippocampal neurons needs to be elucidatedby detailedmolecular studies.

Keywords: ketamine, hippocampus, Golgi cox staining, chronic unpredictable stress, modified grip test

P-152

The use of Instagramlive and Instagram videos in anatomy education

Yücel K

Department of Anatomy, School of Medicine, Aksaray University, Aksaray, Turkey

Objective: One of the significant advantages of using social media in healthcare sciences education is getting quantitative measurements as feedback. Therefore, one can observe whether the applications get attraction of the students or not and make the neccessary arrangements. The two video groups supporting the anatomy education were compared regarding the interest of the students. The first one included Instagramlive ® and demonstration videos. The second group included the lecture and lab videos already prepared by the lecturer.

Methods: In 2016 and 2017 in two universities (Okan Üniversity and Istanbul Aydın University) and for four classes (Medical School and Physiotherapy and Rehabiliation first year, Dentistry first and second year) five Instagram live videos were performed. Live broadcasts were announced at the Whatsapp lecture group; saved at the end; and uploaded to the Dropbox. The links were shared at the encrypted lecture blogs and E-labs created via Wordpress. Four videos had corresponding lecture or lab videos. Eight lab videos had corresponding 52 Instagram lab videos. All videos included subtitles and were edited via Windows Movie Maker.

Results and Conclusion: Four Instagram live videos got 50 clicks, corresponding lecture or lab videos got 646 clicks. The live video recordings on superficial back muscles got 78 and 104 clicks. Instagram lab videos had a length of 8 minutes and 44 seconds with 2008 clicks. 49 minutes and 8 second long eight e-lab videos had a total of 1575 clicks. The two did not differ significantly ($p=0.3$). An Instagram account for each class can be created and perform Qs-As with students on Instagramlive. "Aska a question" feature can also be used. Instagram lab videos can be shared if you have them handy.

Keywords: Instagramlive, video, social media, anatomy education

P-153

Teaching methods of human anatomy lesson in Ahmet Yesevi University

Begaliyev B, İşigov İ

Faculty of Medicine, Hoca Ahmet Yesevi International Turkish-Kazakh University, Turkistan, Kazakhistan

This article describes the current methodology of teaching anatomy to students learning process, development of forms of remedial students and versatile preparation of teachers at the Department of Human Morphology and Physiology, Faculty of Medicine, IKTU.

P-154

The correlation between calcaneal valgus angle and foot type in healthy people and its effect on lower limb alignment

Nteli Chatzioglou G[1], Gövsa F[1], Hepgüler S[2], Pınar Y[1], Bedre O[1]

[1]Department of Anatomy, Digital Imaging and Modelling Laboratory, Faculty of Medicine, Ege University, Izmir, Turkey; [2]Department of Physical Therapy, Faculty of Medicine, Ege University, Izmir, Turkey

Objective: Foot type is a clinical concept that aims to simplify the anatomical complexities of the lower limb. Variations in foot posture are associated with anatomical alignment disorders. A simulated genu varum walking pattern increase the subtalar pronation moment, whereas genu valgum walking pattern raises the subtalar supination. Study aims to investigate the direct relationship of frontal plane knee alignment and foot posture.

Methods: Study included with 200 healthy adults between 18 and 22 years of age that had no symptoms of pain. İdeal measurement of ankle alignment is the mechanical axis, calcaneal valgus and Q angles. Measurements were taken using plantar pressure measuring device, R-scan Foot scan system. Photogrammetric measurements were conducted with Image J program.

Results: Architecture of the foot played a major role in directing the magnitude of load from body weight through different pedal structures. There was a statistical significance between calcaneal valgus measurements, foot axis, subtalar joint angle

and flexibility. Measures of foot structure including malleolar valgus and arch height index were different in types. Planus feet exhibited significantly different center of pressure excursion indices compared to pronated and supinated feet. Gait pattern parameters were invariant.

Conclusion: Alterations of foot morphology in people with large calcaneal valgus angle measurement are associated with knee pain and cartilage damage. Measures of foot structure and function differed across foot types. Foot pain is related to structural conditions and lower limb alignment disorders.

Keywords: foot type, lower limb alignment, calcaneal valgus angle, photogrammetry

P-155

Auricle: a neurovascular organ

Bozer C

Department of Anatomy, Faculty of Medicine, Trakya University, Edirne, Turkey

Objective: The auricle is located between the temporımandibular joint and processus mastoideus. Age related changes are seen in its structure and dimensions. Embryological development of auricle begins at 6th week. It begins developing in the neck region and then moves cranially with the development of mandibula. It has a basic structure of elastic cartilage covered with perichondrium. Ear lobe is made of soft connective tissue which contains fat. The auricle is defined as a sound collector in classic anatomy education. However it deserves more than this with its unique anatomical structure and properties. auricle is used in diagnosis and treatment of diseases in various ways by the therapy methods termed auriculotherapy or auricular acupuncture. This study aims to introduce these properties of the auricle

Methods: Information about the anatomy of auricle and its neurovascular structure from the relevant literature is reviewed.

Results: With its unique anatomical properties, the auricle is used in diagnosis and treatment of diseases without having side effects.

Conclusions: It should be defined as an independent organ because of its unique anatomical and embriyological properties.

Keywords: auricle, anatomy, acupuncture, auriculotherapy

P-156

Morphology and morphometric measurements of the interlaminar distance of the lumbel region

Gediz T[1], Önder M[2], Çetin M[2], Sindel M[2], Yolcular OB[3], Oğuz N[2]

[1]Department of Brain and Nerve Surgery, Antalya Training and Research Hospital, Antalya, Turkey; [2]Department of Anatomy, Faculty of Medicine, Akdeniz University, Antalya, Turkey; [3]Department of Biostatistics and Medical Informatics, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Objective: The interlaminar distance is generally a gap in the upper part divided by the ligamentum interspinosum, which is covered by ligamentum flavum, the lower limit's the upper lamina being the upper limit of the lower lamina and the laterals being the facet joints on the anatomical region of the anesthesiology and algology branches. The aim of the study is to demonstrate the anatomical boundaries of the interlaminar space in the lumbar region and to investigate the morphological differences according to the vertebral levels.

Methods: In our study, 14 formalin cadaver paravertebral soft tissues were removed in the Anatolian Laboratory of Akdeniz University and then lumbal intervertebral gaps were established and the distances of the largest vertical diameter between the two laminae and the planar median of the largest transverse transverse diameter were measured using Microscribe-G2X. Morphological structures of all ranges are also shown in the drawings.

Results: Measurements of distance to the lower border of the interlaminar space in the 14 formalin cadaver lumbar region were statistically analyzed.

Conclusion: The data obtained as a result of the measurements are: We believe that a detailed anatomic examination of the lumbar interlaminar intervals will be useful in avoiding difficulties and avoiding complications in surgical procedures performed in this region.

Keywords: interlaminar distance, lamina, facet, flavum

P-157

Suprascapular variation: case report

Kurbetli N, Akyer ŞP, Özdemir MB, Aygün D, Çelebi SE, Yılmaz EB, Çotur A

Department of Anatomy, Faculty of Medicine, Pamukkale University, Denizli, Turkey

Objective: Scapula is a bone with three corners and three sides settled in the posterolateral of thorax. The suprascapular notch in the immediate medial of the base of coracoid process can be seen in different shapes and depths. Suprascapular notch is surrounded by the superior transvers scapular ligament, a short and strong ligament. With this structure suprascapular notch form an osteofibrous passage through which suprascapular nerve passes.We found two of the scapula bones in Pamukkale University and Okan University, which were transformed into foramen of suprascapular notch. The purpose of this study is to observe the variations of the suprascapular notch into the foramen by comparing them with normal structures.

Methods: Cases was found among all scapula bones found at Pamukkale University and Okan University.

Results: The case was evaluated in terms of size and frequency.

Conclusion: A narrow foramen that may form may exert a complete pressure on the peripheral part of the suprascapular nerve (supraspinatus and infraspinatus paresis).

Keywords: scapula, suprascapular notch

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