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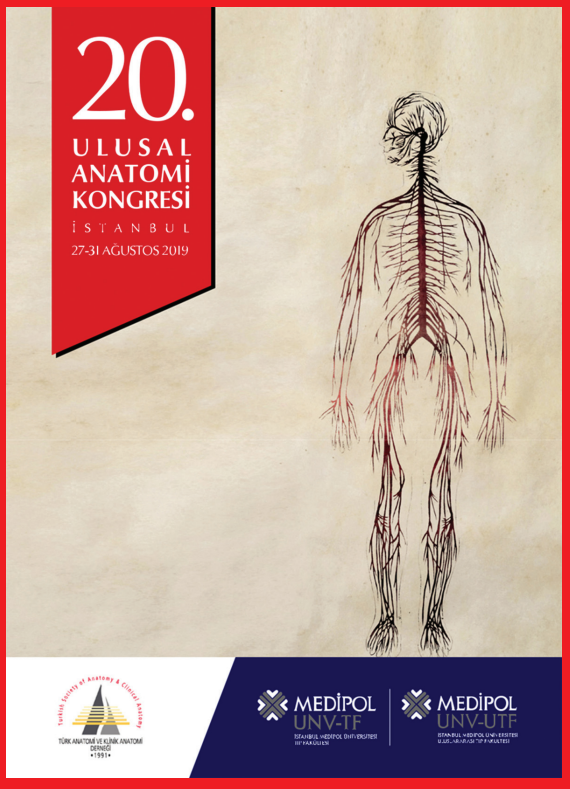

Special Issue includes abstracts for the 20th National Anatomy Congress, 27–31 August 2019, Istanbul, Turkey

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An International Journal of Experimental and Clinical Anatomy

Official Publication of the Turkish Society of Anatomy and Clinical Anatomy

Aim and Scope

Anatomy, an international journal of experimental and clinical anatomy, is a peer-reviewed journal published three times a year with an objective to publish manuscripts with high scientific quality from all areas of anatomy. The journal offers a forum for anatomical investigations involving gross, histologic, developmental, neurological, radiological and clinical anatomy, and anatomy teaching methods and techniques. The journal is open to original papers covering a link between gross anatomy and areas related with clinical anatomy such as experimental and functional anatomy, neuroanatomy, comparative anatomy, modern imaging techniques, molecular biology, cell biology, embryology, morphological studies of veterinary discipline, and teaching anatomy. The journal is currently indexing and abstracting in TUBITAK ULAKBIM Turkish Medical Index, Proquest, EBSCO Host, Index Copernicus and Google Scholar.

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- ***Case Reports*** include new, noteworthy or unusual cases which could be of help for basic notions and clinical practice.
- ***Technical Note*** articles cover technical innovations and developments with a specific technique or procedure or a modification of an existing technique. They should be sectioned like an original research article but not exceed 2000 words.
- ***Viewpoint*** articles give opinions on controversial topics or future projections, some of these are invited.
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- ***Terminology Zone*** category is a platform for the articles which discuss some terminological controversies or opinions.

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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.

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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)
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- Keywords (at least three)
- References (relevant to *Index Medicus)*
- Illustrations and tables (numbering; legends)
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20th National Anatomy Congress

27–31 August 2019, Istanbul, Turkey

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Welcome Address of the Congress President

Anatomy 2019;13(Suppl 2):Sv

Dear Valued Colleagues,

The 20th National Anatomy Congress will be held on Istanbul Medipol University's South campus from 27 to 31 August 2019. With this congress organized in association with the Turkish Society of Anatomy and Clinical Anatomy (TSACA), we would be pleased to see and entertain you at Istanbul Medipol University, one of the rising values of Turkey. We are working heart and soul to ensure that our congress will not only sustain the scientific level that has been achieved in previous years, but also be satisfactory in social aspects.

This congress is intended to provide 9 courses in analysis of MR images by MRiCloud system; anatomical illustration; facial nerve dissection; tissue clearing; hip and knee prosthetic applications; foot and ankle dissection; medical terminology; and pelvis dissection. Courses will be held on August 27, 2019 from 9:30 a.m. to 2.30 p.m. before the opening program and our 3.5-day intensive congress program will start on Wednesday, August 28. Distinct from earlier congresses, our congress is intended to be carried out as a “clinically oriented anatomy congress” so that it allows further interaction with clinical branches and clinicians where our efforts are planned accordingly. To that end, a panel titled “Why Do We Need Anatomy and Basic Medical Sciences?” will be held on August 28 with the contribution of academic clinicians who support our congress. Subsequently, one-hour “Neurosurgery panel” will be held on August 29, followed by one-hour “Orthopedics panel" on August 30 and one-hour “Dentistry and Radiology joint panel” on August 31. During 35-minute “clinically oriented anatomy” sessions which will be held after lunch and right before oral presentations on 28th, 29th and 30th of August, a series of presentations will be made by academicians from physiology, anatomy, neurology, plastic surgery, neurosurgery, orthopedics, general surgery, radiology and otorhinolaryngology.

As our key speakers, Prof. Richard T. Ambron will speak about the cellular, molecular and anatomical bases of chronic pain, while Prof. Abdulkadir Ömer will talk about the pancreas and Prof. Juan R. Garcia will discuss anaplasty and 3D medical printing, which we believe to be highly useful and purposeful.

As in previous years, the awards for the best oral and poster presentations will also be handed out this year.

As indicated in our introductory video of the congress that we shared with you earlier, the student dormitory at Istanbul Medipol University allows our young colleagues and graduate students who have the position of a medical specialist, lecturer or research assistant to accommodate and attend the congress free of charge. Additionally, we would like to express our contentment regarding our capability to offer our young colleagues who have devoted themselves to anatomy such an opportunity to enhance their participation in the congress through encouragement.

To accommodate our young colleagues who do not prefer to stay at the dormitory and our valued academicians who are a member of our professional community, we have concluded an agreement with two hotels located very close to our university in Kavacik. Any of our guests who choose to stay at hotel will enjoy discounted accommodation at these hotels given on the webpage. More detailed information can be found in the 'accommodation' menu of our webpage.

On the other hand, it is planned to provide transportation services for the guests who will use airports, coach stations and high-speed train stations throughout the congress. More detailed information can be found in the 'transportation' menu of our webpage.

Considering the traffic in Istanbul, scientific activities are scheduled to start at 9.30 a.m. The scientific program is projected to be completed at 4.40 p.m. on August 28 and 29, 4.50 p.m. on August 30 and 1.00 p.m. on August 31.

As included in the social program, an opening cocktail reception will be held at Beykoz Sabanci Teacher's Lodge on August 27, followed by a Bosporus tour on August 28 and a gala dinner on August 29 at Hidiv Kasrı in Beykoz. Following the completion of the scientific program on August 30, our guests will be given free time so that they can enjoy Istanbul freely.

The management of Istanbul Medipol University supports such scientific and social activities wholeheartedly and receives us with open arms. We wish to see all of you in the congress to act in response to this hospitality.

Kind regards,

President of the Congress
Prof. B. Ufuk Şakul

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20th National Anatomy Congress
27–31 August 2019, Istanbul, Turkey
20. Ulusal Anatomi Kongresi
27–31 Ağustos 2019, İstanbul, Türkiye

Program

27 Ağustos 2019, Salı / Tuesday, 27 August 2019

09.00–13.00	**Kurslar / Courses**
09.00–11.00	Kurs / Course 3: Transnasal Endoscopic Surgery (Dissection course) Prof. Dr. Savaş Ceylan - Doç. Dr. Hayri Kertmen
	Kurs / Course 4: Infratemporal course of the facial nerve (Dissection course) Prof. Dr. Yıldırım Ahmet Bayazıt - Dr. Öğr. Üyesi Gökhan Altın
	Kurs / Course 6: Hip and knee prosthetic applications (Dissection course) Prof. Dr. Ahmet Murat Bülbül - Op. Dr. Yasin Güler
09.00–12.00	Kurs / Course 1: Data analysis in different modalities of MR images by MRICloud system Prof. Dr. Niyazi Acer
	Kurs / Course 2: Anatomical Illustration Prof. Dr. Ahmet Sınav
	Kurs / Course 5: Tissue clearing (Applied course) Dr. Öğr. Üyesi Taha Keleştemur - Dr. Mehmet Şerif Aydın
	Kurs / Course 8: Applied medical terminology course Prof. Dr. Mehmet Yıldırım
11.00–13.00	Kurs / Course 7: Orthopedic approaches to feet and ankles (Dissection course) Doç. Dr. Semih Ayanoğlu - Op. Dr. Fatih Arslanoğlu
	Kurs / Course 9: Pelvic compartments and their clinical importance (Dissection course) Prof. Dr. Ayhan Kuzu - Prof. Dr. Halil İbrahim Açar

İbn-i Sînâ Salonu (Main Hall)

15.00–17.00	İstiklal marşı ve saygı duruşu
	Üniversitenin kısa tanıtımı
	Açılış konuşması: Prof. Dr. B. Ufuk Şakul / Kongre Başkanı
	Prof. Dr. Esat Adıgüzel'in konuşması / Kongre Başkanı / Türk Anatomi ve Klinik Anatomi Derneği Başkanı
	Prof. Dr. Naci Karacaoğlan'ın konuşması / İstanbul Medipol Üniversitesi Tıp Fakültesi Dekanı
	Prof. Dr. Sabahattin Aydın'ın konuşması / İstanbul Medipol Üniversitesi Rektörü
	Prof. Dr. Alaittin Elhan'ın konuşması / Onursal Başkanlar Adına
	İslam aleminde insan anatomisinin yeri, bazı motifler Prof. Dr. Dr. Gürsel Ortuğ - Bahçeşehir Üniversitesi Tıp Fakültesi, Anatomi Anabilim Dalı Başkanı
	Anadolu'nun bağrından doğan güneş Prof. Dr. Semih Baskan - Okan Üniversitesi Tıp Fakültesi Dekanı
	Bir demet Türk müziği dinletisi Prof. Dr. Hanefi Özbek, Doç. Dr. Volkan Gidiş ve Öğr. Gör. Şennur Dinleyen
18.30	**Açılış Kokteyli / Opening Coctail (Sabancı Öğretmenevi)**

28 Ağustos 2019, Çarşamba / Wednesday, 28 August 2019

İbn-i Sînâ Salonu (Main Hall)

09.30–10.30	Facial prosthetics in an age of advanced 3D technologies Prof. Dr. Juan R. Garcia
10.30–10.45	**Çay-Kahve Arası / Tea & Coffee Break**
10.45–11.45	**Panel** / Why do we need anatomy and basic medical sciences? Prof. Dr. Sabahattin Aydın-Moderatör Prof. Dr. Naci Karacaoğlan Prof. Dr. Abdulkadir Ömer Prof. Dr. Sina Uçkan Prof. Dr. Recep Öztürk Prof. Dr. Nejat Akalan Prof. Dr. Mustafa Öncel Prof. Dr. Yıldırım Ahmet Bayazıt Prof. Dr. Ahmet Murat Bülbül Prof. Dr. Cengiz Erol
11.45–12.00	**Çay-Kahve Arası / Tea & Coffee Break**
12.00–13.15	**Oral Presentations (O-001–O-005)** **Chairs:** Prof. Dr. Ümit Süleyman Şehirli & Doç. Dr. Evren Köse **O-001:** Effect of vitamin D on axonal regeneration after the epineural devascularization of sciatic nerve Hüseyin Erdem, Levent Sarıkcıoğlu, Neslihan Boyan, Özkan Oğuz **O-002:** The role of N,N-dimethyltryptamine on neurite outgrowth in primary hippocampal neurons Muzaffer Beyza Ozansoy **O-003:** Investigation of hippocampus volumes in diabetic patients Mehmet Ali Güner, Elif Peker, Sevim Güllü, Memet İlhan Erden, İbrahim Tekdemir **O-004:** Examination of anatomical variations of vascular drainage of sinus petrosus inferior Özhan Özgür, Kürşat Erman, Serra Öztürk, Merve Sarıkaya Doğan, Hande Salım, Muzaffer Sindel, Timur Sindel **O-005:** Investigation of relation between basal ganglion volumes and reaction times in elite athletes Hamit Selim Karabekir, Funda Aksu, Nermin Nüket Göçmen Karabekir, Erkan Günay, Canan Yazıcı Güvercin, Handan Güleryüz
13.15–14.15	**Yemek Arası / Lunch**
14.15–14.50	**Panel** / New techniques in neuronal imaging Prof. Dr. Lütfü Hanoğlu - Moderatör Prof. Dr. Gülgün Şengül Prof. Dr. Emel Ulupınar
14.50–15.50	Arterial circulation and aneurysm of the brain Prof. Dr. Hasan Çağlar Uğur
15.50–16.00	**Çay-Kahve Arası / Tea & Coffee Break**
16.00–16.50	**Oral Presentations (O-006–O-008)** **Chairs:** Prof. Dr. Hasan Çağlar Uğur & Prof. Dr. Ali Zeybek **O-006:** The morphometric analysis of surface structures of sacral bone as a landmark and its importance in clinical aspect Derya Demirel, Mennan Ece Pirzirenli, Zeynep Akça Andı, Mehmet Emirzeoğlu **O-007:** Morphometric examination of calcaneus in Turkish population Burcu Erçakmak Güneş, Hasan Barış Ilgaz, Mehmet Ülkir, Ceren Günenç Beşer **O-008:** The relationship between 2/4 finger ratio of medical students and their success in anatomy practice education Emrah Özcan, Ramazan Çetin
18.30	**Boğaz Turu / Bosporus Tour**

İbnü'n Nefîs Salonu (Amfi 201)

12.00–13.15	**Oral Presentations (O-009–O-013)** **Chairs:** Prof. Dr. Abdulkadir Ömer & Prof. Dr. Ayhan Cömert **O-009:** Anatomical evaluation of zygomaticus major muscle with relation to orbicularis oculi muscle and parotid duct Özlem Elvan, Alev Bobuş **O-010:** Morphometric evaluation of the relationship between masseteric nerve and masseteric artery with masseter muscle, and its clinical importance İstemihan Çoban, Yelda Pınar **O-011:** Morphometric features, localization and shape types of fovea capitis femoris Burhan Yarar, Mehmet Ali Malas, Gizem Çizmeci **O-012:** Morphological and morphometric evaluation of proximal and distal femur Eda Esra Esen, Mesut Meker, Bahadır Arı, Mustafa Öztürk **O-013:** Anatomy and clinical importance of the suprascapular nerve Gülşah Zeybek, Gökhan Meriç, Amaç Kiray
13.15–14.15	**Yemek Arası / Lunch**
14.15–14.50	Surgical anatomy of the paranasal sinuses Prof. Dr. Metin Önerci
14.50–15.50	**Oral Presentations (O-014–O-017)** **Chairs:** Prof. Dr. Mehmet Yıldırım & Prof. Dr. Cem Kopuz **O-014:** Placement and morphology of asterion and pterion in adult dry skulls Hülya Özdemir, Mehmet Bülent Özdemir, Danış Aygün **O-015:** Fissura horizontalis variation: a case presentation and literature review İbrahim Cüneyit, Danış Aygün, Şahika Pınar Akyer **O-016:** Clinical importance of medial patellofemoral ligament, anterolateral ligament and posterior oblique ligament: a cadaver study Kerem Yılmaztürk, Ahmed Uluç Yüksel, Kadriye Betül Pençe, Ersin Kuyucu, Ahmet Murat Bülbül **O-017:** Determining the nerve entry points and the innervation features of semispinalis capitis muscle Seda Gözener, Servet Çelik
15.50–16.00	**Çay-Kahve Arası / Tea & Coffee Break**
16.00–16.50	**Oral Presentations (O-018–O-020)** **Chairs:** Prof. Dr. Safiye Çavdar & Prof. Dr. Ceren Günenç Beşer **O-018:** Can erythropoietin and darbepoietin be an alternative to progesterone in the treatment of endometriotic lesions? Mehmet Yalçın Günal **O-019:** Clinical results of micro testicular sperm extraction (microTESE) in azoospermic infertile patients Ceren Erdem Altun, Seda Karabulut, İlknur Keskin, Yusuf Sağıroğlu, Metin İshan Öztürk **O-020:** The effect of different luteal phase progesterone usage on pregnancy rates in the treatment of intracytoplasmic sperm injection Seda Karabulut, Ceren Erdem Altun, İlknur Keskin, Nuri Delikara
18.30	**Boğaz Turu / Bosporus Tour**

Zehrâvî Salonu (Amfi 202)

12.00–13.15	**Oral Presentations (O-021–O-025)** **Chairs:** Prof. Dr. Behice Durgun & Doç. Dr. Tuğrul Örmeci **O-021:** Can the orbital index be used for sex determination and can exophthalmometry be measured by orbital tomography? Mete Özdikici, Erkan Bulut, Sümeyra Ağca **O-022:** Congenital anatomic variations of spleen: multidetector CT study Elif Gündoğdu, Emre Emekli

	O-023: Retrospective investigation of soft tissue thickness of topographic points in adult population by radiological methods Mustafa Cenk Yılmaz, Nihal Yetimoğlu Özdil, Kaan Orhan, Çağrı Şibal, Eray Tüccar
	O-024: Calculation of corpus callosum volume in musicians and non-musicians by MRICloud method Burcu Kamaşak, Burak Oğuzhan Karapınar, Niyazi Acer
	O-025: A case of unilateral atrophy with neurofibromatosis Betül Sevindik, Nadire Ünver Doğan, Abdussamet Batur, Büşra Pirinç, Zeliha Fazlıoğulları
13.15–14.15	**Yemek Arası / Lunch**
14.15–14.50	Surgical anatomy of the liver Prof. Dr. Salim Demirci
14.50–15.50	**Oral Presentations (O-026–O-029)** **Chairs:** Prof. Dr. Zühre Aslı Aktan İkiz & Doç. Dr. Zeliha Fazlıoğulları
	O-026: The evaluation of medical students' learning styles of anatomy course Neslihan Yüzbaşıoğlu, Nureda Nalçacı, Kadriye Betül Pençe, Gamze Ansen, Bahar Tekin
	O-027: Analysis of the effects of exam stress on visual and auditory reaction time and cortisol level: a neuroperformance study Deniz Şenol, Cihat Uçar, Ayşegül Kısaoğlu, Mustafa Canbolat, Davut Özbağ, Sedat Yıldız
	O-028: The relationship between 2/4 fingers ratio and empathy level in medical students Emrah Özcan, İlter Kuş, Ömür Karaca
	O-029: Morphometric measurements of the students of Pamukkale University, Faculty of Dentistry and the effects on their success in applied courses Danış Aygün, Semih Ekici, Şahika Pınar Akyer
15.50–16.00	**Çay-Kahve Arası / Tea & Coffee Break**
16.00–16.50	**Oral Presentations (O-030–O-032)** **Chairs:** Prof. Dr. Deniz Demiryürek & Prof. Dr. Halil İbrahim Açar
	O-030: Anatomy and morphometry of the foramen lacerum Nermin Nüket Göçmen Karabekir, Selim Karabekir, Funda Aksu, Mete Edizer, Ece Şenkul
	O-031: Prevalence and distribution of musculus flexor carpi radialis brevis Ramazan Fazıl Akkoç, Feyza Aksu, Elif Emre, Murat Ögetürk
	O-032: Morphometric analysis of sella turcica types Sema Özandaç Polat, Ayşe Gül Uygur, Mahmut Öksüzler, Fatma Yasemin Öksüzler, Ahmet Hilmi Yücel
18.30	**Boğaz Turu / Bosporus Tour**
Şemseddin-i Itâkî Salonu (Amfi 203)	
12.00–13.15	**Oral Presentations (O-033–O-037)** **Chairs:** Prof. Dr. Ahmet Murat Bülbül & Prof. Dr. Davut Özbağ
	O-033: Analysis of spine anatomy by photoanthropometric method in scoliosis patients Özden Bedre, Figen Gökmen, Murat Öztürk, Onur Süer
	O-034: Evaluation of the relationship between hypermobility and quality of life and pain Merve Sevgi İnce, Güneş Aytaç, Rabet Gözil, Hacer Demirköse
	O-035: Gait analysis after meniscus surgery Menekşe Karahan, Bülent Sabri Cığalı, Mert Özcan
	O-036: Evaluation of the foot posture, subtalar joint supination resistance and general gait parameters in individuals without foot disorders İsmail Türkten, Semih Ayanoğlu
	O-037: Evaluation of impact of plantar pressure distribution on static body biomechanics Ali Demircan, Zeliha Candan Algun
13.15–14.15	**Yemek Arası / Lunch**
14.15–14.50	Radiological imaging of lung interstitium: is it possible to diagnose without knowing the anatomy of the secondary pulmonary lobule? Prof. Dr. Cengiz Erol

14.50–15.50	**Oral Presentations (O-038–O-041)** **Chairs:** Prof. Dr. Emel Ulupınar & Doç. Dr. Şahika Pınar Akyer **O-038:** Efficacy of early rehabilitation in a patient with spinal cord ischemia and hypoxic ischemic encephalopathy: case report Rukiye Çiftçi, Fatma Kızılay, Davut Özbağ, Yüksel Ersoy, Aymelek Çetin **O-039:** Comparison of visual and auditory reaction times in athletes and sedentaries with different somatotypes: neuroperformance study Deniz Şenol, Merve Altınoğlu, Ayşegül Kısaoğlu, Şeyma Toy, Serkan Düz, Davut Özbağ **O-040:** Anatomic location and clinic of colloid cysts Muhammet Arif Özbek **O-041:** Functional anatomy of basal nuclei network İlkan Tatar
15.50–16.00	**Çay-Kahve Arası / Tea & Coffee Break**
16.00–16.50	**Oral Presentations (O-042–O-044)** **Chairs:** Prof. Dr. Lütfiye Bikem Süzen & Doç. Dr. Senem Özdemir **O-042:** The effect of melatonin on vascularization of embryo and embryonic yolk sac Mehtap Nisari, Harun Ülger, Tolga Ertekin, Arzu Hanım Yay, Meryem Şentürk, Dilara Patat, Dicle Çayan, Ayşe Ömerli, Özge Al, Sümeyye Uçar, Hatice Güler **O-043:** Iliocapsularis muscle in human fetuses Özlem Elvan, Mustafa Aktekin, Ecem Şengezer, Zeliha Kurtoğlu Olgunus, Alp Bayramoğlu **O-044:** Morphometric development of cerebellum during fetal period Şeyma Ergen, Kenan Öztürk, Soner Albay
18.30	**Boğaz Turu / Bosporus Tour**

Ebu Bekir Er-Râzî Salonu (Amfi 204)

12.00–13.15	**Oral Presentations (O-045–O-049)** **Chairs:** Prof. Dr. Adnan Öztürk & Prof. Dr. İsmihan İlknur Uysal **O-045:** Examination of temporomandibular joint disorders in individuals with cerebral palsy Derya Şahin, Nadire Ünver Doğan, Ayşe Kartal, Ahmet Kağan Karabulut, Zeliha Fazlıoğulları **O-046:** Monckeberg's arteriosclerozis: report of two cases Nebiha Gözde İspir, Meryem Toraman Alkurt **O-047:** Surgical morphological evaluation of the anatomical position of lingula mandibulae Muzaffer Sindel, Hande Salım, Merve Sarıkaya Doğan, Serra Öztürk, Mehmet Berke Göztepe, Busehan Bilgin, Engin Çalgüner, Alper Sindel **O-048:** Evaluation of vertical relationship between maxillary teeth roots and maxillary sinus using cone beam computed tomography (CBCT) Aslıhan Akbulut, Bayram Ufuk Şakul **O-049:** Morphometric analysis of mandible coronoid process parameters between two sides Gonca Ay Keselik, Mehmet Ali Malas
13.15–14.15	**Yemek Arası / Lunch**
14.50–15.50	**Oral Presentations (O-050–O-053)** **Chairs:** Prof. Dr. Yasin Arifoğlu & Doç. Dr. İlke Ali Gürses **O-050:** Morphometry and vertebra level of hyoid bone Ahmet Dursun, Mehtap Ayazoğlu, Veysel Atilla Ayyıldız, Yadigar Kastamoni, Kenan Öztürk, Soner Albay **O-051:** Variations in the V1 and V2 segments of the vertebral artery and their clinical significance Fulya Yaprak, Mehmet Asım Özer, Figen Gövsa, Cenk Eraslan **O-052:** Sex and age related differences in the dimensions of the corpus callosum and brain: morphometric MRI study Ayşegül Güngör Aydın, Erdal Coşkun, Fatih Yakar, Esat Adıgüzel **O-053:** Evaluation of hamate bone structure with microcomputerized tomography (micro-CT) method Hakan Ocak, Mert Ocak, Ferhat Geneci, Hakan Hamdi Çelik
15.50–16.00	**Çay-Kahve Arası / Tea & Coffee Break**

16.00–16.50	**Oral Presentations (O-054–O-056)**
	Chairs: Prof. Dr. Engin Çalgüner & Doç. Dr. İlkan Tatar
	O-054: An investigation of oesophageal strictures, esophageal hiatus and oesophagogastric junction localizations related to age and gender Zekiye Karaca Bozdağ, Emre Bozdağ, Ayla Kürkçüoğlu, Ayça Pamukcu, Hilmi Bozkurt, Aziz Serkan Senger
	O-055: Effect of chloroquine in chronic hypoxia-induced bowel damage Emin Kaymak, Ali Tuğrul Akin, Betül Yalçın, Emel Öztürk, Tayfun Ceylan, Kemal Erdem Başaran, Derya Karabulut, Züleyha Doğanyiğit, Saim Özdamar, Birkan Yakan
	O-056: Investigation of the effect of hip muscle force on bone mineral density and balance in osteoporosis Büşra Öner, Şükriye Leyla Altuntaş
18.30	**Boğaz Turu / Bosporus Tour**

Şânizâde Mehmed Atâullah Salonu (Amfi 206)

12.00–13.15	**Oral Presentations (O-057–O-060)**
	Chairs: Prof. Dr. Salim Demirci & Prof. Dr. Mustafa Öncel
	O-057: Prof. Dr. Demir Ali Uğur, Netter of Turks Semih Baskan
	O-058: Perforator flaps: a systematic review Ümmühan Yağmurkaya, İsmihan İlknur Uysal
	O-059: Investigation of the morphological structure of anal sphincter in patients with hemorrhoidal disease: preliminary findings Nesibe Yılmaz, Evren Köse, Mustafa Ateş, Ahmet Kavaklı, Davut Özbağ
	O-060: Investigation of the gender-based differences in evaluation of renal calyces in Turkish race by ureteropelvic angle, infundibulopelvic angle, ureter diameter and Sampaio classification İlknur Ölker, Bayram Ufuk Şakul
13.15–14.15	**Yemek Arası / Lunch**
14.50–15.50	**Oral Presentations (O-061–O-064)**
	Chairs: Prof. Dr. Piraye Kervancıoğlu & Doç. Dr. İlker Mustafa Kafa
	O-061: Anthropometric measurements of the facial region in children with cerebral palsy Zeynep Akça Andı, Ahmet Uzun
	O-062: Sex estimation in anthropology: a bibliometric analysis Volkan Zeybek
	O-063: Antropometric measurements and indices used in craniofacial anthropopmetry Büşra Nur Özcan, Mahmut Özel, Mehmet Emirzeoğlu, Ahmet Uzun
	O-064: Evaluation of the distance between auricula and midline of the face for facial symmetry Mahmut Özel, Ahmet Uzun, Murat Gölpınar, Zeynep Akça, Mehmet Emirzeoğlu
15.50–16.00	**Çay-Kahve Arası / Tea & Coffee Break**
16.00–16.50	**Oral Presentations (O-065–O-067)**
	Chairs: Prof. Dr. Metin Önerci & Prof. Dr. Muzaffer Sindel
	O-065: Evaluation of the distribution of mechanoreceptors and neural body in the hip joint with severe coxarthrosis in 9 patients: a histologic and stereologic study Bahar Tekin, Mustafa Gökhan Bilgili, Erdem Edipoğlu, Gözde Erkanlı Şentürk, Bircan Kolbaşı, Paria Shojaolsadati, Alper Atasever
	O-066: Immunohistochemical and histopathological evaluation of the effects of hypericum perforatum extract on carciogen applied oral mucosa Dilara Nur Öztürk, Ayşegül Fırat, Fevziye Figen Kaymaz, Aysel Uğur, Nurdan Saraç, İnci Rana Karaca
	O-067: Regulation of hypothalamic hunger circuits by a catecholaminergic pathway in TH-cre transgenic mice Utku Cebecioğlu, İltan Aklan, Nilufer Sayar Atasoy, Yavuz Yavuz, Tayfun Ateş, İlknur Çoban, Gizem Filiz, Fulya Köksalar Alkan, Pelin Dilsiz, Muhammed İkbal Alp, Bayram Yılmaz, Deniz Atasoy
18.30	**Boğaz Turu / Bosporus Tour**

29 Ağustos 2019, Perşembe / Thursday, 29 August 2019

İbn-İ Sînâ Salonu (Ana Salon)

09.30–10.30	The cellular, molecular and anatomical bases of chronic pain Prof. Dr. Richard T. Ambron
10.30–10.45	**Çay-Kahve Arası / Tea & Coffee Break**
10.45–11.45	Anatomical corridors in surgical approach to infratentorial tumors Prof. Dr. Nejat Akalan
11.45–12.00	**Çay-Kahve Arası / Tea & Coffee Break**
12.00–13.15	**Oral Presentations (O-068–O-072)** **Chairs:** Prof. Dr. Salih Murat Akkın & Doç. Dr. Ela Cömert **O-068:** Anatomy of singing Begüm Akgül **O-069:** Myositis ossificans seen in left lateral cervical region: case report Umut Kaygusuz, Nuriye Kurbetli, Şahika Pınar Akyer, Mehmet Bülent Özdemir **O-070:** Hearing loss due to the mumps: case report and literature review Rumeysa Dikici, Büşra Candan, Taha Sarısakaloğlu **O-071:** Volumetric analysis and evaluation of maxillary sinus by three dimensional (3D) imaging in patients with septum nasi deviation Şahika Pınar Akyer, Umut Kaygusuz, Nuriye Kurbetli, Mehmet Bülent Özdemir **O-072:** Radiological assisted anatomical measurements in anterior servical surgery Burak Kazancı, Hakan Sabuncuoğlu, Tülin Şen Esmer
13.15–14.45	**Toplu Fotoğraf Çekimi ve Yemek Arası / Congress Photo & Lunch**
14.45–15.20	Science in the Islamic world: is something wrong? Prof. Dr. Ahmet Kağan Karabulut
15.20–16.10	**Oral Presentations (O-073–O-076)** **Chairs:** Prof. Dr. Timur Sindel & Prof. Dr. Hülya Üçerler **O-073:** Evaluation of morphometric features of mandible on three-dimensional computed tomography Yadigar Kastamoni, Onur Can Şanlı, Veysel Atilla Ayyıldız, Kenan Öztürk, Kübra Yazar İyigün, Ahmet Dursun **O-074** Morphometric analysis of the orbit and orbital structures with three dimensional computed tomography Kenan Öztürk, Merve Dalkıran, Veysel Atilla Ayyıldız, Ahmet Dursun, Kübra Yazar İyigün, Yadigar Kastamoni **O-075:** Sex determination from radiographic calcaneus measurements Gülşah Zeybek, Sercan Çapkın, Can Koşay, Amaç Kiray, İpek Ergür **O-076:** Association of major anatomical structures of the abdomen with surface anatomy in children: preliminary report Umut Şener, Ayfer Metin Tellioğlu, Yasemin Durum Polat
16.10–16.20	**Çay-Kahve Arası / Tea & Coffee Break**
16.20–17.10	**Oral Presentations (O-077–O-079)** **Chairs:** Prof. Dr. Ayşin Kale & Doç. Dr. Servet Çelik **O-077:** The investigation of the development of carrying angle in fetal period Kübra Erdoğan, Mehmet Ali Malas **O-078** Development of the extraocular muscles during the fetal period Cemil Bilkay, Esra Koyuncu, Ahmet Dursun, Kenan Öztürk **O-079:** The protective role of vitamin E against the teratogenic effect of caffein on embryonic metacarpal bone development Seher Yılmaz, Adem Tokpınar
19.00	**Gala Yemeği / Gala Dinner (Hıdiv Kasrı)**

İbnü'n Nefîs Salonu (Amfi 201)

12.00–13.15	**Oral Presentations (O-080–O-084)** **Chairs:** Prof. Dr. Gülgün Şengül & Prof. Dr. Lütfü Hanoğlu
	O-080: Topographic anatomical points related to the most frequently used craniotomy procedures Ayjeren Ahmedova, Nejat Akalan, Furkan Yüzbaşıoğlu, Bahar Tekin
	O-081: The clinical anatomy of the subthalamus Mazhar Özkan, Ali Zeybek
	O-082: The segmentation of the posterior cerebral artery: a microsurgical anatomic study Aysun Uz
	O-083: A research of origin, course and variations of labyrinthine artery intended for posterior fossa surgery Mustafa Deniz Yörük, Hülya Üçerler
	O-084: Comparative study on the gray matter volume and neurohypophysial peptide effect in the temporal lobe regions of Alzheimer's patients and healthy persons Emine Petekkaya, Gülen Burakgazi, İsmet Murat Melek, Abdullah Arpacı
13.15–14.45	**Toplu Fotoğraf Çekimi ve Yemek Arası / Congress Photo & Lunch**
14.45–15.20	Tissue clearing Dr. Öğr. Üyesi Taha Keleştemur
15.20–16.10	**Oral Presentations (O-085–O-088)** **Chairs:** Prof. Dr. Mustafa Sancar Ataç & Prof. Dr. Soner Albay
	O-085: Morphometric evaluation of the temporomandibular joint on cone beam computed tomography images Elif Ayyıldız, Mustafa Orhan, İlhan Bahşi, Eda Didem Yalçın
	O-086: The prevalence of bifid mandibular condyle: a cone-beam computed tomography study Nuray Sesli, Umut Pamukçu, İlkay Peker
	O-087: Evaluation of the relationship between age of teeth and pulpal lengths with panoramic radiography of mandibular premolar teeth Muhsin Said Karataş, Gülsün Akay, Özge Karadağ, Kahraman Güngör, Cemile Özlem Üçok
	O-088: Assessment of pterygomaxillary junction using cone beam computed tomography Sümer Münevveroğlu, Barış Çağrı Delilbaşı
16.10–16.20	**Çay-Kahve Arası / Tea & Coffee Break**
16.20–17.10	**Oral Presentations (O-089–O-091)** **Chairs:** Prof. Dr. Özkan Oğuz & Prof. Dr. Nadire Ünver Doğan
	O-089: Analysis of os sacrum and os cocxygis sizes calculated with CT images based on gender Rukiye Sümeyye Bakıcı, Zülal Öner
	O-090: Comparison of standard measurements in growth and development follow-up and anthropometric measurements of hand-foot in 0–12 months-infants Merve Celep, Zeynep Akın, Mehmet Haluk Uluutku
	O-091: A comparative study of morphometric changes in the middle phalanx of the 5th finger of the dominant hand related to mobile phone use İlkem Güzel, Mustafa Fevzi Sargon, Naime Uluğ, Fatma Cansu Aktaş
19.00	**Gala Yemeği / Gala Dinner (Hıdiv Kasrı)**

Zehrâvî Salonu (Amfi 202)

12.00–13.15	**Oral Presentations (O-092–O-096)** **Chairs:** Prof. Dr. Adem Güngör & Doç. Dr. Semih Ayanoğlu
	O-092: Evaluation of lumbal lordosis biomechanics in patients with lumbal disc herniation: clinical stereological study Seray Avcılar, Hamit Selim Karabekir, Funda Aksu, Canan Güvercin, Nüket Göçmen Karabekir
	O-093: Q angle and lower extremity deformities in children with and without Down syndrome: a preliminary study Güliz Ertekin, İsmihan İlknur Uysal, Mehmet Sinan İyisoy

	O-094: Evaluation of the frequency of "upper cross syndrome" among medical students Merve Sevgi İnce, Rabet Gözil, Hacer Demirköse, Güneş Aytaç
	O-095: Isolated avulsion fracture of the trochanter minor caused by minor trauma: a case report and literature review Abdullah Örs, Ahmet Köroğlu, Esra Kayabaşı, Tuncay Çolak, Kaya Memişoğlu
	O-096: Success in anatomic reduction of tibial plateau fractures: 3D patient special model Figen Gökmen, Mehmet Asım Özer, Anıl Murat Öztürk, Onur Süer, Okan Derin, Kemal Aktuğlu
13.15–14.45	**Toplu Fotoğraf Çekimi ve Yemek Arası / Congress Photo & Lunch**
14.45–15.20	Breast anatomy through the eye of a plastic surgeon Prof. Dr. Naci Karacaoğlan
15.20–16.10	**Oral Presentations (O-097–O-100)** **Chairs:** Prof. Dr. Zeliha Kurtoğlu Olgunus & Prof. Dr. Eray Tüccar
	O-097: Evaluation of professional qualifications of intern doctors from radiological images Mustafa Canbolat
	O-098: Acute appendicitis and appendectomy in the history Turgay Karataş, Davut Özbağ
	O-099: A pilot survey on student opinions of a sectional anatomy elective with play-dough modelling İlke Ali Gürses
	O-100: Teaching pelvis anatomy using holographic images and three-dimensional printed model Alper Vatansever, Deniz Demiryürek
16.10–16.20	**Çay-Kahve Arası / Tea & Coffee Break**
16.20–17.10	**Oral Presentations (O-101–O-103)** **Chairs:** Prof. Dr. Cengiz Erol & Prof. Dr. Adnan Öztürk
	O-101: The effect of anatomical localization of lung tumors and their correlations to the other variables on staging of lung cancer by using whole body PET/CT images Merve Küçüker, Kadir Alper Küçüker, Behice Durgun
	O-102: The use of diffusion tensor and functional magnetic resonance imaging before cranial surgery Sabariye Şennur Bilgin, Alican Tahta
	O-103: A comparative analysis of the magnetic resonance T1 3D sequences and brain segmentations of adolescents and adults Seda Avnioğlu, Özkan Özen
19.00	**Gala Yemeği / Gala Dinner (Hıdiv Kasrı)**
Şemseddin-i Itâkî Salonu (Amfi 203)	
12.00–13.15	**Oral Presentations (O-104–O-108)** **Chairs:** Prof. Dr. Mehmet Ali Malas & Prof. Dr. Ahmet Kağan Karabulut
	O-104: The importance of renal artery anomalies in aortic surgery Mustafa Etli
	O-105: In-hospital mortality and major complication rates are higher in patients with anatomical coronary artery anomaly Mustafa Ahmet Huyut
	O-106: An anomaly of the right aortic arch with the left aberrant subclavian artery diagnosed in adulthood Sevda Lafcı Fahrioğlu, Cemaliye Lordoğlu, Ferda Selçuk, Yasemin Küçükçiloğlu, Dilaver Akdur, Musa Muhtaroğlu, Sezgin İlgi
	O-107: Situs inversus transversus and Kartagener syndrome Semih Hot
	O-108: A single coronary ostium originating from the left sinus valsalva and arteria coronaria dextra originating from the distal part of the ramus circumflexus: a case report and literature review Songül Çuğlan, Bilal Çuğlan
13.15–14.45	**Toplu Fotoğraf Çekimi ve Yemek Arası / Congress Photo & Lunch**

14.45–15.20	Surgical anatomy of pituitary gland pathologies in endonasal and trans-sphenoidal approach Prof. Dr. Zeki Şekerci
15.20–16.10	**Oral Presentations (O-109–O-112)** **Chairs:** Prof. Dr. Gülseren Kökten & Prof. Dr. Çağatay Barut **O-109:** Effects of banana peel juice and cherry seed oil in experimental wound healing model Ayşe Arzu Sayın Şakul, İlknur Keskin, Seda Karabulut, Hanefi Özbek **O-110:** Methods used in dissection of anatomically specific brain tissues in rats, ease of application Eda Duygu İpek, Ayşe Gizem Şahmelikoğlu, Hatice Kübra Başaloğlu, Hulki Başaloğlu **O-111:** The tests used to evaluate learning and memory in experimental animals and their reliability Didem Dönmez, Oğuz Taşkınalp **O-112:** The protective effect of melatonin in acute high dose imidaclopridine exposure on rat brain damage Mehmet Demir, Mustafa Çiçek, Nadire Eser, Aslı Yaylalı, Atilla Yoldaş
16.10–16.20	**Çay-Kahve Arası / Tea & Coffee Break**
16.20–17.10	**Oral Presentations (O-113–O-115)** **Chairs:** Prof. Dr. Mehmet Demirtaş & Prof. Dr. Hülya Gürbüz **O-113:** Abdominal access techniques used in laparoscopic surgery İbrahim Karaca, Mustafa Yasin Öztoprak **O-114:** Examination of collateral circulatory variations of the gut in the stenosis of the superior mesenteric artery Özhan Özgür, Kürşat Erman, Merve Sarıkaya Doğan, Serra Öztürk, Hande Salım, Muzaffer Sindel, Timur Sindel **O-115:** Variations of superior thyroid artery and surgical importance: pre-study findings Zekiye Gözde Kara, Mehmet Yılmaz, Aybegüm Akın, Selda Yıldız, Ayhan Cömert
19.00	**Gala Yemeği / Gala Dinner (Hıdiv Kasrı)**

Ebu Bekir Er-Râzî Salonu (AMFİ 204)

12.00–13.15	**Oral Presentations (O-116–O-120)** **Chairs:** Prof. Dr. Figen Gövsa Gökmen & Doç. Dr. Burak Bilecenoğlu **O-116:** Evaluation of measurements of lumbar spine in patients hand preference determined with chronic low back pain Elif Yavruoğlu Köse, Merve Celep, Mehmet Haluk Uluutku **O-117:** Geometric morphometry Nida Karakaya, Hakan Yalçın **O-118:** Investigation of distal humerus morphometry Sevda Lafcı Fahrioğlu, Funda Aksu, Yasemin Küçükçiloğlu, Mete Edizer, Sibel Çırpan, Selim Karabekir **O-119:** Using Archimedes' method to measure os calcaneus volume Ali Utkan, Serap Gülçek, Ali Can Korkmaz, Aysun Uz **O-120:** Surgical significance of morphometrical analysis of the superior orbital fissure: stereological study Nermin Nüket Göçmen Karabekir, Hamit Selim Karabekir, Funda Aksu, Ece Şenkul
13.15–14.45	**Toplu Fotoğraf Çekimi ve Yemek Arası / Congress Photo & Lunch**
15.20–16.10	**Oral Presentations (O-121–O-124)** **Chairs:** Prof. Dr. Ayşenur Cila & Doç. Dr. Ayşegül Fırat **O-121:** A rare cause of dorsal wrist masses: Carpal boss Tuğrul Örmeci **O-122:** Evaluation of thalamus volumes with magnetic resonance imaging in patients with diabetic polyneuropathy Ayşegül Öztürk, Vedat Sabancıoğulları, Yaşar Taştemur **O-123:** Evaluation of distances among the infraorbital and the supraorbital foramina to the midline in 3D reconstructions of high resolution cranial CT images Ural Verimli **O-124:** Evaluation of intratemporal course of the facial nerve by multidetector computed tomography and multi planar reconstruction technique Tuğba İlkem Kurtoğlu Özçağlayan, Ömer Özçağlayan
16.10–16.20	**Çay-Kahve Arası / Tea & Coffee Break**

16.20–17.10	**Oral Presentations (O-125–O-127)** **Chairs:** Prof. Dr. Okan Bilge & Doç. Dr. Umut Özsoy **O-125:** An overview of the methods for quantitative evaluation of spinal curvatures in sagittal plane Murat Gölpınar, Ferhat Say, Fikri Özdemir **O-126:** Investigation of the relationships among processus coracoideus and acromion and caput humeri in impingement syndrome Zehra Seznur Kasar, Ersen Ertekin **O-127:** Morphological features of the cubital tunnel and ulnar nerve in the cubital tunnel studied with MRI Senem Çelik Yolcular, Mustafa Büyükmumcu, Ülkü Kerimoğlu, Anıl Didem Aydın Kabakçı, Hilal Kocabaş, Onur Bilge
19.00	**Gala Yemeği / Gala Dinner (Hıdiv Kasrı)**

Şânizâde Mehmed Atâullah Salonu (Amfi 206)

12.00–13.15	**Oral Presentations (O-128–O-132)** **Chairs:** Prof. Dr. Hulki Başaloğlu & Doç. Dr. Barış Özgür Dönmez **O-128:** The surgical anatomy of the triangular interval Ali Can Korkmaz, Yiğit Güngör, Aysun Uz **O-129:** Anatomical evaluation of neurovascular structures at wrist according to radial styloid process Yiğit Güngör, Ayhan Cömert, Marcela Bezdickova, Ali Can Korkmaz, Ömer Kutay Mutlu **O-130:** Effect of musculus pronator quadratus repair on pressure between musculus flexor pollicis longus tendon and plaque in radius distal end fractures: cadaver study Yunus Öç, Fikri Özdemir, Bekir Eray Kılınç **O-131:** Camper chiasm and vincular patterns in adult cadavers Uğur Dinç, Ecem Şengezer, Orhan Beger, Merve Şehide Yılmaz, Zeliha Kurtoğlu Olgunus **O-132:** A new reliable and safe approach for the sciatic nerve block in the gluteal region. Surface projection of the sciatic nerve: a combined cadaveric and clinical study Ayşe Surhan Çınar, Alpaslan Apan, Luis Filgueira, Aysun Uz
13.15–14.45	**Toplu Fotoğraf Çekimi ve Yemek Arası / Congress Photo & Lunch**
15.20–16.10	**Oral Presentations (O-133–O-136)** **Chairs:** Prof. Dr. Oğuz Taşkınalp & Doç. Dr. Papatya Keleş **O-133:** Medical students' perception of clinical anatomy and the importance of clinical anatomy in anatomy education in Turkey Güneş Aytaç, Merve Sevgi İnce, Didem Çelikcan, Rabet Gözil **O-134:** Cadaver-based medical simulation in practice Ceren Günenç Beşer, Deniz Demiryürek **O-135:** Mixed reality era in anatomy Deniz Demiryürek, Selin Çalışkan, Buğra İlter **O-136:** Importance of anatomy and its relevance in daily clinical practice according to active Turkish physicians Fulya Temizsoy Korkmaz, Buse Naz Çandır, Ayşe Nur Balcı Yapalak, İlke Ali Gürses
16.10–16.20	**Çay-Kahve Arası / Tea & Coffee Break**
16.20–17.10	**Oral Presentations (O-137–O-139)** **Chairs:** Prof. Dr. Nihat Ekinci & Doç. Dr. İlknur Dağ **O-137:** Correlation between craniofacial measurements and occlusal vertical dimension in young adults Şükriye Deniz Mutluay **O-138:** Bruxism and musculus masseter: ultrasonographic study İlyas Uçar, Yeliz Dadalı, Anıl Özüdoğru **O-139:** The relationship between sella turcica shape and size with different dentofacial skeletal patterns: a pilot study Gülsün Akay, Kahraman Güngör
19.00	**Gala Yemeği / Gala Dinner (Hıdiv Kasrı)**

30 Ağustos 2019, Cuma / Friday, 30 August 2019

İbn-i Sînâ Salonu (Main Hall)

09.30–10.30	Pancreas: the secrets of a hidden organ Prof. Dr. Abdulkadir Ömer
10.30–10.45	**Çay-Kahve Arası / Tea & Coffee Break**
10.45–11.45	**Panel** / Orthopaedic anatomy **Chairs:** Prof. Dr. Ahmet Murat Bülbül Shoulder arthroscopy portals and incisions Prof. Dr. Mehmet Demirtaş
	Hand and wrist arthroscopy portals and incisions Prof. Dr. Kahraman Öztürk
	Elbow arthroscopy portals and incisions Doç. Dr. Adnan Kara
11.45–12.00	**Çay-Kahve Arası / Tea & Coffee Break**
12.00–13.15	**Oral Presentations (O-140–O-144)** **Chairs:** Prof. Dr. Nejat Akalan & Prof. Dr. Selçuk Sürücü **O-140:** Is there any effect of foramen magnum morphometry on Chiari malformation? Ozan Turamanlar, Erdal Horata, Furkan Kaya, Mehmet Gazi Boyacı, Oğuzhan Kıyak, Feyza Nur Ören
	O-141: The anatomy of corpus callosum in patients with schizophrenia spectrum disorder Fatma Nur Türkoğlu, Nadire Ünver Doğan, Memduha Aydın, Hakan Cebeci, Zeliha Fazlıoğulları, Mustafa Agah Tekindal, Ahmet Kağan Karabulut
	O-142: Three dimensional (3D) acquisition of cerebellum and brainstem images in essential tremor and correlation with clinical symptoms Nuriye Kurbetli, Selma Tekin, Şahika Pınar Akyer, Mehmet Bülent Özdemir
	O-143: Morphometric analysis and classification of the brain superficial venous system on digital subtraction angiographic images Meriç Yıldız Yılmaz, Bahattin Hakyemez, İhsaniye Coşkun
	O-144: There is a hidden path from heart to heart, an anatomic path from soul to soul Emine Petekkaya, Mahinur Ulusoy Karadeniz
13.15–14.15	**Yemek Arası / Lunch**
14.15–14.50	Evaluation of larynx anatomy for sound formation Prof. Dr. İsmail Koçak
14.50–15.50	Clinical anatomy of the colorectal region from the anatomist, surgeon and radiologist window Prof. Dr. Mustafa Öncel
15.50–16.00	**Çay-Kahve Arası / Tea & Coffee Break**
16.00–16.50	**Oral Presentations (O-145–O-147; O-193)** **Chairs:** Prof. Dr. Erdoğan Şendemir & Prof. Dr. Yelda Pınar **O-145:** Anatomy education and disaster medicine Hilmi Özden, Abdullah Ortadeveci, Hakan Ay, Semih Öz
	O-146 Quantitative evaluation of the anatomy teaching staff found in medical schools in Turkey Saliha Seda Adanır, İlhan Bahşi, Mustafa Orhan, Piraye Kervancıoğlu
	O-147: Can you show me how to learn anatomy? A critical review of the literature İsmet Demirtaş, Behçet Ayyıldız, Sevilay Karasu, Ahmet Taha Demirbaş
	O-193: Occupational disease of anatomy department employees Nurullah Yücel, Zekeriya Çelik, Mehmet Tuğrul Yılmaz, Muzaffer Şeker, Nuri Bingöl

İbnü'n Nefîs Salonu (Amfi 201)

12.00–13.15	**Oral Presentations (O-148–O-152)** **Chairs:** Prof. Dr. Zeki Şekerci & Prof. Dr. Mehmet Emirzeoğlu **O-148:** Neurodegenerative diseases Beyza Berçin
	O-149: The variations of dural venous sinus system Yeliz Dadalı, Sercan Özkaçmaz, İlyas Uçar, Muhammed Alpaslan
	O-150: The computational neuroanatomy of pain, pleasure and happiness Behice Durgun
	O-151: Effect of TMS on lateral posterior cortex and hippocampus functional connectivity in Alzheimer's disease model Halil Aziz Velioğlu, Zübeyir Bayraktaroğlu, Lütfü Hanoğlu
	O-152: Spinal epidural hematoma presenting with progressive gait difficulty Özge Arıcı Düz
13.15–14.15	**Yemek Arası / Lunch**
14.15–14.50	Surgical anatomy of trachea Prof. Dr. Adem Güngör
15.50–16.00	**Çay-Kahve Arası / Tea & Coffee Break**
16.00–16.50	**Oral Presentations (O-153–O-156)** **Chairs:** Prof. Dr. Nurettin Oğuz & Prof. Dr. Ali Yılmaz **O-153:** Morphological and morphometric examination of pronator teres muscle in terms of clinical anatomy Aybegüm Akın, Serhat Kesriklioğlu, Mehmet Olgun, Şule Öztürk, Güney Şentürk, Büşra Yıldız, Batuhan Bakırarar, Tülin Şen Esmer
	O-154: Regression and correlative analysis study of the graft length for reconstruction of lateral patellofemoral ligament Sefa Işıklar, Serdar Babacan, Senem Özdemir, Gökhan Gökalp
	O-155: Congenital bilateral patella aplasia Musa Çankaya, Gökmen Yapali, Serdar Arslan
	O-156: Investigation of the immediate effect of Mulligan mobilization on range of motion of the hip and horizontal jump Burak Menek, Zeliha Candan Algun

Zehrâvî Salonu (Amfi 202)

12.00–13.15	**Oral Presentations (O-157–O-161)** **Chairs:** Prof. Dr. Senem Erdoğmuş Koç & Prof. Dr. Ali Fırat Esmer **O-157:** Development of congress abstract reporting standards and an abstract quality rubic Latif Sağlam, Osman Coşkun, Ahmet Ertaş, İlke Ali Gürses
	O-158: Assessment of methods used in anatomy practice education Nazlı Gülriz Çeri, Gizem Sakallı
	O-159: Preparation of cadaver brain by using alkyd resin method Selim Çınaroğlu, Hacı Keleş
	O-160: 3D modelling and printing in practical anatomy curriculum İlkan Tatar
	O-161: Understanding of the neural correlates of Turkish conceptual metaphors by using fNIRS method in elderly healthy native speakers Merve Dikmen, Ece Zeynep Karakulak, Kübra Kadak, Sinem Burcu Erdoğan, Lütfü Hanoğlu
13.15–14.15	**Yemek Arası / Lunch**
14.15–14.50	MRI of brain association pathways Prof. Dr. Ayşenur Cila
15.50–16.00	**Çay-Kahve Arası / Tea & Coffee Break**

16.00–16.50 **Oral Presentations (O-162–O-165)**

Chairs: Prof. Dr. Ahmet Hilmi Yücel & Prof. Dr. Tülin Şen Esmer

O-162: Length determination in humerus bones of Byzantine and contemporary periods
Nilgün Tuncel Çini, İlknur Arı

O-163: Evaluation of the anthropometric dimensions, elasticity and muscle strength of the hand in conservatory students who are playing the piano regularly
Merve İzci, İsmail Can Pelin

O-164: Age and sex related changes of periocular anthropometry measurements in Anatolian population
Fikri Özdemir, Murat Gölpınar, Mert Nahir, Bünyamin Şahin

O-165: Results of tDCS treatment combined with cognitive rehabilitation in a pure alexia patient: anatomy/function relationship
Miray Budak, Lütfü Hanoğlu

Şemseddin-i Itâkî Salonu (Amfi 203)

12.00–13.15 **Oral Presentations (O-166–O-170)**

Chairs: Prof. Dr. Aysun Uz & Doç. Dr. Ersin Kuyucu

O-166: Morphological variations and morphometric analysis of sternum in multidetector computed tomography
Huriye Gizem Önlüoğlu Esgil, Aynur Emine Çiçekcibaşı, Gülay Açar, Kemal Emre Özen, İbrahim Güler, Hakan Cebeci

O-167: Investigation of brain volume changes by MRI in adolescents with Down syndrome
Seyda Onat, Birsen Özyurt, Erdoğan Kavlak

O-168: Relationship of subcutaneous and visceral adiposity to the variations of diaphragm based on computed tomography images
Burcu Abaylı, İsmihan İlknur Uysal, Gülay Açar, Pınar Diydem Yılmaz

O-169: Vascular variations of the kidney, retrospective analysis of computed tomography images of ninety-one laparoscopic donor nephrectomies and comparison of computed tomography images with perioperative findings
Murat Ferhat Ferhatoğlu

O-170: CT evaluation of cervical surface anatomy with vertebral levels in an adult population
Gülay Açar, Aynur Emine Çiçekcibaşı, Nusret Seher, Mustafa Koplay

13.15–14.15 **Yemek Arası / Lunch**

14.15–14.50 A complex and difficult joint: shoulder
Doç. Dr. Ersin Kuyucu

15.50–16.00 **Çay-Kahve Arası / Tea & Coffee Break**

16.00–16.50 **Oral Presentations (O-171–O-174)**

Chairs: Prof. Dr. Kahraman Öztürk & Prof. Dr. Barış Çağrı Delilbaşı

O-171: Investigation of pterygopalatine canal localization in terms of osteotomy safety of patients with orthognatic surgery indications in Turkish population
Ali Ekemen, Orkhan Ismayilov, Burak Bilecenoğlu, Raha Akbarihamed, Hakan Alpay Karasu

O-172: Presence of bifid mandibular canal: a case of report
Semih Ekici, Şahika Pınar Akyer, Danış Aygün

O-173: The variety and the impact of the clinical and radiologic methods for the diagnostic of temporomandibular disorders: does the complex anatomy of masticatory system make the diagnosis and treatment difficult?
İpek Necla Güldiken

O-174: An investigation of the relationship between temporomandibular disorder and posture
Gizem Ergezen, Burak Menek, Mustafa Şahin, Zeliha Candan Algun

Ebu Bekir Er-Râzî Salonu (Amfi 204)

12.00–13.15	**Oral Presentations (O-175–O-179)**
	Chairs: Prof. Dr. Yıldırım Ahmet Bayazıt & Prof. Dr. İsmail Koçak
	O-175: Determination of safe and danger zones for facial nerve branches in closed interventions for pain treatment İlke Bayzıt Koçer, Cemre Zavır, Servet Çelik, Okan Bilge
	O-176: Evaluation of dimensions of Rosenmüller fossa on cone beam computed tomography Sema Kaya, Alaettin Koç
	O-177: Evaluation of septated variational anatomy of concha bullosa types with cone beam computed tomography Hülya Çakır Karabaş, İlknur Özcan, Beliz Güray, Mete Büyükertan, Hüseyin Avni Balcıoğlu
	O-178: Evaluation of the frequency of dehissence of facial canal and the distance between facial canal and cochlea: a micro-CT study Ferhat Geneci
	O-179: External ear anatomy and variations in newborns Saadet Erdem, Zeliha Fazlıoğulları, Ahmet Ural, Ahmet Kağan Karabulut, Nadire Ünver Doğan
13.15–14.15	**Yemek Arası / Lunch**
15.50–16.00	**Çay-Kahve Arası / Tea & Coffee Break**
16.00–16.50	**Oral Presentations (O-180–O-183)**
	Chairs: Prof. Dr. Nihal Apaydın & Prof. Dr. Niyazi Acer
	O-180: Case report of bilaterally rare variational veins in the deep venous system of the lower extremities Kaan Çimen, Güldal Doğruyol, Mehmet Çimen
	O-181: The anatomical approach to lower lid fat pads for blepharoplasty İstemihan Çoban, Okan Derin, Yelda Pinar, Figen Gövsa, Suzan Şirintürk
	O-182: Topographical evaluation of the foramen spinosum Nermin Nüket Göçmen Karabekir, Funda Aksu, Selim Karabekir, Sevda Lafçı Fahrioğlu, Ece Şenkul
	O-183: Situs inversus totalis and dextrocardia: case report Ayşe Kristina Polat, Adem Tokpınar, Seher Yılmaz

Şânizâde Mehmed Atâullah Salonu (Amfi 206)

12.00–13.15	**Oral Presentations (O-184–O-188)**
	Chairs: Prof. Dr. Naci Karacaoğlan & Doç. Dr. Adnan Kara
	O-184: Long-term acupuncture treatment response in fibromyalgia patients Burak Gülcen, Nermin Tepe
	O-185: An alternative treatment modality that worths being considered by anatomists: prolotherapy Kübra Yazar İyigün, Soner Albay
	O-186: The effect of Myrtus communis leaves extract on blood serum level which has occurred expremential urolithiasis on rats Halil Yılmaz, Nihat Ekinci, Mehtap Nisari, Ayşe Ömerli, Arzu Hanım Yay, Harun Ülger, Gökçe Şeker Karatoprak, Seher Yılmaz, Şükrü Ateş, Mustafa Taştan
	O-187: The effects of different fractions of Gilaburu viburnum opulus juice on the experimentally induced cancer in mice Özge Al, Mehtap Nisari, Tolga Ertekin, Gökçe Şeker Karatoprak, Sümeyye Uçar, Dilek Kaan, Harun Ülger
	O-188: Biomechanical and histological effects of the modified Logan solution on muscles and tendons Orhan Beger, Meryem İlkay Karagül, Turan Koç, Gülden Kayan, Abdülkadir Cengiz, Şakir Necat Yılmaz, Zeliha Kurtoğlu Olgunus
13.15–14.15	**Yemek Arası / Lunch**

16.00–16.50	**Oral Presentations (O-189–O-192)** **Chairs:** Prof. Dr. İbrahim Tekdemir & Doç. Dr. Zeliha Fazlıoğulları
	O-189: Morphometric features of choanae: a preliminary study Cenk Murat Özer, Öznur Aktaş, Kerem Atalar, İlker Öz, Çağatay Büyükuysal, Çağatay Barut
	O-190: Micro-CT evaluation of the relationship between cochlea and carotid canal Ferhat Geneci, Bilge İpek Torun, Muhammet Bora Uzuner, Mert Ocak, Burak Bilecenoğlu, Simel Kendir, Nihal Apaydın
	O-191: Evaluation of surface marking of frontal sinus by three dimensional reconstruction method Gizem Nur Akbaş, Cenk Murat Özer, Kerem Atalar, Ayşe Zeynep Yılmazer Kayatekin, İlker Öz, Çağatay Büyükuysal
	O-192: Optic neuritis and thyroiditis thought to be triggered by human herpes virus type 6 Özge Arıcı Düz

31 Ağustos 2019, Cumartesi / Saturday, 31 August 2019

İbn-i Sînâ Salonu (Main Hall)

09.30–10.30	Developing an in-house medical 3D printing lab Prof. Dr. Juan R. Garcia
10.30–10.45	**Çay-Kahve Arası / Tea & Coffee Break**
10.45–11.45	**Panel** / Temporomandibular joint Prof. Dr. Çağrı Delilbaşı Prof. Dr. Mustafa Sancar Ataç Doç. Dr. Tuğrul Örmeci
11.45–12.00	**Çay-Kahve Arası / Tea & Coffee Break**
12.00	**Kapanış ve Ödül Töreni / Closing & Award Ceremony**

Poster Presentations

P-001: Investigation of effects of hyaluronic acid hydrogel on sciatic nerve injury by double immunofluorescence staining
Dağ İ, Koçman AE, Şengel T, Canbek M, Söztutar E

P-002: Effects of visual field changes on balance
Neder K, Cığalı BS

P-003: Morphometric examination of the joint surfaces of trochlea tali
Neder K, Taşkınalp O, Çıkmaz S

P-004: Estimation of spleen volume using stereological methods
Akkurt U

P-005: Morphometric examination of anatomical structures on humerus
Yılmaz S, Tokpınar A, Ateş Ş, Taştan M, Patat D, Ünalmış D

P-006: Analysis of thoracic curvature by photoanthropometric method in scoliosis patients
Bedre O, Gökmen F, Oztürk M, Süer O

P-007: Analysis of thoracolumbar curvature by photoanthropometric method in scoliosis patients
Bedre O, Gökmen F, Oztürk M, Süer O

P-008: Analysis of lumbar curvature by photoanthropometric method in scoliosis patients
Bedre O, Gökmen F, Öztürk M, Süer O

P-009: Analysis of double major curvature by photoanthropometric method in scoliosis patients
Bedre O, Gökmen F, Öztürk M, Süer O

P-010: Cochlear nerve aplasia: a case report
Özcan AG, Ünver Doğan N, Fazlıoğulları Z, Öztürk M, Solmaz E

P-011: Teaching brain anatomy using holographic images
Vatansever A, Demiryürek D, Özcan E

P-012: Calculation of hippocampus volume using volBrain in musicians and non-musicians
Karapınar BO, Kamaşak B, Acer N

P-013: Molecular identification of the effect of MK-801 and dexmedetomidine on spatial learning and memory
Barç ED, Akıllıoglu K, Yılmaz MB

P-014: Morphologic study on patella
Alkan E, Öz N, Karakoyun ZN, Süzen LB

P-015: The effect of the use of plastinates in anatomy education on undergraduate students' success levels
Aytaç G, Öğüt E, Gürçay S, Şekerci R, Sindel M, Oğuz N

P-016: Planning of treatment in a patient with radicular cyst in the mandible, using 3D model and its effect on treatment process
Koyuncu BÖ, Özer MA, Pınar Y, Gümüşel G, Koca H, Tadık F

P-017: Morphometry and classification of the hard palate
Şafak NK, Çevik Y, Yücel AH

P-018: A tendon variation of extensor digiti quinti propria and extensor carpi ulnaris
Öğüt E, Barut Ç

P-019: Drainage variation of right testicular vein: cadaveric study
Öğüt E, Barut Ç

P-020: The relationship of trochanter minor with arteria circumflexa femoris medialis
Süzen LB, Alkan E, Öz N, Karaali K

P-021: A case of bilateral brachial artery variation
Babacan S, Kandemir YB

P-022: Intraforaminal dural septations of the jugular foramen: a cadaveric study
Akdağ UB, Öğüt E, Barut Ç

P-023: Relationship between pre-segmental artery variation and kidney size
Sonkaya MM, Öğüt E, Barut Ç

P-024: Nomenclature of sella turcica
İnce R, Cihan ÖF, Bahşi İ, Yalçın ED

P-025: Two rare variations in the branching pattern of arcus aortae and their clinical significance
Keskin A, Açar G, Çiçekcibaşı AE, Koplay M

P-026: Investigation of sulcus sinus transversus and sulcus sinus sigmoideus variations
Uçar S, Al Ö, Nisari M, Ateş Ş, Taştan M, Sağıroğlu E, Ekinci HG, Ülger H

P-027: Right processus transversus shortness and joint surface in the first lumbal vertebra: case report
Ünalmış D, Patat D, Yılmaz S, Tokpınar A

P-028: Investigation of Alsberg and collodiafizer angles in femur
Sağıroğlu E, Uçar S, Al Ö, Nisari M, Ekinci HG, Ülger H

P-029: Natural lip morphometry among young adults
Esmer AF, Saka AK, Göksoylu G, Yılmaz İ, Topçuoğlu N, Tosun Ö, Utebey Ö, Yılmaz M

P-030: 3D reconstruction and morphometric evaluation of sternocleidomastoid muscle
Erdem H, Boyan N, Oğuz Ö

P-031: Patient-specific arteria lusoria models of as a life-threatening complication with aberrant right subclavian artery
Yaprak F, Özer MA, Gövsa F, Çinkooğlu A

P-032: Application of virtual three-dimensional simultaneous visualization of right aortic arch
Yaprak F, Özer MA, Gövsa F, Yağdı T

P-033: Morphometry of clavicle
Ekinci HG, Al Ö, Ateş Ş, Uçar S, Sağıroğlu E

P-034: Using 3D patient-specific models for aiding treatment decision in cases of dilatation of ascending aorta
Yaprak F, Özer MA, Boydak B, Gövsa F

P-035: Bilateral hyperplasia of C3 spinous process: case report
Işıklar S, Özdemir S, Parlak M

P-036: The use of 3D scanners in anthropometric measurements
Özdemir NU, Çini NT, Özdemir S, Arı İ

P-037: The role of anatomage, model and cadaver preparation in anatomy education
Gürbüz H, Tor EM, Örs OP, Aydoğan GS, Gayef A, Çıkmaz S

P-038: Morphologic typing of the superior orbital fissure of late Byzantine and present periods crania
Kaya BN, Uzabacı H, Özdemir S

P-039: How can we reduce formaldehyde exposure in anatomy laboratories?
Yazar İyigün K

P-040: Superficial arterial variations of upper extremity: case report
Uslu Aİ, Alpaslan AT, Uysal FK, Akkın SM

P-041: Pulmonary venous return anomaly: case reports
Yağmurkaya Ü, Poyraz N, Uysal İİ

P-042: Bilateral neck and upper extremity nerve variations: case report
Uslu Aİ, Alpaslan AT, Akkın SM

P-043: A rare variation of vena sacralis mediana: case report
Doğruyol G, Çimen K, Çimen M

P-044: A morphometric research of aorta abdominalis and its branches: an anatomical and radiological study
Kesmezacar FF, Kopuz C, Tutar O, Kınoğlu K, Kara E

P-045: Post-intubation tracheal stenosis: case reports
Taşpınar Ç, Poyraz N, Uysal İİ

P-046: Comparison of palmar crease lengths in normal and anencephalic fetuses
Akbaytürk N, Çan MA, Özyaşar AF, Uluutku MH

P-047: A talon cusp: five cases reports
Sesli N, Yıldız F, Peker İ

P-048: Am I looking in the mirror? A case of situs inversus totalis
Uysal İİ, Poyraz N, Açar G

P-049: Occipital artery and ascending pharyngeal artery variation: case report
Chatzioglou GN, Gayretli Ö, Sarı E, Öztürk A

P-050: Creating three dimensional dry bone model using photography
Çevik Y, Şafak NK, Yücel AH

P-051: Defining an effective zone of injections in piriformis muscle with reference to standard and reliable anatomical landmarks
Kibar S, Kendir S, Apaydın N, Yavuz F, Karahan ST

P-052: Morphometric study on sacrum
Öz N, Alkan E, Kılıç G, Süzen LB

P-053: The effects of C2–C3 fusion on the dimensions of the intervertebral and transverse foramen
Yılmaz M

P-054: A tendon variation of the first dorsal compartment
Barut Ç, Öğüt E

P-055: The variation of distal humerus: supratrochlear foramen and clinical implications
Ülkir M, Güneş BE

P-056: An anatomical view intended on closed interventions to the superior cervical ganglion
Kalender CZ, Koçer İK, Çelik S, Bilge O

P-057: Investigation of morphometric properties of nervus mentalis in newborns
Çorumlu U, Kopuz C, Aydar Y

P-058: A preliminary study on the morphology of the fovea capitis femoris
Sağlam L, Gayretli Ö, Coşkun O, Sarı E, Çandır B, Gürses İ

P-059: Morphometric evaluation of radial recurrent artery
Sağlam L, Gayretli Ö, Coşkun O, Gürses İ, Çandır B, Kale A, Öztürk A

P-060: Determination of the degree of spine curvature by 3D scanning method in patients with adolescent idiopathic scoliosis
Özsoy U, Yıldırım Y, Tombak K, Karaşin S, Yüksel İ

P-061: Evaluation of facial motion during smiling in the mouth and cheek region: a pilot study
Karaşin S, Yıldırım Y, Şekerci R, Özsoy U

P-062: Three-dimensional morphological analysis of mouth region during smiling
Yıldırım Y, Karaşin S, Özsoy U

P-063: Henry Gray's Anatomy
Coşkun Ö, Chatzioglou GN, Gürses İ, Gayretli Ö, Öztürk A

P-064: Today and Byzantine period skulls orbital index measurements
Uzabacı H, Özdemir ST, Kafa İM

P-065: Accessory muscle in the neck the cadaver
Akyol G, Önder M, Çetin M, Oğuz N

P-066: Medical student and trainee authored publications in anatomical education research studies
Çandır BN, Korkmaz FT, Gürses İA

P-067: Morphometric evaluation of anterior tibial artery
Çandır BN, Gayretli Ö, Gürses İA, Coşkun O, Sağlam L, Öztürk A, Kale AÖ

P-068: Tendon variations of fibularis brevis, fibularis tertius, extensor hallucis longus and extensor digitorum longus: case report
Ayazoğlu M, Yazar İyigün K, Ergen Ş, Öztürk K

P-069: Unusual multiple variations of upper limb arteries: case report
Çandır BN, Sağlam L, Gürses İA, Gayretli Ö

P-070: Prominent petrotympanic fissure in a patient with temporomandibular dysfunction
Karataş MS, Peker İ, Üçok CÖ

P-071: Effect of special study module of entrapment neuropathy on learning: experimental study
Hizay A, Şenol Y

P-072: Morphology of C2 vertebra lamina and its surgical importance
Güzelad Ö, Yıldırım FB

P-073: Piriform aperture, choana, nasal bone and zygomatic bone morphometry and these clinical importance: a preliminary study
Bozdağ ZK, Şafak NK, Pamukcu A, Yücel AH, Oğuz Ö

P-074: Estimation of maximum length of humerus from its segments' lengths
Mutluay ŞD, Açıkgöz AK, Bozkır MG

P-075: Morphometric analysis of acetabulum
Babacan S, Deniz M

P-076: Evaluation of the auricula morphology and estimating the appropriate ear shape
Babacan S, Çini NT, Işıklar S, Sak NG, Kafa İM, Gökalp G

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Babacan S, Deniz M

P-078: Variations of flexor digitorum superficialis, the accesory head of flexor digitorum profundus and Gantzer muscle: case report
Şanli OC, Dalkıran M, Canbaloğlu AE, Öztürk K

P-079: Biochemical and histological investigation of the effects of melatonin and vitamin C on damage to rat bulbus olfactory after chronic cellulose thinner inhalation
Önder M, Gümüşlü S, Genç GE, Gürer Eİ, Yolcular BO, Oğuz N

P-080: An investigation on the anatomy journals indexed in SCI and SCI-E
Karip B, Baştan E, Balcıoğlu HA

P-081: Morphological investigate of bulbus oculi on MR images
Yılmaz S, Tokpınar A, Şahin S, Yılmaz H, Ünalmış D, Patat D

P-082: A rare variation of humerus: supracondylar process
Ülkir M, Demiryürek M

P-083: Morphological examination of vertebral canal in lumbar region
Şahin SR, Yılmaz S, Tokpınar A, Taştan M

P-084: The effect of chitosan in the treatment of tendon
Şekerci R, Aydemir NA, Öğüt E, Kılıçaslan F, Çelik NK

P-085: Examination of facial convexity and concavity values with reference to porus acusticus externus
Çini NT, Babacan S, Sak NG, Işıklar S, Arı İ, Gökalp G

P-086: Clinical importance of the relation between the parietal foramen variations with sagittal sutura
Şafak NK, Bozdağ ZK, Pamukcu A, Yücel AH, Oğuz Ö

P-087: The terms called "Turk" in the literature
İnce R, Bahşi İ

P-088: Disease of the future: Alzheimer's and nervous system anatomical structures
Yücel N, Huyut BÇ, Özmen A, Şeker M

P-089: Anatomical structures of nervous system associated with depression
Yücel N, Huyut BÇ, Özmen A, Şeker M

P-090: Important landmarks in fossa cranii media surgery
Özşahin E, Erdem H, Boyan N, Oğuz Ö

P-091: Morphometric evaluation of the face: proximity to the golden ratio
Çini NT, Özdemir S

P-092: Branch variations of renal artery: case report
Yücel N, Keleş A, Kadıyoran C, Güler MA, Haşimoğlu R, Düz ME

P-093: Anatomy and morphometry of the hypoglossal canal
Aksu F, Karabekir S, Şenkul E, Karabekir NG

P-094: Investigation of the relationship between the upper extremity composition and functions in individuals with different hand preference
Keskin N, Özer CM, Büyükuysal MÇ, Barut Ç

P-095: Duodenum histometry in experimental diabetes-induced rats and effects of melatonin
İpek ED, Başaloğlu H

P-096: Assessment of the confusion in determining the level of conus medullaris
Kalindemirtaş M, Orhan M, Bahşi İ, Bahşi A

P-097: Evaluation of lumbar intervertebral discs by magnetic resonance imaging: a retrospective study
Şenol RGT, Kılıç Şafak N, Tepecik S, Yücel AH

P-098: Anthropometric evaluation of MS patients
Muhtaroğlu M, Fahrioğlu SL, Acay O, İlgi S

P-099: Three-dimensional evaluation of facial expressions
Özsoy U, Karaşin S, Yıldırım Y, Şekerci R

P-100: Double renal artery: case report
Düz ME, Keleş A, Yücel N, Kadıyoran C, Şeker M

P-101: Absence of incisura scapulae: case report
Akdoğan S, Kadıyoran C, Kabakçı ADA, Öztekin HC, Yılmaz MT

P-102: An investigation on the anatomical journals not indexed in SCI and SCI-E
Köse ÖÖ, Demir A, Kibar C, Balcıoğlu HA

P-103: Ossification of the superior transverse scapular ligament
Öztekin HC, Kantar HN, Akın Saygın D, Kadıyoran C, Yılmaz MT

P-104: Variations of inferior phrenic artery: case report
Yıldız Z, Güler MA, Akdoğan S, Kantar HN, Kadıyoran C, Şeker M

P-105: Branch variations of coeliac trunk
Keleş A, Kadıyoran C, Yıldız Z, Öztekin HC, Yılmaz MT

P-106: Bilateral high origin of the radial artery: case report
Erdoğan K, Özen KE, Yarar B, Çizmeci G, Keselik GA, Malas MA

P-107: Common trunk of the dorsal scapular artery and the suprascapular artery originated from the subclavian artery: case report
Babacan S, Deniz M

P-108: Possible effects of caffeic acid phenethyl ester and thymoquinone against toluene brain injury
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P-109: Investigation of the subthalamic nucleus with ultra-high magnetic resonance imaging
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P-110: Morphometric analysis of the external ear in young adult populations individuals in Turkey
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P-111: A case of hyperosteosis frontalis interna in a male cadaver
Yaprak F, Kaygın E, Oltulu F, Gülcan M, Pınar Y

P-112: Investigation of morphological and biomechanical properties of scapula for shoulder joint
Çini NT, Güner Sak N, Babacan S, Arı İ

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P-114: Relationship between left anterior cerebral artery (ACA) infarction and apathy: neuroanatomical / functional correlation
Fındık K, Hanoğlu L

P-115: A case of isolated vestibular cystic dilation
Pirinç B, Batur A, Ünver Doğan N, Fazlıoğulları Z, Tatar MC

P-116: A case of Klippel-Feil syndrome
Fazlıoğuları Z, Batur A, Solmaz E, Özcan AG, Tatar MC

P-117: Congenital lobar hyperinflation: a case report
Tatar MC, Karabulut AK, Öztürk M, Pirinç B, Ünver Doğan N

P-118: A rare case: bilateral atresia of external acoustic meatus
Solmaz E, Öztürk M, Fazlıoğulları Z, Sevindik B, Ünver Doğan N

P-119: Os trigonum syndrome: findings of MRI and DR
Gürlek Çelik N, Öztürk M, Karabulut AK, Fazlıoğulları Z, Ünver Doğan N

P-120: Nutcracker syndrome; case report
Sevindik B, Fazlıoğulları Z, Ünver Doğan N, Öztürk M, Özcan AG

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Keynote Speakers

(K-1 — K-4)

K-1

Facial prosthetics in an age of advanced 3D technologies

Garcia JR

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Facial prosthetic devices have been used for many centuries to provide a renewed sense of normalcy to individuals suffering from disfigurement due to traumatic circumstances or congenital differences. As a result of modern surgical techniques, physicians are presently able to save the lives of countless of patients who might otherwise succumb to injuries or cancerous growths affecting the facial region. However, due to limitations of modern reconstruction techniques a new stronger wave of patients requiring facial prosthetic interventions has been created. Recreating functional aspects of missing facial anatomy is central to the activity, as is the important aspect of achieving appropriate cosmesis to enable patients to return to activities of daily living. Given the clinical, anatomical, artistic, and technical knowledge base required, this role has fallen into the hands of artisans, technicians, physicians, and more recently into the defined role of a medical professional called the clinical anaplastologist. Methods and materials for producing these devices have changed over time, but most devices are currently made of a combination of acrylic and silicone using a range of conventional and digital workflows. Until recently, much of the workflow has involved conventional techniques used in dentistry with defined stages of sculpting, moldmaking, casting and external coloration. Given advanced digital technologies capable of creating 3D models and physical reproductions through 3D printing, newer digital workflows are increasingly relevant in accomplishing tasks associated with this activity. This presentation will focus on current workflows associated with making facial prosthetic devices as well as offer insights on how may be influenced in the future through the advent of advanced 3D technologies, 3D bioprinting, facial transplantation, and other areas of medical progress.

K-2

The cellular, molecular, and anatomical bases of chronic pain

Ambron RT

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Chronic pain is a major world-wide problem and is especially acute in the US where millions who suffer from such pain can only obtain relief by using analgesics containing opiates. This has resulted in an epidemic of addiction and drug overdoses. Consequently, there is a great need to develop a drug that targets an essential component in the pain pathway, but does not cause undesirable side effects. Identifying such a target requires knowledge of traditional anatomy, neuro-anatomy, and cell and molecular neurobiology. To date most of the efforts to identify such a molecular target has focused on components at the synapse between 1st and 2nd order nociceptive neurons in the dorsal horn of the spinal cord. This is problematic because of the complexity of the CNS and the need for the drug to pass the blood-brain barrier. In contrast, we have shown that 1st order nociceptive neurons activated in response to an injury or

inflammation undergo a phenotypic change that results in a long term hyper-excitability (LTH). The LTH increases the sensitivity of the response to the lesion and therefore enhances inputs to the CNS that are perceived as pain. Because the LTH results from a change in phenotype, it can theoretically last indefinitely. Moreover, the 1st order neurons are located in the periphery and are readily accessible to drugs. Interestingly, we found that the LTH requires the activation of Protein kinase G (PKG) at the site of the lesion and its retrograde transport back to the cell bodies of the affected neurons in dorsal root ganglia. These studies strongly indicate that PKG is a "molecular switch" for pain and would be an excellent target for a drug to treat pain. We therefore used molecular modeling to identify sites on PKG that were unique among members of this kinase family and were able to design and synthesize a highly specific PKG inhibitor that effectively alleviated thermal hyperalgesia and the pain of osteoarthritis in animal models. Since LTH is associated with many chronic pain conditions, we believe that this is a promising start in the development of non-opiate analgesics.

K-3

Pancreas: the secrets of a hidden organ

Ömer A

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The pancreas has been a great mystery for physicians and scientist throughout the history. Although there was no significant findings about the anatomy and functions of the pancreas until the beginning of 20th century, pancreas related recent research has been awarded three times with Nobel Prize making the pancreas the only organ unique for this prestigious award. Since the diabetes mellitus is an important disease of the pancreatic islets with ''an epidemic prevalence in the modern community'', pancreatic islets have been the greatest interest for scientists during the last 50 years. As a result of great efforts to search for a cure for diabetes, pancreas as a whole organ and pancreatic islets have been used for transplantation to cure type 1 diabetes with significant success in the clinic. The recent research also provided many more options for treatment of type 2 diabetes, making the treatment of this disease more successful. We have also learned many fascinating aspects of pancreas including but not limited to the regulation of blood glucose, microvasculature of pancreatic islets and pancreatic development as the result of the research.

K-4

Developing an in-house medical 3D printing lab

Garcia JR

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Medical 3D printing facilities are being rapidly incorporated into many leading hospitals in the United States. As early as 2003, the Johns Hopkins Hospital began developing in-house capabilities to produce digital models that could be 3D printed from DICOM medical imaging, 3D scanning, 3D modeling, and 3D sculpting. Several elements are needed to create a robust 3D printing facility: dedicated space, computer workstations, DICOM data, image segmentation software, 3D scanning, CAD software, 3D mesh manipulation software, 3D printing preparation/slicing software, a 3D printer, and print post-processing equipment. Each of these elements requires several choices to be made. Personnel should possess a wide range of skills needed to perform the associated activities, including technical and administrative functions. This presentation will explain the progression of development for the 3D Printing and Visualization Lab at the Carnegie Center for Surgical Innovation at the Johns Hopkins Hospital. Each element of the lab will be discussed showing a variety of options available to meet the function. Several examples of 3D printed projects produced by the lab will be shown including: anatomical prints for surgical planning, surgical simulation, device development, patient education and prosthetic applications.

Invited Lectures

(I-01 — I-20)

I-01

Panel - Why do we need anatomy and basic medical sciences?

Aydın S[1], Karacaoğlan N[2], Ömer A[3], Uçkan S[4], Öztürk R[5], Akalan N[6], Öncel M[7], Bayazıt AY[8], Bülbül AM[9], Erol C[10]

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I-02

New techniques in neuronal imaging

Hanoğlu L[1], Şengül G[2], Ulupınar E[3]

[1]Department of Neurology, Istanbul Medipol University School of Medicine, Istanbul, Turkey; [2]Department of Anatomy, School of Medicine, Ege University, Izmir, Turkey; 3Department of Anatomy, School of Medicine, Eskişehir Osmangazi University, Eskişehir, Turkey

I-03

Arterial circulation and aneurysm of the brain

Uğur HÇ

Department of Neurosurgery, School of Medicine, Ankara University, Ankara, Turkey

I-04

Surgical anatomy of paranasal sinuses

Önerci M

Department of Otorhinolaryngology, School of Medicine, Hacettepe University, Ankara, Turkey

I-05

Surgical anatomy of the liver

Demirci S

Department of General Surgery, School of Medicine, Ankara University, Ankara, Turkey

I-06

Radiological imaging of lung interstitium: is it possible to diagnose without knowing the anatomy of the secondary pulmonary lobule?

Erol C

Department of Radiology, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

I-07

Anatomical corridors in surgical approach to infratentorial tumors

Akalan N

Head of Department of Neurosurgery, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

I-08

Science in the Islamic world: is something wrong?

Karabulut AK

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

I-09

Tissue clearing

Keleştemur T

Department of Physiology, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

I-10

Breast anatomy through the eye of a plastic surgeon

Karacaoğlan N

Department of Plastic and Reconstructive Surgery, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

I-11

Surgical anatomy of pituitary gland pathologies in endonasal and trans-sphenoidal approach

Şekerci Z

Department of Neurosurgery, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

I-12

Shoulder arthroscopy portals and incisions

Demirtaş M

Department of Orthopedics and Traumatology, School of Medicine, Ankara University, Istanbul, Turkey

I-13

Hand and wrist arthroscopy portals and incisions

Öztürk K

Department of Orthopedics and Traumatology, University of Health Sciences, Istanbul, Turkey

I-14

Elbow arthroscopy portals and incisions

Kara A

Department of Orthopedics and Traumatology, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

I-15

Evaluation of larynx anatomy for sound formation

Koçak İ

Department of Otorhinolaryngology, School of Medicine, Okan University, Istanbul, Turkey

I-16

Clinical anatomy of the colorectal region from the anatomist, surgeon and radiologist window

Öncel M

Department of General Surgery, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

I-17

Surgical anatomy of trachea

Güngör A

Department of Thoracic Surgery, School of Medicine, Ankara University Ankara, Turkey

I-18

MRI of brain association pathways

Cila A

Department of Radiology, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

I-19

A complex and difficult joint: shoulder

Kuyucu E

Department of Orthopedics and Traumatology, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

I-20

Panel - Temporomandibular joint

Delilbaşı Ç[1], Ataç MS[2], Örmeci T[3]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, Istanbul Medipol University, Istanbul, Turkey; [2]Department of Oral and Maxillofacial Surgery, School of Dentistry, Gazi University, Ankara, Turkey; [3]Department of Radiology, School of Medicine, Istanbul Medipol University, Istanbul, Turkey

Oral Presentations

(O-001 — O-193)

O-001

Effect of vitamin D on axonal regeneration after the epineural devascularization of sciatic nerve

Erdem H[1], Sarıkcıoğlu L[2], Boyan N[1], Oğuz Ö[1]

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Objective: In this study it was aimed to investigate the effect of vitamin D3 after epineural devascularization of sciatic nerve.

Methods: Forty (40) adult (~200–250 gr), female, Wistar rats were used and randomized into 4 main groups: Group 1 (Control), Group 2 (Sham), Group 3 (Epineural devascularization + vitamin D3), Group 4 (Epineural devascularization). In Group 1, normal morphological and physiological characteristics of sciatic nerve was evaluated. In Group 2, sciatic nerve and its 3 branches were exposed. In Group 3, epineural devascularization was performed on sciatic nerve and vitamin D3 was administered (500 IU/kg/day). In Group 4, only the epineural devascularization procedure was performed. Nerve regeneration was evaluated by functional (sciatic functional index, pinch test and biochemical analyses) and morphological (electron microscopic analysis and wet muscle weight) techniques.

Results: At the end of the 4th postoperative week, vitamin D3 administration was found to have a significant effect on functional analysis data and wet muscle weight values between Group 3 and Group 4 ($p<0.05$). In electron microscopic analysis, there were more myelin residues in group without vitamin D3 treatment (Group 4); on the other hand in vitamin D3 treated group (Group 3) numerous remyelinized nerve fibres with thin myelin sheats were observed. Those remyelinized nerve fibres have thicker and better form compared to Group 4.

Conclusion: In this study it was showed that vitamin D3 is an effective neuroregenerative agent in ischemic peripheral nerve injuries.

Keywords: epineural devascularization, peripheral nerve injury, sciatic nerve, vasa nervorum, vitamin D

O-002

The role of N, N-dimethyltryptamine on neurite outgrowth in primary hippocampal neurons

Ozansoy MB

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Objective: N,N-dimethyltryptamine (DMT), is a hallucinogen synttissues in the body. The majority of research has been focused on the psychoactive effects of DMT, its physiological role in the central nervous system is still unknown. DMT is known as an endogenous ligand of the Sigma-1 receptor (Sig-1R), which plays an important role in neurite outgrowth, intracellular calcium balance and viability. The aim of this study is to investigate the effects of DMT in neurite outgrowth and to search the role of Sig-1R and inositol 1,4,5-trisphosphate receptor (IP3-R) in this process.

Methods: Primary hippocampal neurons, isolated from neonatal BalbC (n=20) mice hippocampal tissues was used. The presence of Sig-1R was investigated by western blotting and immnunocytochemistry. Hippocampal neurons were treated with DMT (10 µM, 100 µM) upon plating. Sig-1R antagonist NE100 (10 µM) and IP3-R antagonist Xestospongin C (1 µM) were added to culture before DMT to provide antagonistic effect. Neurites were labeled immnuocytochemically by using beta III tubulin antibody and imaging was made on confocal microscopy. The percentage of neurite containing neurons was calculated from microscopy images. Data were statistically evaluated by one-way ANOVA test.

Results: DMT at 10 µM increased neurite outgrowth in hippocampal neurons significantly ($p<0.05$). On the other hand, applications of Sig-1R and IP3-R antagonists decreased the DMT induced neurite outgrowth ($p<0.001$).

Conclusion: Our findings showed for the first time that DMT induces neurite outgrowth through Sig-1R regulating Ca+2 transport between ER and mitochondria. The present work was supported by the Research Fund of Istanbul University. Project No. 21989

Keywords: hippocampal neurons, neurite outgrowth, N, N-dimethyltryptamine, sigma-1 receptor

O-003

Investigation of hippocampus volumes in diabetic patients

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Objective: The relationship between diabetes and hippocampus atrophy has not been fully elucidated. For these reasons, our study was designed to investigate the relationship between diabetes mellitus (DM) and hippocampus volumes.

Methods: The study group consisted of 16 adults (DM+) who were diagnosed with type 2 diabetes mellitus and 16 adults (8 females–8 males) who were non-DM patients (DM). The cases were selected according to the DM+ so that the average age groups would be similar. Obtained MR images were assessed by the Materialize Mimics Innovation Suite ™ software provided within the scope of the Scientific Research Project (PN:17Ö0230001) in the Department of Anatomy. The intracranial and hippocampal areas were manually segmented. Then, each hippocampus (HV) and intracranial volume (ICV) were modeled as 3D. Volume measurements and intracranial volume ratios (HVr / ICV, HVl / ICV) of hippocampus were compared between the groups.

Results: Significant differences were found between the right hippocampus volume, HVr / ICV and HHl / ICV ratios between DM + and DM- groups in the statistical analyzes performed. There was no difference between the groups in terms of age and ICV.

Conclusion: In conclusion, our study clearly showed that type 2 DM adversely affects the hippocampus both on the right and left side. Thus, type 2 DM can be considered as a contributing factor for hippocampal atrophy. Therefore, it can be said that it is necessary to follow the diabetic population in terms of hippocampus related diseases.

Keywords: hippocampus, intracranial, volume measurement, volumetric analysis, diabetes, 3D modeling

O-004

Examination of anatomical variations of vascular drainage of sinus petrosus inferior

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Objective: The sinus petrosus inferior (SPI) drains the sinus cavernosus into the vena jugularis interna. SPI is an important component of the cerebral venous system which has effects in the diagnosis and treatment of various diseases such as dural arteriovenous anomaly, carotid cavernous fistulas, and Cushing's disease. SPI anatomy, variations, and interaction with surrounding structures vary greatly. Having sufficient knowledge about the anatomy of SPI to prevent possible complications is very important in neurosurgery, ear-nose-throat and neurological applications. The aim of this study was to identify the variations of SPI from the images obtained by SPI venography and to evaluate their variations by examining their anatomy and their association pattern.

Methods: SPI venography samples of 26 patients performed by Akdeniz University School of Medicine Department of Radiology between January 2014 and April 2019 were used. Anatomic variations of SPI have been studied in these patients.

Results: Six different types of SPI drainage patterns were observed in our study. These, Type A; draining into bulbus jugulare after communication with sinüs sigmoideus, Type B; draining into vena jugularis interna (VJI) at the level of exterior opening of canalis nervi hypoglossi, Type C; draining into VJI as an extracranial, TypeD; as a multiple junctions draining into VJI in the level of the foramen jugulare, Type E; directly draining into plexus venosus vertebralis externus, TypeF; SPI being absent.

Conclusion: Although anatomic variations of SPI are frequently observed, the examination and identification of their relationship with other sinuses will guide surgeons and interventional radiologists in patients who will undergo SPI sampling in the preoperative evaluation and prevention of complications.

Keywords: sinus petrosus inferior, variation, venography

O-005

Investigation of relation between basal ganglion volumes and reaction times in elite athletes

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Objective: Basal ganglia are important structures at motor motional control. In this study we aimed to reveal possible auido and visual reaction times relation with basal ganglia by using volumetric stereological analysis related with basal ganglia, which designed for pathological situation that the main motor motional cyclus disorders, at a speedy reaction time group of elite sportsman comparing with sedanters.

Methods: Right handed elite 19 sportsman whom 19–25 years old and right handed sedate 20 person whom 18–28 years old two groups partake to our study. Visual and auditory reaction times, stereological basal ganglia volumetry were evaluated for both groups.

Results: The mean of the visual reaction time found higher then auditory reaction time in sportive group. The left basal ganglia volumetry found higher then the right side in both of the study and control group. Auditory reaction time was significantly decreased in elite sportsman compared to sedate cases.

Conclusion: We decide our study satisfy morphometric clinical data to literature.

Keywords: basal ganglia, elit athlets, reaction times, morphometry.

O-006

The morphometric analysis of surface structures of sacral bone as a landmark and its importance in clinical aspect

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Objective: The aim of this study is to evaluate the sacrum bone with clinic by using morphometric measurements.

Methods: The measurements were performed on 31 sacrum bone samples from the collection of Anatomy Department of Ondokuz Mayıs University School of Medicine by using digital caliper with the sensitivity of 0.01 millimeter (mm). In the lack of age and gender discrimination, we can not correlate the measurement values with gender and age. Some parameters could not be evaluated on 2 sacrum due to lumbarization and sacralization anomaly. In this study; sacral hiatus length, distance between sacral hornes, sacral canal width, sacrum height, sacrum width, median sacral crest length were evaluated. Mean values and standard deviation values of the obtained data were calculated.

Results: According to the data obtained from the study; the mean length of sacral hiatus was18.08±8.55 mm; distance between sacral hornes is 17.79±3.62 mm; width of sacral canal was 30.09±3.96 mm; the height of the sacrum is 103.89±11.15 mm, the width of the sacrum is 109.47±5.42 mm; median sacral crest length was determined as 70.28±14.29 mm.

Conclusion: The knowledge of morphometry of sacrum is very important for clinic. The morphometry of sacral hiatus has a great importance in the epidural caudal anesthesia. We believe that our study will be helpful to reduce the complications that may occur during clinical procedures.

Keywords: sacrum, morphometry, sacral hiatus

O-007

Morphometric examination of calcaneus in Turkish population

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Objective: Calcaneus is the longest and largest of tarsal bones. It is one of the most commonly fractured tarsal bones. Bone is affected by a wide spectrum of diseases and it is important to know the morphometric properties for treatment. The aim of this study was to determine the morphometric features of the calcaneus in Turkish population.

Methods: Sixteen morphometric measurements of 112 dry calcaneus (43 left, 69 right) with unknown age and sex characteristics were measured with goniometer and digital caliper at Hacettepe University School of Medicine, Department of Anatomy. In addition, bones were classified according to their articular structures based on the classifications in the literature.

Results: Morphometric values obtained from the measurements were evaluated in accordance with the literature. Statistical analysis revealed a significant difference between right and left calcaneus in terms of minimum height (MINH), minimum transverse width (MINW), Gissane angle (GA) and dorsal articular facet length (DAFL) ($p<0.05$). In addition, there was a strong positive correlation between calcaneal compression angle (CCA) with MINH, maximum height (MAXH), maximum transverse width (MAXW) and Böhler angle (BA) ($r \sim 0.35$) Also a strong negative correlation was found between the Philip-Fowler angle (PFA) with CCA and BA ($r\sim-0.39$). The most common calcaneus was Type B (67.8%) according to the classification based on the joint structures.

Conclusion: Morphometric features of calcaneus that are affected by many diseases such as talocalcaneal arthritis, intraarticular fracture, congenital deformities, flatfoot, valgus and Haglund's deformities will guide the treatment process and surgical procedures.

Keywords: calcaneus, facet, anatomy, Turkey

O-008

The relationship between 2/4 finger ratio of medical students and their success in anatomy practice education

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Objective: The aim of this study was to determine the relationship between the length of 2nd and 4th finger lengths of Medical Faculty students and the grades obtained from the Anatomy practical exams.

Methods: The study was carried out with 106 (53 female and 53 male) students in the 2nd class of Balıkesir University School of Medicine. The lengths of the right and left hand index fingers (2P) and ring fingers (4P) of the students were measured with digital caliper. Anatomy practical exam results of the students who participated in the study were recorded during the year. The data were analyzed and interpreted using SPSS 22.0 package program.

Results: The mean age of female students was 20.42±1.18 years and 20.72±1.35 years for male students. When the average of the anatomy practice exam results are examined, it is determined that female students are 27.64±9.87 and male students are 29.83±8.24. The difference between the male and female students' Anatomy practice exam results was statistically significant ($p<0.05$). As a result of correlation analysis; No statistically significant correlation was found between 2P / 4P ratio of female and male students and Anatomy practice exam results ($p>0.05$).

Conclusion: In our study, it was found that female students were more successful in anatomy practice education than male

students. However, there was no relationship between finger length ratio. We believe that our study will shed light on other studies in this field.

Keywords: medical faculty students, 2/4 finger length ratio, anatomy practical education

O-009

Anatomical evaluation of zygomaticus major muscle with relation to orbicularis oculi muscle and parotid duct

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Objective: To evaluate morphology of zygomaticus major muscle (ZM) and demonstrate the relations with orbicularis oculi (OO) and parotid duct (PD) for facial aesthetic and reconstructive surgeries.

Methods: Eleven formalin fixed adult cadavers (6 males and 5 females) aged between 45–92 years were dissected to reveal ZM, OO, PD. Following parameters were evaluated: Shape, dimensions and thickness of ZM, Positional relation of ZM with OO and PD (overlap, neighboring, distant), Length of vertical line between lateral canthus; upper margin of ZM, lower margin of ZM, and lower margin of OO.

Results: Shape of ZM was cylindrical in 9/21, bent in 5/21, fan in 4/21 and bifid in 3/21 sides. Its upper margin length was 48.05±5.37 mm, its lower margin length was 55.52±4.33 mm. Its lateral margin length was 6.99±1.75 mm, its medial margin length was 11.87±3.38 mm and its thickness was 2.58±1.02 mm. Position of ZM with OO was overlaping in 8/21, neighboring in 8/21, distant in 5/21 sides. Position of ZM with PD was overlaping in 9/21, neighboring in 2/21, and distant in 10/21 sides. Lengths of vertical line between lateral canthus and upper margin of ZM, lower margin of ZM and lower margin of OO were 37.54±6.12 mm, 46.59±7.08 mm and 33.90± 6.39 mm, respectively.

Conclusion: The ZM is fundamental for smiling as being the most important mimic muscle in expressing joy and happiness. According to our results, anatomical relationships of ZM can be redefined for safe interventions.

Keywords: orbicularis oculi muscle, parotid duct, topography, zygomaticus major muscle

O-010

Morphometric evaluation of the relationship between masseteric nerve and masseteric artery with masseter muscle, and its clinical importance

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Objective: The masseter muscle, one of the masticatory muscles, becomes hypertrophied in cases such as sleep bruxism and unilateral mastication. Jaw joint problems are also added to this clinical situation where the bigonional distance increases and lower face asymmetry develops. Inhibition of masseter hypertrophy is achieved by Botulinum toxin-A injections. For reducing possible complications in injection treatment positional relationship of masseteric nerve with the muscle needs to be determined. The aim of this study is to determine the location of masseteric nerve and artery that originates from fossa infratemporalis and passes through incisura mandibularis into masseter muscle with x and y coordinates.

Methods: In Ege University School of Medicine, Department of Anatomy 10 male and 10 female human faces were fixed with 10% formalin solution and their arteries were filled with red epoxy resin bilaterally. The masseter muscle was excluded from the posterior edge. Biostatistics analysis was performed by statistical analysis software (SPSS Version 25).

Results: N. massetericus was found to be 5.05±3.3 mm from line on the x axis and 25.8 ±5.8 mm, respectively from the line on the y axis. A. masseterica was found to be 7.5±3.2 mm from the line on the x-axis and 24.1±5.6 mm from the line on the y-axis.

Conclusion: It is emphasized that the artery and nerve entering the muscle is located approximately 0.5 cm inferior to the arcus zygomaticus and 2.5 cm anterior to the tragus, and the artery and nerve are in close proximity to each other.

Keywords: masseteric artery, masseteric nerve, masseter muscle

O-011

Morphometric features, localization and shape types of fovea capitis femoris

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Objective: The aim of this study was to investigate the morphometric properties of the fovea capitis femoris (FCF) and its localization on the femoral head, the shape types and the relationship with other femur parameters.

Methods: This study was performed on 146 dry femora (60 right, 86 left). Morphological and morphometric properties were evaluated on dry bones and digital images of these bones. The measurement of the parameters was performed directly with the caliper and using the ImageJ program on digital images.

Results: The most common localization type was "Type 2 localization" and the shape type was "oval type". FCF sizes [except FCF depth (DFCF)] were found to be smaller in Type 1 localization. The femoral neck shaft angle (NSA) was found to be greater in the triangular type than the round (circular) type in the left side and in all cases (right + left). The vertical diameter of femoral head (FHD-V), anteroposterior diameter of femoral head (FHD-AP) and area of femoral head (AREA-

HOF) values were greater in triangular types than oval types in all cases. There was no relation between the localization types and shape types of FCF.

Conclusion: As a result, morphometric properties, localization and shape types of FCF were related with some femoral parameters. We belive that we have contributed to the orthopedic and radiological applications, biological and anthropological sciences (physical anthropology, ethnology, etc.) with the findings obtained in our study.

Keywords: fovea capitis femoris, localization, shape, type

O-012

Morphological and morphometric evaluation of proximal and distal femur

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Objective: The purpose of this study was to determine the surgical measurements of the right and left distal and proximal femur.

Methods: In our study, we used 44 femurs (25 right, 19 left) without making any gender discrimination in the Anatomy Laboratory of Erciyes University School of Medicine. Caput femoris diameter, collum femoris length (anterior, posterior, superior, inferior), collum femoris axis length, inclination angle and alsberg angle of the proximal femur. In the distal femur, anteroposterior distance of the condylus medialis and lateralis, anteroposterior distance of the interconyler, total mediolateral width and notch width were measured. Milimetric caliper and goniometer were used for measurements. These data were then analyzed statistically.

Results: The length of the caput femoris of the proximal femur is 51.45 mm maximum, 37.61 mm minimum, collum femoris axis length maximum 38,41 mm, minimum 20.42 mm and linea intertrochanterica length maximum 107,83 mm, minimum 79.11 mm was calculated. The distal femur anteroposterior distance of conylus medialis maximum 65.87 mm, minimum 42.25 mm, the maximum anteroposterior distance of condylus lateralis maximum 69.55 mm, minimum 54.14 mm, maximum notch distance 22.35 mm, minimum 10.63 mm.

Conclusion: We think that the values abtained in our study will help in the surgical operations related to the hip and knee.

Keywords: anatomy, femur, morphometry

O-013

Anatomy and clinical importance of the suprascapular nerve

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Objective: The aim of this study is to evaluate the relationship between anatomical structures causing suprascapular nerve entrapment and neighboring structures and to emphasize the clinical importance of this relationship.

Methods: Twenty-four adult cadaveric upper extremity shoulder regions, which were included in the cadaver collection of Dokuz Eylül University Anatomy Department, were dissected according to anatomy dissection rules. The suprascapular nerve was monitored in the supraspinous fossa and infraspinous fossa. Their distance from the surrounding anatomical structures was measured. The descriptive statistics of the measurements and the difference between the right and left sides were evaluated using Mann-Whitney U Test.

Results: The mean length and width of superior transverse scapular ligament and suprascapular notch depth were 14.31 mm, 4.71 mm and 13.70 mm, respectively. The distance of the nerve to the anterolateral end of acromion was 66.42 mm; The mean distance to the anteromedial tip of the acromion was 48.17 mm and the mean distance to the posterolateral end of the coracoid process was 46.71 mm. The distance of the suprascapular nerve in the spinoglenoid notch to the vertical lines passing through the anterior end of the acromion and the posteromedial onset is approximately 60.29 mm and 16.75 mm. The mean depth of the nerve in the notch is 32.39 mm. There was no statistically significant difference between all measurements.

Conclusion: We think that the detailed topographic anatomy of the suprascapular nerve passing through the osteofibrous canals and its relationship with the surrounding anatomical structures will contribute to safe surgical dissection inthis anatomical region.

Keywords: suprascapular nerve, shoulder, anatomy

O-014

Placement and morphology of asterion and pterion in adult dry skulls

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Objective: There are important markers used in clinical sciences during examination or interventional procedures. Asterion and pterion are important reference points used in many surgical branches such as neurosurgery and otolaryngology. The aim of this study is to investigate the morphological structure and location of these marker points.

Methods: In this study, intact dry bone craniums belonging to 20 adults with unknown age and sex. 5 calvaria removed dry bone craniums were evaluated in bone collection in Pamukkale University School of Medicine Department of Anatomy Laboratory. In this study were measured the closest and farthest distance between asterion and pterion; distances between asterion and other important anatomical structures (inions, processus mastoideus, meatus acusticus externus, processus

zygomaticus); distances between pterion and other important anatomical structures (processus mastoideus, meatus acusticus externus, processus zygomaticus); distances between right and left pterions and distances between right and left asterions. Measurements were performed using 0.01 mm precision digital caliper and 1 mm precision tape measure.

Results: The findings obtained from the measurements were recorded and their statistical analyzes were performed. The difference between the right and left measurements was evaluated using student's t test.

Conclusion: This study is a preliminary study and will be expanded by increasing the bone count. When our findings are reported, it will be a guide for surgeons performing interventional procedures especially in this region.

Keywords: asterion, pterion, cranium

O-015

Fissura horizontalis variation: a case presentation and literature review

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Objective: The importance of CT to detect anatomical variations in lung before thoracotomy Variation was found during routine dissection study in Pamukkale Medical Anatomy Department laboratory

Methods: During dissection of a 60-year-old male cadaver, variations of the lungs were detected.

Results: In the right lung, the fissura horizontalis was found as scar on the facies sternocostalis but didn't go deeper. In addition, fissura horizontalis was detected in the left lung that divides the lung into three lobes. Fissure caused left lung to be divided into lobes from the anterior face, but this separation didn't take place completely; ie, the left lung is seen with two lobes from posterior face. The second most common variation was the presence of horizontal fissure in the left lung. Another variation, the absence of fissura horizontalis in the right lung is 21% and incomplete is 67%. In 1997, Craig and Walker et al. proposed system for the classification of variational fissures. According to this classification, superficial fissura horizontalis in right lung was Grade 3 whereas variant fissure in left lung was Grade 2. In this study, when cadaver's before death CT images examined, variant fissure in left lung was clearly seen. This shows how important it is to perform radiological examinations in order to detect possible preoperative variations.

Conclusion: It should be remembered that pulmonary fissure variations are common. It should be considered that number of lobes may change after variations and operation's plan such as lobectomy will change accordingly. Radiological examinations should be performed to detect these variations.

Keywords: fissura, lung, thoracotomy, variation

O-016

Clinical importance of medial patellofemoral ligament, anterolateral ligament and posterior oblique ligament: a cadaver study

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Medial patellofemoral ligament (MPFL); MPFL starts at the adductor tubercle of the femur and proceeds as a wide band towards the supero-medial of the patella. It is primarily responsible for the primary stabilization of the patella that remains in the patellar surface, especially at extension and at the beginning of flexion. MPFL is a frequently injured ligament in acute patella dislocations. Anterolateral ligament (ALL); distal femur, lateral epicondyle periphery, more anterior to the lateral collateral ligament, the periphery of the Gerdy tubercle attaches to the tibia It is thought to play a role in rotational stability of the knee and it is thought that rotational stability is decreased in pathology. It is thought that rotational stability is decrease in damage. Posterior oblique ligament (POL is seen as a facial enlargement on the distal side of the semimembranosus tendon. It is a ligamentous structure that prevents posterior translation of the tibia. For combined injuries of postero-medial and posterior cruciate ligament, POL should be checked and repaired if necessary. It is thought that there is a decrease in the stability of posterior tibial translation of the knee in POL injuries. Since these ligaments, which are not included in Nomina Anatomica, will change the delicate load balances on the joint in the presence of pathology, the joint cannot withstand this situation sufficiently and the degenerative process begins. Therefore, the anatomy of the ligaments forming the knee joint should be well known and pathologies should be clearly identified.

Keywords: medial patellofemoral ligament, anterolateral ligament, posterior oblique ligament

O-017

Determining the nerve entry points and the innervation features of semispinalis capitis muscle

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Objective: By measuring nerve entry points and determining innervation properties of semispinalis capitis muscle (SC), we aimed to define the appropriate locations for nerve entry point targeted injections such as analgesic, botulinum toxin etc. which are applied for the treatment of diseases like cervical dystonia.

Methods: In total 20 right and left sides SC were dissected. After nerves entering to SC were pinned to locate, distances to lines which pass from the external occipital protuberance

(POE) to the mastoid process (PM) and from the POE to vertebra prominens (VP) were measured. The level of nerves according to the spinous processes were determined.

Results: Nerves entering the SC are concentrated in the POE–C1, C1–C2 and C2–C3 zones. Numbers of nerves respectively in those zones were 39, 31, 45 in right side and 42, 25, 48 in the left side. Distribution of nerves in the POE–C1, C1–C2 and C2–C3 zones respectively were 28.636%, 18.788%, 27.273% on the right and were 26.752%, 15.924% 30.573% on the left. The distances of nerves in the POE–C1, C1–C2 and C2–C3 zones to POE–PM line were respectively 29.533±11.651 mm, 47.300±13.999 mm, 68.711±10.530 mm on the right side and on the left side were 27.267±9.815 mm, 50.732±15.163 mm and 67.985±12.202 mm. Distances of nerve in the same zones to the POE–VP line were respectively 20.369±9.137 mm, 16.855±5.474 mm, 21.704±9.227 mm on the right side and on the left side were 19.260±10.116 mm, 15.840±7.094 mm and 19.829±9.529 mm.

Conclusion: Detected nerve branch numbers and the regional concentration may be a guideline for SC interventions and it may enable more effective injections.

Keywords: semispinalis capitis muscle, nerve entry points, innervation, intramuscular injection

O-018

Can erythropoietin and darbepoietin be an alternative to progesterone in the treatment of endometriotic lesions?

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Objective: Endometriosis is a common health problem concerning female reproductive health. Progesterone use is one of the most preferred treatment protocols, although there is no definite treatment yet despite many studies. Erythropoietin (EPO) and darbepoetin (DARBE) mainly act on blood cells. There are also studies showing that it can be protective against degenerative diseases. In this study, we aimed to compare the effect of progesterone on endometriotic lesions with EPO and DARBE, which we have previously shown to be effective.

Methods: Wistar-Albino female rats were used and randomly divided into four groups (n=8); control, EPO, DARBE, progesterone. After endometrial tissues were surgically implanted into the abdominal walls of the animals, 50 µg/kg estrogen was administered intraperitoneally (2 times/week). The groups were given an empty carrier, EPO, DARBE, and progesterone, respectively, for three weeks.Three weeks after completion of the treatment, the presence of recurrence was checked.Lesions volumes were measured. Also, tissue samples were taken and kept under suitable conditions for histological examination.

Results: The lesion size decreased significantly in all treated groups compared to the control group. The maximum phase reduction was in the EPO group. When the recurrence was evaluated, the lesion sizes were smaller than the progesterone, especially in the EPO and DARBE groups. Histological evaluation scores were similar to these findings.

Conclusion: In light of the results obtained in our study, it is suggested that EPO and DARBE may be at least as effective as progesterone in the treatment of endometriotic lesions. Western blot analysis of tissue samples will help to clarify this process.

Keywords: endometriosis, erythropoietin, darbepoietin, progesterone

O-019

Clinical results of microtesticular sperm extraction (microTESE) in azoospermic infertile patients

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Objective: Male infertility accounts for 40% of all infertility cases. According to the criteria of the World Health Organization (WHO, 2010), individuals with sperm parameters below normal levels are diagnosed with oligo/asteno/teratozoospermia. Approximately 3% of these cases are azoospermic cases with no sperm in the ejaculate. Although the condition may be caused by different reasons such as genetic, physiological and mutations, testicular sperm extraction (Diagnostic TESE) is applied to determine the presence or absence of sperm cells. This procedure involves taking biopsy samples from different parts of the testes, physical and enzymatic degradation of the material, and looking for sperm under the microscope. If sperm is present, sperm cells can then be frozen for cryopreservation (cryopreservation), thus ensuring fertility and long-term preservation in patients who cannot have children naturally.

Methods: The aim of this study was to investigate the clinical results of 85 patients who underwent microTESE for azoospermia and Klinefelter syndrome and 2 patients undergoing TESA. For this purpose, 87 patients who were treated in Florence Nightingale Hospital were evaluated retrospectively.

Results: The mean age of the patients was 33.6 and the rate of sperm was 18.39%. An average of 10.13 biopsies were taken from each patient and 87.5% of these patients underwent sperm cryopreservation. Sperm cryopreservation after microTESE was 95.89% in azoospermic patients, whereas sperm cryopreservation was 100% in patients treated for Klinefelter syndrome.

Conclusion: The information obtained can be used to predict treatment success and inform patients.

Keywords: azoospermia, Klinefelter syndrome, microTESE, cryopreservation

O-020

The effect of different luteal phase progesterone usage on pregnancy rates in the treatment of intracytoplasmic sperm injection

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Objective: Embryos obtained from intracytoplasmic sperm injection, which is one of the infertility treatments, are transferred to the mother's uterus. Progesterone is used as luteal support after embryo transfer and it is aimed to prepare the endometrium for embryo attachment. This practice is known to increase implantation and pregnancy rates. Therefore, luteal support is routinely used in in vitro fertilization (IVF) applications. Although there are different studies showing the effects of vaginal and intra-muscular progesterone use on pregnancy rates, the effects of progesterone use are still being discussed. In this study, we aimed to investigate the effect of two different progesterone use on intracytoplasmic sperm injection (ICSI) results.

Methods: 516 couples undergoing ICSI were included in the study. Patients were classified according to progesterone use and group 1 was consisted of 225 patients who used Crinone gel once a day and group two consisted of 291 patients who used Progynex 50 mg IM once a day.

Results: Pregnancy rate was 38% in Crinone gel group and 41.5% in Progynex 50 mg group. There was no statistical difference between the two groups (p=0.32).

Conclusion: It was concluded that the use of Crinone and Progynex as luteal support after intractyoplasmic sperm injection had similar effects on pregnancy rates.

Keywords: ICSI, progesterone, pregnancy rate

O-021

Can the orbital index be used for sex determination and can exophthalmometry be measured by orbital tomography?

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Objective: The aim of this study was to determine the normal values of orbital structures by using computed tomography in adults, and to determine their relationship with gender and age.

Methods: Our study included 151 adults (79 males and 72 females) between the ages of 20–76. Thirty-four parameters were created using 13 different anatomical landmarkers by computed tomography. In addition to linear and volumetric measurements, orbital index and exophthalmometric values were determined. Ellipsoid method was used for volumetric measurements. Data by sex and age were shown separately for the right and left orbita. The percentile values were determined for men and women. A comparison was made between sexes. Right and left orbital measurements were compared. Pearson correlation test was used to determine the relationship between data and age.

Results: In most of the thirty-four parameters, males were found to have statistically significant higher mean scores ($p<0.05$). However, no significant difference was found between the right and left orbital in all anatomical parameters ($p>0.05$). ROI (right orbital index) average of 111.67 in men and 112.57 in women; LOI (left orbital index) mean was 111.44 in males and 112.37 in females ($p>0.05$). RExV (right exophthalmometric value) average 17.13 mm in men and 15.94 mm in women; The mean of LExV (left exophthalmometric value) was found to be 17.13 mm in men and 15,89 mm in women ($p<0.05$).The correlation with age varied according to the parameters.

Conclusion: Orbital indices are not useful in gender discrimination, but exophthalmometric values can be used in the diagnosis of exophthalmos.

Keywords: orbital index, exophthalmos, eye, volume, computed tomography

O-022

Congenital anatomic variations of spleen: multidetector CT study

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Objective: The spleen has different congenital anomalies such as shape, location and number variations. Recently, detection and reporting of congenital splenic anomalies has increased due to increased use of imaging techniques. We aimed to evaluate the incidence and imaging features of congenital anomalies of spleen.

Methods: Abdominal CT scans of patients who admitted to our clinic for various reasons were evaluated retrospectively. Patients with a history of splenic trauma and surgery were excluded from the study. CT examinations were performed with 64 (Toshiba, Aquilion 64, Japan) or 128 (GE, Revolution EVO, USA) slice MDCT. CT scans of 1000 patients were evaluated.

Results: 473 (47.3%) female and 527 (52.7%) male patient's CT examination were included in the study. Patient's age range from 20 to 83 years (mean 56 years). Single accessory spleen was detected in 162 (16.2%) patients and multiple accessory spleens in 35 (3.5%) patients. In 2 (0.2%) of these patients, accessory spleen was intrapancreatic. Wandering spleen was observed in 1 (0.1%) patient and splenorenal fusion in 1 (0.1%) patient. Two (0.2%) patients had left isomerism and polysplenia. Bilobulated spleen was detected in one (0.1%) patient with situs inversus totalis.

Conclusion: The incidence of congenital splenic anomalies detected in our study is similar to the literature. Congenital anomalies of spleen can be misdiagnosed for example accessory spleen as peritoneal implants, intrapancretic accessory spleen as neuroendocrine tumors, wandering spleen as intrabdominal masses and polyspleni as splenosis. Understanding the imaging characteristics of spleen congenital anomalies is important to prevent misdiagnosis because they can mimic the pathological conditions.

Keywords: congenital variation, spleen, computed tomography

O-023

Retrospective investigation of soft tissue thickness of topographic points in adult population by radiological methods

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Objective: This study was carried out to determine facial soft tissue thickness (FSTT) of adults according to skeletal class and to detect whether there is a statistical difference. Methods: A total of 161 full-head images (74 females, 87 males) were used retrospectively in Ankara University Faculty of Dentistry, Department of Oral and Maxillofacial Radiology between 2013–2017. Cephalometric analyzes were performed on a virtual cephologram with Planmeca ProMax 3D Max. FSTT measurements of the patients were measured by comparing them manually and digitally in gender and age groups. The data were compared in terms of the differences between the classes after the separation of the data according to the skeletal classes.

Results: FSTT values of the males were found to be greater than those of the females. There was no significant difference in FSTT between the two sexes in glabella and nasion regions. When the values of FSTT were examined according to skeletal classes, in the skeletal Class 3 group, the values of FSTT in the pogonion area were statistically lower than Class 1 and 2 skeletal groups. In women with Class 2 jaw structure, FSTT in the pogonion region was found to be significantly greater than those of Class1 and 3 females. Also, men with Class 2 jaw structure had significantly higher FSTT values in the labyrinth inferior region than those of class1 and class3 males.

Conclusion: It was shown that there are differences between the anatomical reference points on the face of the patients with jaw structures examined in 3 groups according to the skeletal class.

Keywords: craniofacial reconstruction, cone beam computed tomography, facial soft tissue thicknesses, malocclusion, skeletal classes

O-024

Calculation of corpus callosum volume in musicians and non-musicians by MRICloud method

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Objective: Musicians are ideal model to study brain plasticity and volumetric differences between brain structures. The corpus callosum is the largest commissural pathway that connects the same centers in the two brain hemispheres. Our aim was to see whether there were any volumetric differences or not in the corpus callosum between musicians and non-musicians.

Methods: In our study, the volumes of corpus callosum sections and the ratio of total corpus callosum volumes to brain were calculated using MRICloud. Between the ages of 20–29, 14 males who were educated in Music Department of Erciyes University Faculty of Fine Arts and 10 non-musicians male were included in study and magnetic resonance images (MRI) were used. Mann-Whitney U test was used for quantitative variables in binary comparisons.

Results: The volumes of corpus callosum segments in musicians were found (in cm^3) 4.92±1.14 in genus (GCC), 7.31±1.25 in truncus (BCC), 12.6±1.34 in splenium (SCC), total corpus callosum volume to whole brain ratio of 2.19±0.2%. In non-musicians, GCC was 5.21±1.65 cm^3, BCC 7.18±1.99 cm^3, SCC 12.65±3.88 cm^3, the ratio of corpus callosum volume to brain was 2.04± 0.47%. As a result of the statistical comparison, no statistically significant difference was found between the two groups ($p>0.05$).

Conclusion: The volumes of corpus callosum segments and the ratio to brain didn't differ between two groups. We think that our study may provide a source for studies on volume measurements of corpus callosum.

Keywords: musician, corpus callosum, MRICloud, MRI

O-025

A case of unilateral atrophy with neurofibromatosis: case report

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Neurofibromatosis is an autosomal dominant transitional (de novo cases have also been reported) neurocutaneous syndrome characterized by skin lesions, central or peripheral nervous system tumors. Although neurofibromatosis is a neurocutaneous disease, there are many system involvement with it. Osseous lesions are also common in patients (%40). Pathologies associated with the mandible and temporomandibular joint in the neurofibromatosis, as in this case, have been reported fairly little in the literature. We aimed to highlight that there may also be skeletal malformations in the rich clinical table of neurofibro-

matosis in our case. The maxillofacial computed tomography of a 24 years old female patient with neurofibromatosis at Selcuk University Hospital showed a consistent appearance with atrophy in the right half of the mandible. The mandibular ramus measured 4.1 cm on the right, 5.4 cm on the left; the diameter of condylar process measured 1 cm on the right and 1.6 cm on the left. On the right, joint distance has increased. The left mandibular cortex and medullary bone density were found to be normal. In neurofibromatosis syndrome, radiological examinations should be done with the possibility of bone lesions in mind. These investigations are especially important for the prevention of pathological fractures in bones.

Keywords: neurofibromatosis, maxillofacial computed tomography, temporomandibular joint

O-026

The evaluation of medical students' learning styles in anatomy course

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Objective: To determine dominant learning styles in anatomy course with the work designated to the medical students registered at Istanbul Medipol University, who took the anatomy course in the 2018–2019 academic year.

Methods: The study was carried out on 215 students, enrolled in the first and second year of medical school in Istanbul Medipol University. Index of Learning Styles (ILS) questionnaire developed by Felder and Silverman which has proven validity and reliability, was used to evaluate the learning styles of our students. Adaptation of the questionnaire to Turkish language has been done by Dokuz Eylül University Institute of Social Sciences. The questionnaire was also adapted for use in the anatomy course. This study focused to examine learning styles in four main categories and had a total of 44 questions. Each question had two options of different learning styles. The four categories were visual/verbal, sensory/intuitive, sequential/global and active/reflective. Statistical analysis of the study was performed using SPSS (16.0) program.

Results: The following numbers were determined from the study: 69.1% of the students preferred visual, 66.4% chose sensory, 61.7% indicated sequential, 51.5% marked active learning style.

Conclusion: Each student has all learning styles that mentioned before in the educational process. However, each student has a dominant learning style that they use/benefit from, unconsciously or unintentionally, when learning any subject. In this study, these dominant learning styles were determined. Considering these results, new applications and scientific studies are needed which diversifies anatomy education and increase the effectiveness.

Keywords: ILS, medical education, anatomy education, medical school, anatomy

O-027

Analysis of the effects of exam stress on visual and auditory reaction time and cortisol levels: a neuroperformance study

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Objective: The purpose of the present study was to examine the effects of exam stress, which exists in every moment of education life, on visual and auditory reaction time and cortisol level.

Methods: 66 students (36 males, 30 females; mean age: 19.4±1.8 years; range, 18 to 20 years) attending İnönü University, School of Medicine, Department of Freshmen between May 2018 and June 2018 were included in the study. Visual Reaction Time (VRT) and Auditory Reaction Time (ART) measurements were made with reaction timer by asking the participants to use their dominant hands. 30 days before the committee exam, which was accepted as the relaxed period, students' saliva samples and first reaction time measurements were taken. In order to assess stress, salivary samples were taken and State Trait Anxiety Inventory-I (STAI-I) was conducted. On the day of the committee exam, students' reaction time measurements, saliva samples and STAI-I were taken again.

Results: Median values of cortisol, STAI-I, VRT and ART scores of students were found to increase in stress period ($p<0.05$). Correlation analysis showed that there was a weak positive correlation between cortisol and STAI-I scores during the examination period. In addition, a positive weak correlation was found between participants' VRT and ART values and their cortisol and STAI-I.

Conclusion: As a result of the study we conducted, stress increase was found to increase cortisol and STAI-I scores. Cortisol increase was found to have a negative influence on VRT and ART.

Keywords: cortisol, visual reaction time, auditory reaction time

O-028

The relationship between 2/4 fingers ratio and empathy level in medical students

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Objective: The aim of this study was to determine the relationship between the second and fourth finger length ratio and empathy level of medical students.

Methods: The study was conducted with the voluntary participation of 118 (92.2%) out of 128 students studying at the 2nd year of Balıkesir University School of Medicine. The lengths of the right and left hand index fingers (2P) and ring fingers (4P) of the students were measured with digital caliper. An empathy scale consisting of 60 questions was applied to the students. The high score obtained from the scale indicates the high level of empathy. The data were analyzed and interpreted using SPSS 22.0 package program.

Results: The mean age of female students was 20.42±1.18 years and 21.23±2.60 years for male students. When the mean scores of empathy scale were examined, it was calculated that the female students were 27.64±9.87 and the male students were 29.83± 8.24. The difference between empathy scale scores of female and male students was not statistically significant. Correlation analysis revealed a negative correlation between age and empathy scale scores in female students (r=-0.273) ($p<0.05$).

Conclusion: In our study, it was observed that male students had higher empathy scale scores than female students. We believe that giving communication lessons to medical students will enable physicians with high levels of empathy in their professions.

Keywords: medical faculty students, 2/4 finger length ratio, empathy

O-029

Morphometric measurements of the students of Pamukkale University, Faculty of Dentistry and the effects on their success in applied courses

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Objective: There are 87 faculties of dentistry in our country and 6027 new students start education in these faculties every year. Dental students must work in cavitas oralis, which is difficult to perform. In this study, we aimed to determine whether the upper extremity morphometric measurements are effective in the interventions made in millimetric tooth details.

Methods: In this study, Geschwind scoring was performed to determine the right-handed use of first-year dentistry students. The height, body weight and morphometric measurements of the upper extremities of the students were measured by digital caliper, tape measure and digital scale three times by the same person and were averaged.

Results: 82% of the students were reached and measurements were made. 42% of the students were male and 58% were female. It was determined that 11% used left hand, there were no two handed students. In the application notes related to the application of 3 different teeth with soap, only 6 students passed without completing. 6% of male students and 9% of female students passed without completing. 25% of the students passed in the upper canine dental practice.

Conclusion: The ratio of the length of proximal phalanges to the right phalanges, the ratio of the length of the medial phalanges to the same phalanges, the ratio of the length of the medial phalanges to the same phalanges and the length of the right upper extremity and the body length to the statistically There was a significant difference ($p<0.05$).

Keywords: course achievement, dentistry, upper extremity morphometry,

O-030

Anatomy and morphometry of the foramen lacerum

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Objective: The aim of this study is to determine the localization and the shape of foramen lacerum (FL) on skulls and to find out the distances between the area and neigbouring anatomical bony landmarks.

Methods: The study was performed on the craniums of 50 (100 sides) West Anatolian adult subjects. Morphometrical measurements of the FL and related adjacent structures were taken of the skulls using a Vernier caliper accurate 0.01 mm. The results were evaluated statistically with SPSS 22.0.

Results: The distance of the right FL and the left FL, the distance between FL and the structures such as the carotid canal, hiatus for lesser petrosal nerve, foramen ovale, foramen spinosum, foramen rotundum and the distance of both the right and left FL to midline were evaluated. The distance of FL and posterior, middle and anterior clinoid processes were also evaluated on both side, respectively. Evaluations have already been carried on.

Conclusion: The localization of FL and the distances between the foramen and the anatomical bony landmarks may be useful for neurosurgical approach.

Keywords: foramen lacerum, morphometry, neurosurgical procedure

O-031

Prevalence and distribution of musculus flexor carpi radialis brevis

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Objective: Musculus flexor carpi radialis brevis (FCRB) is a rare muscle. The aim of this study is to determine the prevalence, distribution, origo, intertio and gender differences of FCRB by analyzing Magnetic Resonance (MR) images of the wrist.

Methods: In the present study, MR images of adults over 18 years of age who were admitted to Fırat University Hospital between 01 April 2014 – 01 April 2019 were retrospectively evaluated. Of the individuals scanned in the hospital database in line with the aim of the study, a total of 849 individuals, 507 females and 342 males, were included in the evaluation. **Results:** The prevalence of FCRB was 18 per 507 individuals (3.55%) among females, 16 per 342 individuals (4.67%) among males, and 34 per 849 individuals (4%) in total. Moreover, the distribution (right-left), origo, insertio and gender differences of FCRB were determined.

Conclusion: The knowledge of the anatomical variations is of importance in terms of preventing misdiagnosis and malpractices. This study investigating the prevalence and distribution of FCRB, which is a rare anatomical variation, is the first study conducted on Turkish population. The data obtained will contribute to the evaluation and surgical treatment of wrist diseases, especially distal radius fractures.

Keywords: magnetic resonance (MR), musculus flexor carpi radialis brevis (FCRB), prevalence

O-032

Morphometric analysis of sella turcica types

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Objective: Sella turcica is an important anatomical structure including glandula pituitaria. The development of Sella turcica in the prenatal and postnatal period is of great importance in the normal development or pathology of the organs associated with this structure in the critical region. In this study, we aimed to perform morphometric analysis of sella turcica in patients aged between 1 and 11.

Methods: Total of 72 patients aged between 1–11 years who were admitted to hospital for various reasons and who had lateral head radiography were analyzed. The measurements were classified according to gender and disease types using the Chi Square Test. Sella turcica types were evaluated according to the classification Methods performed by Marcotti et al., Russell and Kjaer and Axelsson et al. $p<0.05$ was considered statistically significant.

Results: Flat type sella turcica according to Meyer Marcotty et al.; normal shape sella turcica according to Axelsson et al., and Type I sella turcica according to Russell and Kjaer were seen more frequently. Besides, according to the classification made by Axelsson et al. Sella turcica Bridge and Combination of Variations Types were not found in both girls and boys. There were no significant differences between Sella turcica types and gender and disease types ($p<0.05$).

Conclusion: Our data will shed light on the knowledge of anatomical variations in the Turkish population of sella turcica types in a certain age group, evaluation of sella turcica types in various diseases, monitoring the development of the person and early diagnosis of the pathological process that may occur.

Keywords: sella turcica, classification, variation, shape

O-033

Analysis of spine anatomy by photoanthropometric method in scoliosis patients

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Objective: Scoliosis is a deformity of the spine in all three space's planes: frontal plane (lateral curvature), horizontal plane (rotation of the vertebrae) and sagittal plane (deformity in lordosis or kyphosis). Objective of the research is analysis of spine anatomy by photoanthropometric method in patients with scoliosis.

Methods: Research includes seventy patients treated in Ege University Hospital Orthopedics and Traumatology Surgery Clinic. Researcher used digital camera and non toxic coloured marker pen. Anatomical landmarks are pointed by using marker pen on skin. Nine photographs were taken for each patient. The angles and distance were measured by using Image J software.

Results: The female-to-male ratio was detected 4:1. Forty nine percent of the curves were lumbar; 30 percent were thoracic; 7 percent were thoracolumbar and 14 percent were double major. All statistically analyses are obtained by using IBM SPSS Version 25.0. Between thoracic kyphosis angle that is obtained with photoanthropometric analysis and thoracic degree of curvature that is measured with Cobb method was found positively correlated ($r=0.708$). Median values of two dependent samples was tested in terms of statistical significance ($p>0.05$).

Conclusion: Using photographic parameters make analysis of spine anatomy possible in scoliosis patients. Analysis of spine anatomy by photoanthropometric method in scoliosis patients produced satisfactory results.

Keywords: photo-anthropometry, scoliosis, spine anatomy

O-034

Evaluation of the relationship between hypermobility and quality of life and pain

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Objective: Hypermobility means that the range of motion of the joints is higher than the normal range of motion. The

prevalence of hypermobility varies depending on age, sex and race and may be asymptomatic in most people. However, studies have shown that it is an important risk factor for ligament injuries, recurrent dislocations, knee and ankle effusions and possible premature arthritis and arthralgia. The aim of this study was to evaluate the relationship between hypermobility and pain and quality of life.

Methods: A total of 42 volunteer students from the Medical Faculty of Yuksek Ihtisas University were included in the study. The Beighton Scale was used for hypermobility assessment. The Nordic Musculoskeletal System Questionnaire was used to assess pain and the WHOQOL-BREF Questionnaire was used to assess quality of life.

Results: According to our results, 61.9% of the students showed hypermobility signs with 4 or more points from the Beighton Scale. Pain complaints were most common in the neck and back (47.6% and 45.2%) and least in the elbow (4.8%). No significant relationship was found between pain scores, quality of life scores and hypermobility ($p>0.05$).

Conclusion: In conclusion, there was no correlation found between hypermobility and pain and quality of life. It has been determined that most of the students had hypermobility signs and the most common localization of the pain was neck and back. It is thought that muscle weakness and imbalance due to sedentary lifestyle may cause hypermobility in the majority of students.

Keywords: hypermobility, pain, student

O-035

Gait analysis after meniscus surgery

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Objective: In addition to increasing the harmony between the structures that form the joint, the meniscus also contributes to proprioception. The aim of this study was to investigate the effect of proprioceptive sensory loss on walking at different times after meniscus surgery.

Methods: A group of 45 patients who operated with arthroscopic partial meniscectomy and 46 healty person included in our study. Gait analysis was performed using force platform in the first and third months after the operation. The control group was performed once. In the gait analysis; foot rotation (FR), step width (SW), step length (SL), step time (ST), stance phase (SP), load response (LR), single support (SS), pre-swing (PS), swing phase (SWP), total double support (TDS), stride length (STL), stride time (STT), Cadence (C), Velocity (V), gait line length (GLL), single support line (SSL), anterior / posterior position (APP) data were evaluated.

Results: In the first evaluation of the patient group, SF, LR, PS and ST were found high, while in the control group, STL, C and V data were higher. In the third month, in the patient group LR, SW, TDS, non-affected SS and non-affected PS data were higher than in the control group. The SS data of the control group were higher than the affected side and the SF data were higher than the non-affected side.

Conclusion: Although most of the gait parameters improved three months after surgery, there were still some differences between the control group and the patients.

Keywords: meniscectomy, meniscus, gait analysis

O-036

Evaluation of the foot posture, subtalar joint supination resistance and general gait parameters in individuals without foot disorders

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Objective: The relationship between foot posture and arch structure with lower extremity biomechanics is important for clinicians. In this study, group I (flat foot) and group II (normal foot) were detected. It was aimed to evaluate some of the general gait parameters and supination resistance of the subtalar joint in these groups.

Methods: 61 volunteers (30 females, 31 males) aged 18–30 years were participated in the study. Related demographic information of the individuals were collected. Based on the left foot, according to the 6-foot posture index (FPI-6), normal foot (values between 0–5) and pronated foot (values between 6–12) types were determined and according to the navicular height ratio, low arch (<0.22) and normal arch (0.22–0.31) foot types were determined. Group I and group II were detected with the data obtained from FPI-6 and navicular height ratios. Video-records were obtained by two-dimensional gait analysis. Some general gait parameters (step width, contralateral step length, cadence, and velocity) were measured using video-records using Kinovea software. Supination resistance was measured with Keystone branded device.

Results: There was no statistically significant difference between group I and group II in terms of general gait parameters and supination resistance force ($p>0.05$). However, there was a negative correlation between FPI-6 and navicular height ratio ($p<0.05$). There was no significant difference between the groups in terms of body mass index ($p>0.05$).

Conclusion: It has shown that general gait parameters and supination resistance did not differ significantly between group I and group II.

Keywords: 6-foot posture index, general gait parameters, navicular heigth ratio, supination resistance

O-037

Evaluation of impact of plantar pressure distribution on static body biomechanics

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Objective: The aim of the study is to analyze the relation between plantar pressure distribution and static body biomechanics.

Methods: 30 women and 30 men, total 60 persons with an age range of 18–26 years were included in this study. Posture evaluation was performed by Posture Screen Mobile application. Plantar pressure distribution was computerized EsCoSCAN® static pedobarographic measuring device. Medial longitudinal arc height, lower extremity muscular force, range of lower extremity active joint motion, physical activity level were performed by Navicular Drop Test, myometer, goniometer and The International Physical Activity Questionnaires respectively.

Results: As a result of statistical analysis, there were no statistically significant differences between weights that impact on posture and foot ($p>0.05$). Alteration of MLA heights affects foot's arc length and weights that impact on front and back foot ($p>0.05$). Percentage of weight that affects right and left foot, right and left medial arc length had statistically significant differences in terms of genders ($p<0.05$). There were no significant differences at right and left invertor and evertor muscle groups, right and left internal rotator muscle groups, left hip external rotator muscle group and left hip adductor muscle groups in terms of genders ($p>0.05$). There were no statistically significant differences between range of ankle joint motion and plantar pressure ($p>0.05$). and no significant differences between IPAQ values of genders ($p>0.05$).

Conclusion: No significant difference was found between posture and foot loads but the foot has been shown to affect the dynamics of body mechanics.

Keywords: plantar pressure, posture, physical activity, muscular test

O-038

Efficacy of early rehabilitation in a patient with spinal cord ischemia and hypoxic ischemic encephalopathy: case report

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Objective: The aim of this study was to investigate the effect of early rehabilitation on motor and functional recovery in a patient who developed both spinal cord ischemia and hypoxic ischemic encephalopathy.

Methods: A 26-year-old male patient was admitted to the physical medicine and rehabilitation (FTR) service with the diagnosis of tetraplegia due to hypoxic ischemic encephelopathy and spinal cord ischemia after one month of intensive care. The patient underwent an 8-week early aurobic and resistant exercise program. Biodex System-3 (Biodex Medical Systems, Shirley, 2000, New York) was used to measure isokinetic knee and ankle muscle strength before and after. Biodex Balance System (Shirley, 2000, New York) was used to measure the patient's balance. 6 min. walking test was performed. Thumb strength was measured with a pinch meter. Disabilities of the Arm, Shoulder and Hands (DASH) were used to evaluate upper limb function, and Functional Independence Measures (FIM) scale was used to determine independence level.

Results: After treatment, balance, isokinetic muscle strength and pinch strength developed. DASH and VAS measurement values decreased after treatment and FIM values increased. The patient could not perform the 6-minute walk test in the pre test and walked 420 m in the post test.

Conclusion: It was concluded that early phase physical therapy and rehabilitation program was effective in both functional and motor recovery in patients with spinal cord ischemia and hypoxic ischemic encephalopathy.

Keywords: spinal cord ischemia, hypoxic ischemic encephalopathy, isokinetic, balance, rehabilitation

O-039

Comparison of visual and auditory reaction times in athletes and sedentaries with different somatotypes: neuroperformance study

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Objective: Reaction time is a determining factor for performance in many spores. Long-term studies have shown that reaction time can be shortened by training. The aim of this study was to compare the visual and auditory reaction times of athletes and sedentary individuals with different somatotypes.

Methods: The study was started after the approval of Malatya Clinical Research Ethics Committee. 73 athletes, 75 sedentary, 148 volunteers were included. Age, gender, height, weight and anthropometric measurements of the subjects were recorded. Somatotype was determined according to Heath-Carter method. Visual (VRT) and auditory (ART) reaction time measurements of the subjects in the study were made with Hubbard Scientific Reaction Timer (Model: 6027, USA)

Results: Based on the somatotype analysis, 6 different somatotypes (balanced ectomorph, balanced mesomorph, ectomorphic mesomorph, endomorphic mesomorph, mesomorph-endomorph, mesomorphic endomorph) were found in the ath-

letes and the sedantary participants. In terms of VRT and ART scores of athletes and sedentary individuals in terms of each somatotype, there was statistically significant difference in balanced ectomorph somatotype character in VRT score. In endomorphic mesomorph somatotype characteristics, there was statistically significant difference in both VRT and ART scores ($p<0.05$).

Conclusion: The results of our study are interesting in terms of being a new subject for scientists working in this field. This study is one of the few studies that correlates somatotype character analysis which is frequently used in sports sciences with reaction time.

Keywords: reaction time, somatotypes, anthropometry

O-040

Anatomic location and clinic of colloid cysts

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Objective: Colloid cysts are a slowly growing benign intracranial tumor. It occurs in less than 1% of all intracranial tumors. These neuroepithelial cysts present with hydrocephalus. It develops from the anterior horn of the 3rd ventricle as a site and makes biventricular hydrocephalus by blocking the foramen monroe. In this presentation, third ventricular anatomy will be evaluated from a surgical perspective

Methods: Colloid cyst was diagnosed in 3 patients who presented to our clinic with headache, nausea, vomiting and sleepiness symptoms. The cases were treated endoscopically.

Results: The third ventricle is associated with the lateral ventricles through the foramen monro and the fourth ventricle through the aquaduct sylvius posteriorly. The colloid cyst located in the foramen monroe was removed by endoscope and cerebrospinal fluid (CSF) flow was provided.

Conclusion: In this presentation, third ventricle and adjacent structures were examined by endoscopy and clinical findings that might occur in case of a blockage were evaluated.

Keywords: colloid cyst, third ventricle, hydrocephalus

O-041

Functional anatomy of basal nuclei network

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Objective: The basal nuclei (BN) define as the feed-forward part of a closed circle connecting all cortical areas sequentially through the BN direct and indirect pathways back to the motor cortex. In the conventional D1/D2 direct/indirect model of the BN, "direct pathway" is a monosynaptic GABAergic inhibitory projection from the striatum to the GPi/SNr, whereas the "indirect pathway" projection is polysynaptic and dis-inhibitory through the GPe and the glutamatergic (excitatory) STN. However, recent basic sciences based and theoretical studies have revealed that the BN connectivity is more complex than the simple connectivity depicted by the D1/D2 direct/indirect model.

Methods: This explanation is also having shortages in explaining the dynamic patterns of BN activity and Parkinson's disease and ignores the emerging roles of the BN in reinforcement learning and behavioral adaptions to the changing environment.

Results: More modern computational models of the BN treat the BN as an actor/critic reinforcement learning network. The main axis or the actor part puts into action the mapping between states and actions (behavioral policy), and the critic calculates the mismatch between predictions and the actual state (prediction error).

Conclusion: The reinforcement actor/critic model of the BN has revolutionized current understanding of physiological mechanisms of model-free (procedural, implicit) learning and may provide insights into certain BN-related disorders such as akinesia and levodopa-induced dyskinesia. General prediction of the next generation of DBS devices will exploit BN actor/critic multi-objective optimization algorithms and will provide even better therapy for human patients.

Keywords: basal nuclei, functional anatomy, network, Parkinson's disease

O-042

The effect of melatonin on vascularization of embryo and embryonic yolk sac

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Objective: Exposure to hypoxia in the early embryonic period causes many anomalies and deaths. Oxidative stress occurs with the accumulation of free radicals as a result of hypoxia. The substances that prevent the accumulation of free radicals in the environment are called antioxidants. The aim of this study was to investigate the effect of a strong antioxidanolan melatonin on embryonic vitellus sac vein and embryo development during the period of 9.5–11.5 days in vitro.

Methods: Wistar albino pregnant rats were used in this study. Pregnancy 9.5. embryos were removed from rat. One control, one hypoxia, two melatonin and hypoxia+10 µM melatonin, hypoxia+50 µM were formed into 6 groups. Morphological scores of embryos grown in culture medium for a total of 48 hours were performed.

Results: When the morphological parameters of the control group and hypoxia group were compared, it was observed that embryos in the control group completed the development and the developmental retardation of the hypoxia group was statistically significant ($p<0.05$). There was a statistically significant difference between hypoxia group and hypoxia low dose melatonin and hypoxia high dose melatonin group ($p<0.05$). In addition, hypoxia and hypoxia low-dose melatonin and hypoxia high-dose melatonin group showed better development than hypoxia group ($p<0.05$).

Conclusion: Melatonin may have positive effects on embryos exposed to hypoxic conditions and showing embryonic growth retardation.

Keywords: melatonin, hypoxia, rat, embryo culture

O-043

Iliocapsularis muscle in human fetuses

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Objective: To determine the incidence of the iliocapsularis muscle in fetal period and its relationship with the hip joint capsule.

Methods: Twenty one formalin-fixed fetuses (12 female and 9 male) with a mean gestational age of 29±3.89 weeks were dissected to reveal morphological properties of iliocapsularis muscle.

Results: Iliocapsularis muscle was observed in 39 out of 42 sides (92%). Its proximal attachment was detected either below the proximal attachment of rectus femoris muscle in 21 out of 39 sides (54%), or it was forming a common tendon with rectus femoris on anterior inferior iliac spine in 10 out of 39 sides (26%), or it was forming an arch along the superior-medial-inferior sides of the proximal attachment of rectus femoris muscle in 8 out of 39 sides (20%). Distal attachment of iliocapsularis muscle was distal to the lesser trochanter in all specimens. Its form was as a broad muscle in 32 out of 39 sides (82%) and as a thin rectangular muscular slip in 7 out of 39 sides (18%). Iliopsoas and iliocapsularis muscles had their particular fascia in 34 out of 39 sides (87%) and in the other 5 sides there was no fascia which prominently separated two muscles. Linear functions were $y=0.49+0.17 \times$ weeks and $y=6.94+0.89 \times$ weeks for width and length, respectively.

Conclusion: Data obtained with the present study revealed that it is an individual and constant muscle. Its dimension, location and course over the hip joint capsule support the idea that it tightens the hip capsule and stabilizes the femoral head.

Keywords: fetus, hip joint capsule, iliocapsularis muscle, morphology

O-044

Morphometric development of cerebelum during fetal period

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Objective: The aim of this study was to evaluate the development and morphometric structure of cerebellum during fetal period.

Methods: Cerebellum morphometry was investigated in 42 fetal cadavers without external anomalies and pathologies between 22–40 weeks of gestation with anatomical dissection method. Obtained data about cerebellum is; weight, volume, transcerebellar diameter, vermis height, vermis anterior-posterior dimension, right and left cerebellar hemispheres height, right and left cerebellar hemispheres anterior-posterior dimension. Digital caliper, precision scale and graduated measuring cup were used for measuring.

Results: The mean values and standard deviations of the parameters related to cerebellum were determined according to gestational weeks and month groups. All parameters were increased with gestational age. When the height of hemispheres ($p=0.538$) and anterior-posterior dimension ($p=0.847$) were compared to right and left sides, no statistically significant difference was observed between the sides. No statistical difference was found in all parameters in the comparisons between genders ($p>0.05$).

Conclusion: We think that it will contribute to the identification of anomalies, pathologies and variations related to cerebellum development in fetal period, diagnosis and treatments, to studies to be conducted in sciences such as intrauterine surgery, fetopathology, embryology, neurology, anatomy and obstetrics.

Keywords: fetus, development, cerebellum, morphometry

O-045

Examination of temporomandibular joint disorders in individuals with cerebral palsy

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Objective: In this study, we aimed to investigate the difference of temporomandibular joint disorders (TMER) according to age,

gender, and type of CP in individuals with cerebral palsy (CP) and to compare it with the control group.

Methods: 120 subjects with CP and 60 controls were included in the study. The individuals were divided according to age groups and gender. Individuals were subjected to DC/TMD (Diagnostic Criteria/Temporomandibular Disorders) examination criteria determined by the International RDC/TMD (Research Diagnostic Criteria/Temporomandibular Disorders) Consortium network.

Results: In individuals with CP; palpation pain, midline deviation, restricted mouth opening, mouth opening disorders, disc displacements, pain disorders and joint sounds were found to be significantly higher than the control group ($p<0.05$). TMER was found to be higher in subjects with CP than in the control group ($p<0.05$). TMER was significantly higher in SP and control group between 19–50 years of age compared to other age groups ($p<0.05$). While TMER was found to be higher in the control group ($p<0.05$), it was higher in men with CP than in men.

Conclusion: Our study is the first to evaluate TMER in adults with CP and is the most comprehensive study in the literature. The presentation of TMER in individuals with CP in men and women and in different age groups is very important in terms of TMER risk and disease prognosis. Predicting these risks will make significant contributions to taking measures against TMER.

Keywords: cerebral palsy, temporomandibular joint disorders, anatomy

O-046

Monckeberg's arteriosclerosis: report of two cases

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Objective: The aim of this case report is to present the radiographic findings of Monckeberg arteriosclerosis.

Methods: Two patients who admitted to Gazi University Faculty of Dentistry, Department of Oral and Maxillofacial Radiology for several dental causes required panoramic radiography.

Results: On the panaoramic images Monckeberg's arteriosclerosis were observed incidentally. The first case was 57-years-old male patient with chronic renal failure and hepatitis C who had been dialyzed for 10 years. "Pipe stem," and/or "rail tracking" shaped calcifications were observed at bilateral pharynx, bilateral submandibular and bilateral sigmoid notch areas on the panoramic radiography. These calcifications were localized in carotid artery, facial artery and multiple small arteries. Second case was 71-years-old male patient with diabetes mellitus. "Pipe stem," and/or "rail tracking" shaped calcifications were observed at bilateral submandibular areas on the panoramic radiography. These calcifications were localized in bilateral facial arteries. Monckeberg's arteriosclerosis is seen in patients with diabetes mellitus, hyperparathyroidism and chronic renal diseases and does not have any symptoms.

Conclusion: Clinicians should be aware of incidental calcifications and pay attention on radiographs for unusual anatomic and pathologic findings; their relationship between systemic diseases should be known and the patients should be informed and consulted.

Keywords: medial calcific sclerosis, Monckeberg's arteriosclerosis, vascular calcification

O-047

Surgical morphological evaluation of the anatomical position of lingula mandibulae

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Objective: Bilateral Sagittal Split Ramus Osteotomy (BSSRO) is a frequently used method for the correction of facial deformities originating from the mandible. Accurate planning has an important role in the prevention of neurosensory complications during the procedure. Imaging techniques are utilized when performing such surgeries. However, the surgeon's knowledge of the mean values of anatomical structures during the procedure will help in the development of surgical modifications against complications. The aim of this study was to help the surgeon to determine the mean safety area of the lingula mandibulae and was to determine the point of entry of the nervus alveolaris inferior to the mandible in the bone incisions of the BSSRO.

Methods: The calculations were performed 1-between two parallel lines horizontally passing through the points of alveol crest-anterior border of the ramus conjuction and superior point of the lingula mandibulae bilaterally at 50 dry human mandible. 2-measurements were performed between the anterior border of the lingula mandibulae and the anterior ridge of the ramus mandibulae, and 3-the posterior edge of the ramus mandibulae and the posterior border of the lingula mandibulae.

Result: Bilateral measurements;1.measurement; 11.75±1.86 mm on the right and 11.99±1.96 mm on the left. 2. measurement; right, 16.04±2.43 mm, left,19.64±2.35 mm, 3. measurement; 2.84±2.35 mm on the right and 8.29±2.26 mm on the left.

Conclusion: Although there was no difference between the right and left sides, the highest value was found to be 21.98 mm.Therefore, the surgeon performs the horizontal bone incision over this distance to prevent nerve damage during the pro-

cedure and helps keep the nerve medial during the removal of bone fragments.

Keywords: mandible, ramus, osteotomy

O-048

Evaluation of vertical relationship between maxillary teeth roots and maxillary sinus using cone beam computed tomography (CBCT)

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Objective: Aim of this study is to evaluate the relationship of maxillary canine, premolar and molar teeth to maxillary sinus using cone beam computed tomography (CBCT).

Methods: Study included CBCT images of 200 patients from the archives of Istanbul Medipol University Faculty of Dentistry, Department of Oral and Maxillofacial Radiology. Canine, premolar and molar teeth of patients aged 21 years and older, were assessed by CBCT. On CBCT images, vertical relationship between teeth roots and maxillary sinus was investigated.

Results: While the rate of maxillary sinus relationship of single-rooted teeth is higher in females than males; relationship of palatinal roots with maxillary sinus is higher in males. No statistically significant difference was found between genders for other teeth in terms of sinus relation rates.

Conclusion: Knowing the close anatomical relationship of the maxillary posterior teeth roots to the maxillary sinus helps the clinician to avoid problems that may occur during dental procedures. Relationship between maxillary sinus floor and maxillary canine, premolar and molar teeth can be visualized clearly with CBCT.

Keywords: CBCT, maxillary sinus, tooth root

O-049

Morphometric analysis of mandible coronoid process parameters between two sides

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Objective: It is aimed that the relationship between mandibula coronoid process (CP) and other mandible morphometric parameters in dry bones and compare these data between two sides.

Methods: 22 mandible of bone collection in anatomy laboratory were photographed with a digital camera in three different ways, from right-left lateral and posterior. Measurements were applied using Image J software. CP morphometric parameters compare with ramus of mandible height-head (RMH), ramus of mandible height- mandibular notch (RMN), ramus of mandible thickness (RMT), body of mandible width (BMW), angle of mandibular notch (AMN) gonial angle (GA) and bigonial width (BW).

Results: No significant difference was found between the right and left sides in all parameters. According to correlation analysis has between ramus of mandible height-coronoid process (RMHCP) and RMN, RMH have highly correlated. On the contrary AMN and coronoid process height (CPH), RMH and GA have negatif corelated.

Conclusion: Coronoid process-head of mandible height difference (CPHHD) and CPH has between positive coraleted. However CPHHD and RMH have between no corelated. This supports that PCH and RMH are independent. Morphometric parameter values between the two sides were limited, therefore, the study should be examined with more cases and the absolute value of should be demonstrated.

Keywords: mandible, coronoid process, morphometry

O-050

Morphometry and vertebra level of hyoid bone

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Objective: The aim of this study was to investigate the morphometry and vertebral level of hyoid bone on three-dimensional computed tomography images.

Methods: Our study was performed using CT images of 84 cases (41 males, 43 females) aged between 10–98 years. Images were obtained from Süleyman Demirel University Research and Application Hospital "Hospital Image Archive System (PACS)". The vertebral level of each hyoid bone was determined. Vertical length of hyoid bone, length and height of greater horn, height and width of body, distance between distal ends of greater horn and shortest distance of distal end of greater horn to body of nearest cervical vertebra was measured. Measurements were performed using RadiAnt DICOM Viewer 4.6.9. Data were analyzed using SPSS 20 for Windows.

Results: Most common vertebral level was C3(38.1%), the rarest vertebral levels were C1–C2 (1.2%) and C5(1.2%).As a result, the mean of all morphometric measurements, except for the distance of the hyoid bone to the nearest cervical vertebra was found in males ($p<0.05$).The mean distance of hyoid bone to the nearest cervical vertebra was higher in females ($p<0.05$).

Conclusion: We believe that knowing the vertebral level and morphometric properties of hyoid bone will help surgeons in the diagnosis and treatment approaches of this region.

Keywords: greater horn, morphometry, computed tomography, RadiAnt

O-051

Variations in the V1 and V2 segments of the vertebral artery and their clinical significance

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Objective: Vertebral artery (VA) is involved brain and in the deep structures of the neck nutrition. Its usualy the first branch of the subclavian artery and most common entry of transverse foramen (TF) at the C6 level. The aim of this study is to investigate the variations in the proximal segments of the VA, the dominance between the two sides and the possible clinical reflections.

Methods: 200 Neck CT angiography which are randomly selected were scanned. 400 vertebral artery was investigated for the relationship between the origin of the VA and the level of entry into TF. The diameter of the VA at the level of the V2 segment was measured and related basilar artery (BA) course was investigated.

Results: In the majority of cases, both sides of VA were the first branch of subclavian artery and entered the TF at C6 level. 6% of the left VAs were branched from the aorta. 2/3 of them originated from the proximal of the suclavian artery and 1/3 from the distal. The VA which were originating from the proximal tended to enter theTF more distally than C6 level. While the diameters of the right and left VAs were almost the same in approximately 20%, left VA was dominant in up to 60% of cases. A significant relationship was found between the side of dominant VA and in the course of the BA.

Conclusion: Identification of variations in the proximal part of the VA is vital for investigating theetiology of clinical findings and planning risky procedures suchas cervical nerve blockade.

Keywords: basilar artery, vertebral artery anomalies, vertebral artery dominance

O-052

Sex- and age-related differences in the dimensions of the corpus callosum and brain: morphometric MRI study

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Objective: We aimed to assess sex and age-related differences in the dimensions of the CC and brain.

Methods: This descriptive-pilot study was carried out with 20 (10M, 10F) subjects without neuropathology using MRI. Subjects were divided into age groups (10–20, 50–60 years) to assess age-related differences in the dimensions of the CC and brain. Mid-sagittal T1-weighted images of the brain were used to measure the area of the CC and specific measurements. The following measurements were done:max.longitudinal dimension (AB); max. vertical dimension (CD); the distance from the polus frontalis to genu (AG); the distance from the splenium to the polus occipitalis (SB); area of the genu; area of the splenium;and total area of theCC. Data were analyzed by Mann Whitney U, Student's t test, Spearman andPearson correlation coefficients.

Results: Regarding age in female, there was a significant decrease in AB and SB distances. Although all values obtained from males were decreased with age, there was no significant between the age gorups. No sex differences in the dimensions of the CC and brain were observed. A strong positive correlation was found between total area of theCC and area of thesplenium, AB and SB in females. Total area of the CC shows strong positive correlation to area of the genu and splenium in males. A positive linearcorrelation was evident between area of the genu and splenium, AB and SB in males.

Conclusion: We should emphasize that this is a preliminary finding and our results should be taken into account by keeping the limitation of smallsample size in mind. Further studies should be performed to establish the normal standard data in each age group and sex. Deviations from normal may serve as an index for the presence and progress of various neuropathological conditions.

Keywords: brain, corpus callosum, sex, morphology, magnetic resonance imaging

O-053

Evaluation of hamate bone structure with microcomputerized tomography (micro-CT) method

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Objective: In this study our aim is to elucidate the trabecular structure of the hamate bone by using Micro-CT method.

Methods: 55 dried hamate bones are used in this study. Each of these hamate bones is scanned as a whole in the Micro-CT device wtih 33 µm of resolution. We evaluated a total of 10 parameters (tissue volume, bone volume, percent bone volume: bone volume/tissue volume, bone surface, bone surface/volume ratio, trabecular number, trabecular thickness, trabecular seperation, structure model index and degree of anisotropy) regarding bones' volume, surface and trabecular structure. After scanning procedure raw datas are reconstructed with Micro-CT software. Then recontructed datas are analysed 2 and 3 dimensionally. These same datas are colored with formation of 3D models by using CTvox and CTvol softwares.

Results: We obtained the following results for hamate bones: Tissue volume: 2526.12±604.615 mm^3, Bone volume: 1137.10±

318.973 mm^3, Percent bone volume: Bone volume/Tissue volume: %44.93±5.859, Bone surface: 12149.25±3738.144 mm^2, Bone surface/volume ratio: 10.78±2.006 mm-1, Trabecular number: 1.31±0.150 mm-1, Trabecular thickness: 0.35±0.056 mm, Trabecular seperation: 0.57±0.087 mm, Structure model index: -0.12±0.638, Degree of anisotropy: 1.30±0.093.

Conclusion: When compared with other carpal bone studies regarding bone strenght it seems that hamate is a stronger bone related with its trabecular thickness and number but a weaker bone in relation to its trabecular seperation among other carpal bones.

Keywords: trabecular structure, hamate bone, micro-CT

O-054

An investigation of oesophageal strictures, esophageal hiatus and oesophagogastric junction localizations related to age and gender

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Objective: The objective of this study was determining anatomic localizations of oesophageus strictures, oesophageal hiatus and oesophagogastric junction according to age and gender in patients undergoing upper gastrointestinal system endoscopy.

Methods: Images of patients who underwent upper gastrointestinal system endoscopy in Kartal Koşuyolu Hospital between 2018–2019 were reviewed retrospectively in this study. Nine patients with cancer were excluded. Relation of anatomic localizations of hiatus oesophageus, oesophagogastric junction and cervical oesophageus with age, sex and clinical diagnosis was investigated on endoscopy data.

Results: Of the 298 patients who underwent upper gastrointestinal endoscopy for different indications, 175 were female and 123 were male. 7% of patients were younger than 35 years, 19.1% were 35–44 years, 24.2% were 45–54 years, 27.5% were 55–64 years and 22.1% were 65 years old and over. Mean lengths of oesophageal hiatus, oesophagogastric junction and cervical oesophageus were 38.61±2.23 mm, 37.5±2.23 mm and 15.06±0.57 mm, respectively. Length of oesophageal hiatus, oesophagogastric junction and cervical oesophageus were significantly higher in males than females (p=0.001). No statistically significant difference was observed between the age groups as regards endoscopic data (p>0.05).

Conclusion: Endoscopy is accepted as the gold standard in diagnosis of upper gastrointestinal system diseases and is easily performed. Although the anatomical localization of oesophageus strictures, oesophageal hiatus and oesophagogastric junction which we present with this method is important to prevent complications during this procedure, we think that it will also be helpful in determining hiatal hernia and insufficiencies.

Keywords: endoscopy, oesophageal hiatus, oesophagogastric junction, oesophagus, oesophageal structures

O-055

Effect of chloroquine in chronic hypoxia-induced bowel damage

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Objective: Hypoxia seriously stimulates intestinal barrier damage and forms an inflammatory response. Chloroquine is an antimalarian drug. The aim of this study was to investigate the anti-inflammatory effect of chloroquine on intestinal injury in chronic hypoxia-induced rats.

Methods: In this study, 24 8–12 week old adult Wistar albino rats weighing 150–200 gr were used in Erciyes University Experimental and Clinical Research Center (DEKAM). A total of 24 rats (8 rats) were used for each group. The control group (n=8) was kept under normoxia (21% oxygen) for 28 days. Hypoxia (n=8, 10% oxygen) and hypoxia + chlorokine (n=8, 10% oxygen + chlorokine 50 mg/kg/day) were exposed to 10% chronic hypoxia for 28 days.TNF-alpha antibody in 5–6 µm thick sections from paraffin blocks. Each preparation was randomly scored in 5 areas according to the intensity of staining. This scoring; 0: no staining, 1: less staining, 2: moderate staining, 3: intense staining. The results were evaluated in the SPSS statistical package program. P<0.005 was considered significant.

Results: When immunohistochemical results were evaluated, the intensity of TNF-α in intestinal tissue in hypoxia group increased significantly compared to control group. In hypoxia + chloroquine group, the TNF-α concentration in intestinal tissue showed a statistically significant decrease compared to the hypoxia group.

Conclusion: These results show that the inhibition of chlorokine on TNF-α and its antiinflammatory effect on chronic intestinal hypoxia induced experimental bowel damage has been shown to reduce bowel damage.

Keywords: hypoxia, bowel, inflammation

O-056

Investigation of the effect of hip muscle force on bone mineral density and balance in osteoporosis

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Objective: The aim of this study is to evaluate the relationship between bone mineral density (BMD) and muscle strength in osteoporotic individuals and to investigate the relationship between balance and hip muscle strength.

Methods: Forty women aged 40 years and over with a diagnosis of osteoporosis were included in the study. BMD, hip muscle strength, balance were evaluated. SPSS 18.0 statistical package program was used for statistical analysis. Data were expressed as mean, standard deviation and percentage (%). Spearman correlation analysis test was used for correlation analysis. A p value of <0.05 was considered significant.

Results: There was a positive correlation between BMD and physical activity level (r=0.79). A positive correlation was found between Berg balance score and BMD (r=0.78). A positive correlation was found between hip muscle strength and Berg balance score. The highest relationship was found to be related to hip abduction muscle group (r=0.78). A positive correlation was found between hip muscle strength and BMD.

Conclusion: A positive correlation was found between muscle strength and BMD

Keywords: osteoporosis, bone mineral density, muscle strength, balance

O-057

Prof. Dr. Demir Ali Uğur, Netter of Turks

Baskan MS

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The aim of this study is to make the new generations meet and remind the people who have already known him of a faculty member of the Department of General Surgery, who has devoted his life-long years to anatomy, also an author and an artist of extraordinary Indian ink designs, and has never been behind his contemporaries: Prof. Dr. Demir Uğur.

Keywords: Prof. Dr. Demir Uğur, Netter of Turks, Indian ink designs

O-058

Perforator flaps: a systematic review

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Objective: Perforator flaps have become very popular in the last twenty years because of their advantages and have started to replace traditional muscle-skin flaps. Although this popularity there is still no consensus on the definition, classification and terminology of perforator flaps. The aim of this study is to review the current literature on perforator flaps.

Methods: The literature was searched for perforator flaps and their types and the information obtained was reviewed.

Results: Perforator flaps consist of subcutaneous adipose tissue and the skin, which is protected by the underlying muscle tissue and is vascularized by the isolated perforator vessel or vessels. The source vessels may pass through deep tissues or penetrate deep tissue. According to this feature, they are classified as direct and indirect perforator flaps. According to the perforator vessels course, these flaps are simply classified into three categories; direct cutaneous perforator, indirect muscle perforator (myocutaneous) and indirect septal perforator (septocutaneous). The most popular donor sites are the inferior epigasric (profunda) and the lateral circumflex femoral artery. Other commonly used perforator flap arteriosomes are peroneal, thoracodorsal, circumflex scapular, radial, superior gluteal and supreme intercostal artery.

Conclusion: Functional and aesthetically successful results are obtained with perforator flaps and donor site morbidity is minimized. Fascia, muscles and nerves can be preserved only when skin is needed for repair. Because fine dissections are required for perforator flaps, the operation time is prolonged and the technique becomes difficult due to the changes in the placement and size of the perforator vessels.

Keywords: perforator flap, musculo-cutaneous flap, anjiosom

O-059

Investigation of the morphological structure of anal sphincter in patients with hemorrhoidal disease: preliminary findings

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Objective: In this study, it was aimed to comparethe thickness of m.sphincter ani internus/externus, m. puborectalis and area of the anal triangle between individuals with stage IV hemorrhoidal disease and healthy individuals.

Methods: This study was conducted with the approval of Inonu University Clinical Research Ethics Committee (Protocol No: 2018/172). Aged with 18–65 years, 23 healty volunteers and 40 individuals diagnosed with stage IV hemorrhoidal diseseas applied to the Turgut Özal Medical Center Proctology Polyclinic were included the study. Age, sex, height, weight, body mass index (BMI) and m. sphincter ani internus/externus and m. puborectalis thickness measurements were taken from the individuals. Muscle thickness was measured using three-dimensional endoanal ultrasonography (3D-EAUSG). Anal triangle dimensions of both groups were measured using digital caliper.

Results: While there was no statistically significant difference between patient group and control group in terms of age, sex,

height, weight, BMI, m. puborectalis thickness and anal triangle area (p>0.05), the statistically significant difference was found between m. sphincter ani externus/internus (p=0.049; p=0.034, respectively). The thickness of m. sphincter ani externus was 3.81±1.04 in the patient group and 3.27±0.98 in the control group. M. sphincter ani internus thickness was 2.51±0.83 in the patient group; and 2.11±0.60 in the control group.

Conclusion: M. sphincter ani externus/internus thicknesses increased in the patient group and this increase may be related to the emergence of the disease. It is also possible that this increased muscle thickness is a result of the disease.

Keywords: hemorrhoidal disease, anal sphincter, anal triangle

O-060

Investigation of the gender-based differences in evaluation of renal calyces in Turkish race by ureteropelvic angle, infundibulopelvic angle, ureter diameter and Sampaio classification

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Objective: Kidneys help maintain the fluid/electrolyte balance of the body by excreting waste products and excess water resulting from metabolic activities. While maintaining fluid balance in the body, kidneys also affect blood pressure. In order to maintain the healthy functioning of the whole system, kidneys should be protected from diseases and, in case of a disease, the appropriate interventions and treatment options should be chosen with minimal financial loss in a short time. In Turkey, urinary tract stone disease is a common health problem with frequent recurrence. Due to the high likelihood of recurrence, it is necessary to determine the most effective examination and treatment options, maintain maximum renal function, and minimize morbidity. Many studies conducted for these reasons shed light on what can be done in this direction. With the advances in technology, minimally invasive treatment options are preferred.

Methods: In contribution to previous studies, the aim of this study was to determine whether gender differences would affect the treatment in 200 Turkish patients who were admitted to Bakırköy Dr Sadi Konuk Training and Research Hospital with the complaint of kidney stones and underwent PNL surgery between 2016 and 2018.

Results: The patients' infundibulopelvic angle, ureteropelvic angle, ureter diameter and infundibulum width were measured and the patients were categorized according to Sampaio calixial classification. Measurements were performed on the IVP images using the techniques proposed by Sampaio and Elbahnasy.

Conclusion: We concluded that the values we measured and the classification did not create significant differences in terms of gender among the patients selected.

Keywords: infundibulopelvic angle, ureteropelvic angle, Sampaio calixial classification

O-061

Anthropometric measurements of the facial region in children with cerebral palsy

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Objective: The purpose of this study is to determine mean standard values of facial anthropometric measurements of children with cerebral palsy and to compare with healthy children in the same age group.

Methods: Anthropometric measurements were taken from 65 children (35 cerebral palsy and 30 healthy) between 2–18 years old. Measurements were taken depending on the reference points described in the literature while the head was in Frankfurt Plane. Anthropometric measurements were taken including body height and weight, head width, facial width, forehead width, mandible width etc.

Results: According to the results, the average values of cerebral palsy group were forehead width 97.50±11.20 mm; face width 88.14±9.51 mm; mandible width 75.57±9.51 mm for boys. Control group values were 107.93±13.91 mm, 103.46± 8.07 mm and 91.80±9.15 mm for boys, respectively. This parameters were 94.85±13.65 mm, 86.61±10.38 mm, 75.19± 13.28 mm for girls with cerebral palsy. Control group values were 108.66±14.01 mm, 107.06±10.31 and 95.93±10.97 mm for girls. The mean values of measurements were usually lower in children with cerebral palsy than control group.

Conclusion: Data collected in the present study may be useful for pediatricians in the early detection and early starting of treatment in neurodevelopmental disorders. Furthermore, we think that the obtained average values will be important for monitoring growth and development of children with cerebral palsy. We also believe that our study will contribute to the studies on craniofacial anthropometry in children with cerebral palsy.

Keywords: anthropometry, cerebral palsy, children, face

O-062

Sex estimation in anthropology: a bibliometric analysis

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Objective: Multidisciplinary studies are carried out using morphological and morphometric Methods about sex determination. Retrospective evaluation of scientific productivity is a guideline for the development of future studies in the planning and quality aspects. The aim of this study is to evaluate the publications related to sex determination in the extended scientific citation index (SCI-E).

Methods: Using "sex determination", "sex estimation" and "anthropology" keywords, all scientific publications in the extended scientific citation index in the English language between 1991–2019 were analyzed using the Web of Science database.

Results: 516 publications were examined. According to the Web of Science categories, 375 (72.6%) were forensic medicine, 67 (12.9%) anthropology, 29 (5.6%) evolutionary biology, 25 (4.8%) pathology, 15 (2.9%) of them are within the scope of anatomy morphology. Most of the studies have been published in journals related to forensic medicine and forensic sciences. 126 of the publications were sent from the USA, 51 from India, and 37 from Spain. And also 22 studies were sent from Turkey. The authors from Turkey were from department of forensic medicine, anatomy, radiology, orthopedics, physiology, biostatistics.

Conclusion: Sex determination by morphological and morphometric Methods have been observed to increase gradually over the years. In this regard, it is thought that it will be important to increase the quantity and quality of multidisciplinary studies including anatomists in our country

Keywords: sex determination, anthropology, bibliometric analysis

O-063

Antropometric measurements and indices used in craniofacial anthropometry

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Objective: We aimed to determine the anthropometric measurements and indices used in this field by reviewing the studies related to craniofacial anthropometry in the literature.

Methods: In this study, we searched the articles related to craniofacial anthropomy starting from 2019 on Pub med, Web of science and Google scholar search. Measurements related to craniofacial anthropomyter were determined.

Results: Craniofacial anthropometric measurements used in the literature review; head circumference, head height, head width, maximum cranial length, maximum cranial width, face height, face width, ear length, outer canthal distance, inner canthal distance, nose length, nose width, filtrum length, mouth width.

Conclusion: It is necessary to collect information about the anthropometric measurements of the face in order to understand various facial deformities and perform successful reconstructive surgery. Many studies have shown that; different linear and angular craniofacial measurements differ in boys and girls. Measurements also vary according to age and race. For different populations, craniofacial measurement standards should be established in terms of gender and age groups. In order to evaluate growth and development, anthropometric measurements such as height and body weight, as well as head and neck anthropometric measurements are used as criteria. Head anthropometric measurements reflect the brain growth, especially around the head, and are the least affected by nutrition. Anthropometric measurements are decisive for clinical diagnosis and treatment Methods. Craniofacial anthropometric measurements are very important for plastic and orthodontic treatment of patients with craniofacial deformity, determination of optimal facial dimensions in plastic surgery, jaw surgery and forensic medicine.

Keywords: anthropometry, craniofacial measurement, index

O-064

Evaluation of the distance between auricula and midline of the face for facial symmetry

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Objective: The presence or absence of symmetry in the facial anatomy is one of the factors affecting human social communication. It is also important to have knowledge about the relationship between facial symmetry and the distance between the auricle and midline of the face in plastic and reconstructive surgery to plan appropriate surgery. The aim of this study was to evaluate the distance between the midline of the face and the auricle for symmetry.

Methods: Photographs of 102 people (51 males and 51 females) aged between 18–25 years were taken from the right and left auricle by the same person at the same distance (1 m) from the same camera. The distance was measured digitally by ImageJ program from supraaurale, tragion and subaurale to the trichion, nasion, pronasale, subnasale, stomion and gnathion on the midline of the face. Statistical analysis was performed by SPSS program. Paired T test was used to compare the measurements of the right and left sides.

Results: When we compared the distance between the auricle and the midline of the face, there was no significant difference between the measurements of the right and left sides.

Conclusion: In our study, we determined the presence of symmetry that shows the aesthetic appeal and beauty between the right and left auricles and the midline of the face.

Keywords: auricle, symmetry, anthropometry

O-065

Evaluation of the distribution of mechanoreceptors and neural body in the hip joint with severe coxarthrosis in 9 patients: a histologic and stereologic study

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Objective: Deciding on an incision method with minimal damage to mechanoreceptors and neural structures is thought to prevent early recovery of the patient's normal functions in the postop period, less proprioceptive sensory loss and prevent pain during the recovery period of the patient. In this study, it is thought that it will clarify the location and anatomical distribution of mechanoreceptors in these regions which may be clinically valuable.

Methods: This study was approved by the Istanbul Medipol University International Clinical Research Ethics Committee. Ministry of Health Bakırkoy Sadi Konuk Training and Research Hospital Orthopedics and Traumatology Clinic. Nine patients operated for total hip arthroplasty were included into the study. Tissue samples were collected from the anterior, superior, anteroinferior parts of the joint capsule, teres ligament, transvers acetabular ligament and acetabular labrum. All specimens were applied standard histologic procedure, embedded in paraffin, stained by silvering method, examined under light microscope.

Results: The highest number of free nerve endings were observed in labrum, although the number of mechanoreceptors were lowest. Teres ligament has the highest number of mechanoreceptors among all other specimens. Within the joint capsule, mechanoreceptors were most abundant at its antero-inferior part,whereas its anterior part contained the lowest number of mechanoreceptors.These results suggest that, as the anterior part of hip capsule bears the lowest number of mechanoreceptors,it might be safer for incision during total hip arthroplasty surgery.

Conclusion: Further studies on the mechanoreceptor and free nerve ending distribution at the hip joint is needed in order to determine reliable approaches for preoperative planning and postoperative rehabilitation programs.

Keywords: coxarthrosis, hip joint, mechanoreceptor, stereology, incision

O-066

Immunohistochemical and histopathological evaluation of the effects of hypericum perforatum extract on carciogen applied oral mucosa

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Objective: Squamous cell carcinoma of the oral mucosa is the fifth common cancer and occupies %90 of all the oral cancers. Recently natural products with antioxidant properties are being used to create alternative solutions to various health problems. Liquidambar species have been subject to many studies and Liquidambar orientalis (LO), sub-group of these species, are known to have potent antioxidant effects. The purpose of this study was to compare the histopathological and immunohistochemical effects of LO on 7, 12-dimethylbenzantracene (DMBA), a carcinogen, applied rat oral buccal mucosa.

Methods: 30 Wistar rats were divided randomly into four groups. The control group received no treatment. Second group received DMBA, third group DMBA+LO, fourth group only LO extract. After 16 weeks of applications animals were sacrificed and buccal mucosa samples were taken. Superoxide dismutase (SOD), catalase (CAT), matrix metalloproteinase (MMP), and vascular endothelial growth factor (VEGF) antigens were immunohistochemically evaluated.

Results: Histopathological evaluation revealed less epithelial changes in DMBA+HP and HP groups with regard to DMBA group. The immunohistochemical evaluation revealed increases in SOD and CAT antioxidant enzymes in the HP applied group with regard to carcinogen applied groups. DMBA applied groups' coloring intensity for MMP antigen was more than the other groups. VEGF antigen did not show positivity in any of the groups.

Conclusion: HP extract may induce the synthesis of antioxidant enzymes to support the antioxidant defense system; and decrease MMP synthesis to limit the progression of cancerous changes to deeper tissues.

Keywords: hypericum perforatum, immunohistochemistry, oral cancer, premalignant lesion

O-067

Regulation of hypothalamic hunger circuits by a catecholaminergic pathway in TH-cre transgenic mice

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Objective: Maintaning energy balance is controlled by central circuits monitoring peripheral signals. There are two distinct regions in the brain to regulate food seeking and consumption via receiving energy associated signals are arcuate nucleus of hypothalamus (ARC) and nucleus of solitary track in the brain stem (NTS). ARC is well known by increasing or decreasing effect on food intake via AgRP and POMC neurons whereas NTS is involved in suppressing food consumption through vagal satiety signals. However, signals modulating the activity of AgRP and POMC neurons are still not well understood. Here, we investigated the interaction of ARC and NTS regions, and their effects on feeding behavior.

Methods: rAAV2/1-CAG-FLEX-tdTomato rAAV2/1-EF1a-FLEX-hChR2(H134R)-eYFP and rAAV-EF1a-DIO hM4D(Gi)-mCherry viruses were delivered intracranially to the NTS regions of TH-cre mice in the stereotaxic frame. Chemogenetic and optogenetic modulations were applied on the projections of the NTS-TH neurons in the ARC and their effects on animal behavior were analyzed. Electrophysiological recordings were performed by using patch clamp techniques to isolate synaptic currents of stimulated TH axons from AgRP and POMC neurons in ARC.

Results: Here, we observed the presence of intense projections of NTS-TH neurons to theARC, which, when stimulated, gave rise to a strong increase in appetite via bi-directional controlling of AgRP and POMC neurons. It is showed by optogenetic and chemogenetic analyses that norepinephrine (NE) signals originating from the NTS-TH terminals in the ARC are crucial for stimulation of appetite ($p<0.001$).

Conclusion: For the first time, when NTS-TH axons in the Arc were stimulated, strong orexigenic effect is observed

Keywords: tyrosine hydroxylase, catecholamine, hypothalamus, optogenetics, electrophysiology

O-068

Anatomy of singing

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In the living world, voice has been used to provide communication from distance for centuries. With the evolutionary process, humankind has gotten the ability of changing the voice in mouth and larynx for being more understandable. Thus, in the daily life, human beings have communicated by means of speaking. Besides, they have sung with notes in order to show their inner world. Using the voice correctly is important for the health of the vocal cords. As a result of misuse of voice, some vocal cord lesions (nodules, polyps etc.) can be seen frequently. So, practising of various vocal techniques and checking them can be much more harder. In this study, the laryngoscopic images of various vocal techniques like chest voice, head voice, mixed voice, falsetto, crescendo, decrescendo, legato, staccato, glissando, vibrato and thrill were observed while singing. Based on these findings, which laryngeal muscles work most was shown.

Keywords: voice, anatomy, sing

O-069

Myositis ossificans seen in left lateral cervical region: case report

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Objective: Myositis ossificans is a heterotopic bone formation in muscle tissue, usually due to trauma. Reported without trauma is rare. In this case, it was found in supraclavicular part of brachial plexus, between anterior scalene and middle scalene.

Methods: This case was seen in a 22-year-old female patient with no history of trauma who presented to the clinic with neck pain, painful arm movements and loss of strength. Physical examination and radiological evaluations (MRI) revealed a painful mass attached to the scalene muscles in left lateral cervical region. The mass was excised under appropriate anesthetic conditions.

Results: In the requested pathology report, mature lamellar bone tissue at the periphery, increased cellularity at the central and swollen osteoblasts and osteoid formation in the middle zone were observed and myositis ossificans was diagnosed. This case is a type of hereditary, progressive myositis ossificans that is both risky and uncommonly developed without trauma. It occured in fascia or aponeurosis which was located in upper part of supraclavicular part of brachial plexus between anterior scalene and middle scalene.

Conclusion: It is important to identify such rare cases by separating them from infectious and malignant diseases in order to guide physicians in the related sciences.

Keywords: lateral cervical region, myositis ossificans, scalene muscles

O-070

Hearing loss due to the mumps: case report and literature review

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Objective: Childhood hearing loss has a profoundly negative impact on speaking, language learning, intellectual development, and school achievement. Mumps is an infectious disease caused by paramyxovirus that leads swelling of the gl. parotidea due to its close neighborhood. Mumps-associated hearing loss usually has a unilateral and sudden onset. In this review of a 12-year follow-up case with unilateral hearing loss due to mumps, we aimed to contribute to the further studies by determining the role of mumps-associated hearing loss in the literature.

Methods: A 20-year-old male had a sudden onset of hearing loss with fever and pain after 2 days going out in cold weather when he was 8. He was diagnosed with almost total unilateral hearing loss due to mumps, 6 days after admission to the doctor. Since the patient diagnosed too late for treatment, he lived with unilateral hearing loss. We evaluated the literature and the studies related to our topic.

Results: The most common clinical findings in mumps are parotitis (60–70%), epididymo-orchitis (25%), encephalitis (1–10%) and transient high-frequency hearing loss (4%). Unilateral permanent hearing loss occurs in 1/20.000 cases according to the literature review. It has been reported that

mumps virus may lead almost complete hearing loss and serious complications not only in children but also in adults.

Conclusion: Parents should be informed about hearing loss and suspicion of mumps and the priority of vaccination should be emphasized. Since mumps-associated hearing loss may be variable, the evaluation of case reports would be beneficial.

Keywords: mumps, hearing loss, ear, anatomy, parotid gland

O-071

Volumetric analysis and evaluation of maxillary sinus by three dimensional (3D) imaging in patients with septum nasi deviation

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Objective: Septal deviation, which reduces nasal air flow and disrupts oxygenation, may affect the volume of maxillary sinus. In this study, we aimed to investigate the effects of nasal septum deviation on maxillary sinus volume on both sides with and without deviation. Methods: Computed tomography images of 100 patients with nasal septum deviation were evaluated retrospectively. Maxillary sinus volumes with and without deviation were compared. Two-dimensional (2D) images were evaluated by making them three-dimensional (3D) with Osirix program.

Results: Our findings suggest that the sinus maxillary volumes tend to be higher on the contralateral side of the nasal septum deviation. In our study, it was found that there was a difference between maxillary sinus volumes on deviated and non-deviated sides of nasal septum deviation but this difference was not statistically significant ($p>0.05$).

Conclusion: In patients with nasal septum deviation, there was a difference between maxillary sinus volumes on deviated and non-deviated sides, but this difference was not statistically significant.

Keywords: deviation, nasal septum, maxillary sinus, 3D

O-072

Radiological assisted anatomical measurements in anterior cervical surgery

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Objective: To evaluate the effects of implantation of PEEK cage containing DBM on the height and cross-sectional area of the foramen, the intervertebral disc height

Methods: This prospective study was conducted in Neurosurgery Department of Ufuk university Dr. Rıdvan EGE Hospital, between April 2016 and April 2019. The early and late radiological changes and clinical outcomes of 20 patients who underwent treatment with PEEK cage (Solis; Stryker ınstruments, Kalamazoo, MI) containing demineralized bone matrix (DBM; Grafton, Osteotech, Eatontown, NJ, USA) were analysed. Patients underwent plain radiographs of the cervical spine and multislice computarized tomography scanning pre-operatively for intervertebral discs heights, cross-sectional areas and heights of neural foraminas (distance between the lower and upper pedicle) bilaterally in the effected level and in the upper and lower adjacent levels. All patients were re-evaluated on the one day and three, six and twelve months post-operatively and the measurements were compared with preoperative values. Statistical analysis was performed on software (Sytat for Windows, version 16.0, SPSS). Results were analysed student's t-test. The probability of values less than 0.05. Results were expressed as mean±SD (standard deviation).

Results: Our findings demonstrated that cervical intervertebral height and cervical foraminal area significiantly increased at the operated level after cervical PEEK cage placement in the anterior cervical discectomy and fusion surgery ($p<0.05$).

Conclusion: There were seen no negative effect on the neural foramens of the adjacent levels.

Keywords: anterior servical disc surgery, PEEK cage, adjacent segment, radiological measurements

O-073

Evaluation of morphometric features of mandible on three-dimensional computed tomography

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Objective: To determine the variable characteristics of age and sex by performing some morphometric measurements of mandible in adult individuals and to present new data about mandible morphometry.

Methods: Mandibles of 80 individuals' (40 males, 40 females), aged between 5 and 98 years, computed tomography (CT) images obtained from the Suleyman Demirel University Research and Application Hospital 'Hospital Image Archive System (PACS) were examined. The following parameters were measured on the right and left sides of each mandible: Mandibular notch anteroposterior length (MN-Anteroposterior), mandibular notch depth (MN-Depth), gonion-mandibular condyle distance (Go-MC), angle of mandible (AM), The distance of the mental foramen to the upper and lower edges of the mandible (MF-Upper, MF-Lower), mental foramen-gonion distance (MF-Go), mental foramen-mandibular symphysis distance (MF-MS). Also bigonial distance measurements were measured for each mandible. Except angle of mandible, measurements were performed using RadiAnt Dicom Viewer; angle of mandible was measured using ImageJ. The data was analyzed using SPSS 20 for Windows.

Results: When the parameters were compared by gender, a significant difference was observed in MF-Go, MF-Lower, Go-MC, MN-Depth and right MN-Anteroposterior parameters. The mean values of all parameters except the right and left angles of mandible were higher in males than females. In all parameters, no significant difference was determined between right and left sides.

Conclusion: Most of the morphometric properties of mandible showed significant differences according to gender and age groups. These data will be important for sex and age prediction in forensic medicine and anthropology and in surgical interventions to mandible.

Keywords: RadiAnt, ImageJ, forensic medicine, anthropology, CT

O-074

Morphometric analysis of the orbit and orbital structures with three dimensional computed tomography

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Objective: The orbit and the orbital structures on three dimensional computed tomography images were aimed to investigate morphometrically.

Methods: Our study was conducted using CT images of total of 88 cases (43 males, 45 females) between the ages of 4–89. The measurements were performed using RadiAnt DICOM viewer 4.6.9 by converting the images into their three dimensional pattern. The maximum distance between the upper and lower walls (ULWO) and internal and external walls of the orbit (IEWO), the minimum distance between the orbital medial walls (MOM), the distance between the infraorbital foramen and the lower orbital Wall (IOF-LOW), optical nerve width (ON), interzigomatic line length (trace line) and skull's transverse diameter were measured.

Results: All parameters were positively correlated with age. There was no statistically significant difference between the right and left sides. In the comparison between the genders, optic nerve width and skull diameter were found to be greater in males. ULWO is 3.79 cm on the right, 3.83 cm on the left side, IEWO is 3.84 cm on the right, 3.80 cm on the left, MOM is 2.05 cm, IOF-LOW is 7.62 mm on the right, 7.72 mm on the left, ON is 6.14 mm on the right, and the 6.18 mm on the left side, trace line is 9.53 cm and the skull diameter is 14.33 cm according to our measurements.

Conclusion: We think that the results obtained will contribute to the clinical evaluation of the branches such as eye surgery and plastic surgery, radiological and anatomical studies on this subject.

Keywords: CT, morphometry, optic nerve, orbit, RadiAnt

O-075

Sex determination from radiographic calcaneus measurements

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Objective: Sex determination is a fundamental step for establishing the biological profile of an individual and is applied by taking advantage of differences in shape and size of any skeletal element. Calcaneus has an important role in weight transfer and gait functions in the locomotor system, giving morphological and morphometric differences depending on the effect of other factors. The aim of this study is to create regression models that provide the assessment of sex determination from radiographic calcaneus measurements.

Methods: Lateral radiographs of right and left feet of 100 patients (55 female–45 male) who applied to Dokuz Eylül University Orthopedics and Traumatology department were taken. Four linear measurements of calcaneus (maximum length, maximum height, minimum height, load arm length) were taken from the radiographs. The descriptive statistics of all the measurements have been presented and the comparison of measurement values between genders have been evaluated with t-test analysis. Logistic regression analysis was applied to determine the sex and the models were obtained.

Results: The t-test analysis showed that the mean of all measurements of the male group was significantly higher than that of the female group. Sex determination models have accorrect estimation rates of 80.6–86.7% and 78.8–86.9% by using right and left side measurements respectively.

Conclusion: In the obtained sex determination models, the load arm length added to the calcaneus length and height measurements increases the accurate estimation rate of the model. According to this information, radiographic calcaneus measurements can be used as an alternative method for sex determination.

Keywords: calcaneus, radiography, sex determination

O-076

Association of major anatomical structures of the abdomen with surface anatomy in children: preliminary report

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Objective: Aim of this study was to evaluate the association between major anatomical structures of abdomen and surface anatomy in children.

Methods: Computure tomography scans of 40 patients (24 male,16 female) without abdominal pathologies, aged between 0–18 (mean: 10.81±4.52) was evaluated. Vertebral levels of Tr.coeliacus (TRC) A. mesenterica superior (SMA) A. mesenterica inferior (IMA) were recorded. Vertebral levels and relationship to the midline (LMA) of formation of vena cava inferior (VCI) and bifurcation of aorta abdominalis (BAA) were measured. Lengths and costal relationships of the kidneys, vertebral levels of superior poles (PS), inferior poles (PI), A. renalis dextra (ARD) and A.renalis sinistra (ARS) were recorded. Vertebral levels and relationship to the midline of renal hilas (HR) were measured. The position of the spleen and its long axis were recorded with reference to the overlying ribs. The distance between anterior limit of spleen and mid-axillary line (LAM) was measured.

Results: Vertebral levels were TRC: T12, SMA: L1, IMA: L3, BAA: L4, VCI:L4, PS: T12 at both sides, PI: L3–4 on right, L3 on left, both renal arteries: L1, both HR: L2. BAA 3.6±3.71 mm to the left, VCI 11.48±5.02 mm to the right of midline. Renal lengths were 90.44±12.78 mm on right 93.32±14.9 mm on left. HR-LMA distance was 36.27±9.45 on right, 37.42± 11.76 mm on left. Spleen was located between 9–11 ribs and the distance with LAM was 32.96±20.43 mm. Splenic long axis corresponds to 11th rib in males, 10th rib in females. Sex is significantly associated with this variable ($p<0.05$). Renal lengths and both HR-LMA distances increased with age ($p<0.05$).

Conclusion: Surface anatomy shows differences with age and gender. Understanding of these differences is important in pediatric surgery and invasive procedures.

Keywords: surface anatomy, pediatric anatomy, radiologic anatomy, abdomen

O-077

The investigation of the development of carrying angle in fetal period

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Objective: The aim of our study was to determine the development of the carrying angle, gender and side differences in human fetuses during the intrauterine period.

Methods: This study was carried out in our Anatomy department on 20 human fetuses (13 males, 7 females) fixed with 10% formaldehyde, between 10 and 35 weeks of gestation, without external anomalies, after ethics committee approval. Age of fetuses was determined according to general growth parameters. We used similar methods from former carrying angle studies. First, the upper extremities, were positioned 180 degree extension and supination, the midpoint of the humerus head (point-A), the midpoint between lateral and medial epicondyles (point-B) and the midpoint between the styloid processes of ulna and radius (point-C) were determined. Afterwards, the distances between the three points and carrying angles were determined using the ImageJ.

Results: The mean values of the arm length between the points A and B, the forearm length between the points B and C and the carrying angle between the points A, B and C were determined by gender, age and sides during the fetal period. There was no difference between genders in general fetus growth parameters. Although there was no difference between right and left sides by gender, the carrying angle differed significantly ($p<0.05$). The carrying angle decreased by age during fetal period.

Conclusion: We hope that the carrying angle data obtained from our study covering fetal period might contribute to the literature. The carrying angle should be further examined with larger studies in the prenatal and postnatal periods.

Keywords: carrying angle, fetal development, fetal anatomy

O-078

Development of the extraocular muscles during the fetal period

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Objective: The present study aimed to investigate the morphometric development of the extraocular muscles during the fetal period and to create the modified spiral of Tillaux.

Methods: Our study was carried out with dissection method on 214 fetal eyes (117 males, 97 females) obtained from 108 fetuses aged between 13–40 gestational weeks. The tendon widths of the extraocular muscles and the distances of the tendon attachment sites to the limbus were measured. Modified spiral of Tillaux was created.

Results: We added the tendon widths and the tendon-limbus distances of the superior (SO) and inferior (IO) oblique muscles to the modified spiral of Tillaux, in addition to the rectus muscles. Tendon widths and tendon-limbus distances were determined. When the tendon widths were compared between the genders, no statistically significant difference was observed ($p>0.05$). When the tendon widths were compared between the sides, it was determined that SO was greater in the left eye ($p<0.001$), and other extraocular muscles were greater in the right eye ($p<0.001$). In the comparison of the distances of the tendon attachment sites to the limbus between the genders, no statistically significant difference was observed ($p>0.05$). In the comparison between the sides, there was no statistically significant difference in SO and IO. A statistically significant difference was found in the rectus muscles and this was determined to be greater in the right eye.

Conclusion: We believe that these data will contribute to the disciplines such as fetopathology, obstetrics, ophthalmology and plastic surgery, and later studies on this subject.

Keywords: human fetus, development, extraocular muscles, spiral of Tillaux

O-079

The protective role of vitamin E against the teratogenic effect of caffein on embryonic metaquarpal bone development

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Objective: It is reported that caffeine, which is an important stimulant, adversely affects bone health, causes headache, insomnia, impaired concentration, increased pulse and blood pressure, stomach problems, spontaneous abortions in pregnant women and low birth weight infants. Therefore, caffeine is one of the most studied and discussed nutritional components of recent years. The aim of this study is to investigate the effect of caffeine on the development of hand bones in the embryo during pregnancy and the protective role of vitamin E against this effect.

Methods: Sixteen adult female Wistar-Albino rats were divided into four groups as control, caffeine, caffeine + vitamin E and vitamin E (n=4 each). Caffeine 1–20. Caffeine and vitamin E were given to the treatment group. Fetuses were taken by cesarean on the 20th day of pregnancy. The skeletal systems of ten fetuses from each group were stained using double staining. Ossified fraction and ossification ratio was calculated using ImageJ program.

Results: When we examine the groups, there was no metacarpal bone development in the caffeine group. The total bone area of the vitamin E group was 0.28 mm2 for metacarpal bone and 0.10 mm2 for the caffeine + vitamin E group and 0.22 mm2 for the control group.

Conclusion: In this study, we observed that the fetus delayed the development of metacarpal bone in excessive caffeine consumption and had a protective effect against the negative role of caffeine for vitamin E, a potent antioxidant.

Keywords: caffeine, pregnancy, oxidation, vitamin E

O-080

Topographic anatomical points related to the most frequently used craniotomy procedures

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Objective: After the 19th century trepanation process, which was based on 7000 BC, the relationships between bone and cerebral surface structures were examined to assist surgical planning or to increase the accuracy of anatomical brain studies. The source of the word trepan from Latin to ancient French, trypanon in Greek, "borer, auger" means. Craniotomy is the surgical removal of a portion of the bone from the skull to expose the brain. In this study, cases using 5 different craniotomy methods and related anatomical topographic structures were evaluated.

Methods: In this study, a comprehensive literature review was performed in order to define the anatomical features of the cortical landmarks of craniotomy methods used in brain surgery.

Results: Bifrontal craniotomy involves making an incision in the scalp behind the hairline and removing the bone that forms the contour of orbits and forehead. Supra-orbital craniotomy makes a small incision in the eyebrow to access tumors in front of brain or pituitary tumors. Retro-sigmoid craniotomy allows removal of skull base tumors from a small incision behind the ear, allowing access to the brain base and brain stem. Orbitozygomatic craniotomy involves making an incision in the scalp behind the hairline and removing the bones that form the cheek contour. Translabyrint craniotomy is a procedure that involves making an incision in the scalp behind the ear, then removing the mastoid bone and part of the inner ear bone.
Conclusion: In this study, craniotomy types and operations they were used were discussed. The anatomical structures to be considered in the surgical approach were evaluated.

Keywords: craniocerebral topography, craniotomy, anatomy, neurosurgery

O-081

The clinical anatomy of the subthalamus

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The subthalamus which includes subthalamic nucleus (STN) and zona incerta locates between the thalamus and hypothalamus. The anatomy of this region is important in the surgical treatment of Parkinson's disease. The STN, the primary target of deep brain stimulation, used for a quarter century, receives axons from the motor, limbic, and association areas in the cerebral cortex (hyper-direct pathway of the basal ganglia cycle). In addition, glutamatergic neurons of STN modulated by axons from the striatum and globus pallidus stimulate the output nuclei of the basal ganglia (globus pallidus interna and substantia nigra pars reticulata). High frequency stimulation of the motor subdomain of the STN (130 Hz) decreases the pathological beta band oscillatory activity (15–25 Hz) observed in Parkinson's disease, resulting in improved Parkinson's symptoms. The failure of some of these interventions to STN and/or observation of different neurological findings suggests that the anatomical structure and connections of this brain region have not been adequately analyzed. In this presentation, we have reviewed the structure, neighboring structures and connections of subthalamus and especially STN in the light of current information. Thus, we would like to draw attention to relevant information for the evaluation of Parkinson's disease, targeting the lower regions of STN in surgical interventions and personalizing deep brain stimulation.
Keywords: subthalamus, clinical anatomy, Parkinson's disease

O-082

The segmentation of the posterior cerebral artery: a microsurgical anatomic study

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Objective: There are still different descriptions of the segmentation of the posterior cerebral artery (PCA), although there is a radiological and anatomical consensus on the segmentation of the anterior and the middle cerebral artery. This study aims to define the most appropriate localization for origin and end points of the segments through reviewing the segmentation of the PCA.

Methods: The segments and the cortical branches originating from those segments of the 40 PCA of 20 cadaver brains were examined under operating microscope. In this research, the P1, P2, P3, P4, and P5 classification of the segmentation of the PCA is redefined. This redefinition was made to overcome the complexities of previous definitions.

Results: The P1 segment in this research takes its origin from the basilar tip and ends at the junction with the posterior communicating artery. The P2 segment extends from the junction with the posterior communicating artery to the origin of the lateral temporal trunk. This point usually situates on one level of posterior of the cerebral peduncle. The P3 segment extends from the origin of the lateral temporal trunk to the colliculus (quadrigeminal point). The P4 begins at the quadrigeminal point and ends at the top of the cuneus. While the P5 segment is named as the major terminal branches of the PCA, no definite border was found between the P4 and the P5 segments.

Conclusion: In this study, the segmentation of the PCA, developed by Krayenbühl and Yaşargil, was redefined to be more appropriate for radiological and anatomical purposes.

Keywords: posterior cerebral artery, microsurgical anatomy, segmentation

O-083

A research of origin, course and variations of labyrinthine artery intended for posterior fossa surgery

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Objective: Fossa cranii posterior is a small area where most vital structures are located in. Knowledge of the surgical three-dimensional anatomy of the region is important for the intervention of pontocerebellar angle tumors and acoustic neurinomas. In this study, the origin of the labyrinthine artery, its course, diameter, relationship with cranial nerves and variations were evaluated.

Methods: 10 Male cadaver heads fixed with 10% formalin in Ege University School of Medicine Department of Anatomy was opened asterion centered with drill. The structures were dissected from superficial to deep by passing through the drilled hole. Deep structures of fossa cranii posterior were found, labyrinthine artery was evaluated with endoscope camera and photographed with metric.

Results: Labyrinthine artery arised from anterior inferior cerebellary artery on 6 sides and basilar artery on 12 sides. Basilar artery origined labyrinthine arteries coursed with facial nerve and vestibulocochlear nerve; and entered internal auditory meatus. One double and one triple labyrinthine artery variation was found. The mean diameter of labyrinthine artery was 0.46±0.19 mm on the right side and 0.58±0.43 mm on the left side, excluding two samples with multiple variations.

Conclusion: Fossa cranii posterior is a difficult area to work because of containing number of vital structures, the structures in the region being highly variable and the surgeon has a very limited space to work. To know the anatomical features of the labyrinthine artery, and its related structures, is important in terms of understanding the three-dimensional anatomical structure and variations of the region where minimally invasive surgical techniques are applied.

Keywords: origin of labyrinthine artery, variations of labyrinthine artery, fossa cranii posterior surgery

O-084

Comparative study on the gray matter volume and neurohypophysial peptide effect in the temporal lobe regions of Alzheimer's patients and healthy persons

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Objective: The aim of this study is the volumetric comparison of the cortical morphometry of the gray matter in the certain temporal lobe regions important for remembering people, places, information on family and environment, and hippocampus, in patients of Alzheimer's and healthy persons and investigate their relevance in terms of neuropeptides.

Methods: In the group of patients diagnosed with mild AD (n:8) and the control group without any brain pathology (n:9), who matched in that age, education, and preferred hand, measurements of gray matter volume and 3-dimensional MR imaging were performed. Following a 10-minute hugging, blood samples were taken from all participants for OT and AVP analyses. Neuropeptide analyses were performed with ELISA.

Results: MR images of 10 men and 7 women were used in the study. All participants were right-handed and their mean age was 72±4 years. In comparison of groups in terms of the relation between the fusiform gyrus, parahippocampal gyrus, entorhinal cortex, hippocampus structures and neuropeptide

levels, it was found that in the patient group, the left hippocampus volume (p=0.004) and OT values (p=0.028) were statistically higher than in the control group. Furthermore, a strong significant positive correlation was found between age and right fusiform gyrus (p=0.008) and between age and right entorhinal cortex (p=0.009).

Conclusion: It is suggested that hippocampus atrophy can be an early predictor in the diagnosis of AD. Despite the fact that the AVP has priority in the discussions of OT vs. AVP levels in AD, our study findings showed higher levels of OT in the literature.

Keywords: Alzheimer's disease, oxytocin, vasopressin, fusiform gyrus, parahippocampal gyrus

O-085

Morphometric evaluation of the temporomandibular joint on cone beam computed tomography images

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Objective: Morphometric measurements of temporomandibular joint (TMJ); diagnosis and treatment of pathologies, evaluation of orthodontic treatment stages and understanding of age-related joint changes. The aim of this study is to contribute to the literature by determining the morphometric reference values of the bone structures of TMJ on the Cone Beam Computed Tomography (CBCT) images of healthy Anatolian individuals aged 18–65 years.

Methods: CBCT images of 171 individuals were evaluated retrospectively. A total of 35 parameters (sagittal: 18, coronal: 12, transverse: 5) were examined. Condylar process, articular tubercle, mandibular fossa, ramus of mandible, zygomatic arch and joint cavity were measured and typed.

Results: Morphometric measurements were performed on 34 parameters. Additionally shape of the head of mandible was divided into four groups as flat, convex, round and angled. Comparison of parameters with gender and joint side, and correlation with age were examined. A statistically significant difference was found between genders in 23 parameters and joint sides in 6 parameters. When the correlation of parameters with age was examined; it was found that there was relationship in 12 parameters.

Conclusion: In the diagnosis of TMJ pathologies it is important to know the morphometric values of TMJ according to age, gender and joint side. It is thought to contribute to the literature by determining the reference value ranges related to TMJ morphometry by the study. Further studies on different populations are recommended to determine standard values.

Keywords: temporomandibular joint, cone beam computed tomography, morphometry

O-086

The prevalence of bifid mandibular condyle: a cone-beam computed tomography study

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Objective: The bifid mandibular condyle (BMC) is a rare anatomic variation characterized by duplicated head of the mandibular condyle. BMC can be asymptomatic or show different symptoms such as pain, swelling, crepitation, deviation, deflection, limitation of mouth opening and ankylosis in the temporomandibular joint. The aim of this study was to evaluate the incidence of BMC and the depth of cavity monitored on cone-beam computed tomography (KIBT) images.

Methods: In this retrospective study, KIBT images taken at Gazi University, Faculty of Dentistry, Department of Dentomaxillofacial Radiology were included. The images of 540 patients, 205 males (37.96%) and 335 females (62.03%), aged between 18 and 79 years were examined. Mediolateral bifidity was evaluated with coronal CBCT sections and anteroposterior bifidity was evaluated with sagital CBCT sections. The depth of the cavity was measured by the distance between the line connecting the two highest points of the condyle head and the deepest point of the cavity. Data were evaluated with descriptive statistics.

Results: Of 30 patients (5.55%) had BMC; 19 (%63.33) of them were male and 11 (%36.66) were female. Bilateral BMC was found in four patients (%13.33) and unilateral BMC was found in 26 patients (%86.66). In unilateral BMC cases, the right side (53.84%) was affected more than the left side. The mean depth of BMC was 2.69 mm mediolaterally and 1.86 mm anteroposteriorly.

Conclusion: BMC causes several clinical symptoms. Then, dentists should be aware clinic and radiographic findings of BMC.

Keywords: anatomic variation, bifid mandibular condyle, cone-beam computed tomography

O-087

Evaluation of the relationship between age of teeth and pulpal lengths with panoramic radiography of mandibular premolar teeth

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Objective: The aim of this study was to evaluate the relationship between mandibular premolar tooth and pulp lengths and age with panoramic radiography in adult subjects.

Methods: In this study, 860 mandibular first premolar and 860 mandibular second premolar teeth were measured for tooth and pulp lengths (860 patients). Tooth and pulp length ratios were calculated for each tooth due to magnification of panoramic radiography.

Results: The age range of the individuals in the study was 18–60 (mean:) and included an equal number of males and females in each age group. Mean first premolar tooth and pulp lengths were respectively, 20.9±1.7, 15.5±1.4 mm in women, 21.7±1.7, 16.5± 1.6 mm in males and pulp/tooth length ratio were 0.74 in females and 0.76 in males. Mean second premolar tooth and pulp lengths were respectively, 21.8±1.8, 16.4±1.7 mm in females, 22.5±2.2, 16.9±2 mm in males and pulp/tooth length ratio were 0.75 in females and 0.75 in males. In the study, statistically significant and negative correlation was found between age and tooth and pulp length and pulp length/tooth length ratio ($p<0.05$). Negative correlation value was higher in the second premolar teeth than the first premolar teeth.

Conclusion: Tooth and pulp length measurements were shorter in women than in men. It was observed that the lengths of teeth and pulp of the second premolar tooth decreased more with age than the first premolar tooth. Panoramic radiographic measurements were limited.

Keywords: panoramic radiography, premolar tooth, tooth length, pulp length

O-088

Assessment of pterygomaxillary junction using cone beam computed tomography

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Objective: Le Fort I osteotomy is one of the most preferred osteotomy for maxillary orthographic surgery. Posterior part of Le Fort I osteotomy consists of disjunction the pterygomaxillary junction. Variations of pterygomaxillary junction can lead to complications and therefore should be evaluated pre-operatively. The aim of this study is to evaluate pterygomaxillary junction using cone beam computed tomography.

Methods: Total of 150 pterygomaxillary junction from 75 patients was evaluated retrospectively. Patients were grouped accourding to their maxillomandibular relationship as Class I, Class II or Class III. Head position orientation was applied on coronal section with using frontozygomatic sutures and Frankfurt horizontal plane on sagittal section. Pterygomaxillary junction was evaluated at axial section which is 3 mm superior to nasal floor.

Results: 11 measurements made for each side from cone beam computed tomography. These measurements are; Anterior length from palatinal canal (A), Posterior measurements from palatinal canal (B), Length of pterygoid plates (C), Depth of palatial canal (D), Diameter of palatial canal (E), Posterior length of maxilla (F), Length of lateral pterygoid plate (G), Length of medial pterygoid plate (H), Depth of lateral pterygoid plate (I), Depth of pterygomaxillary junction (J) and Angle of pterygomaxillar junction (K) These measurements are compared between genders and according to right and left sides.

Conclusion: Evaluation of pterygomaxillary junction preoperatively can be helpful for avoiding complications due to variations of pterygomaxillary area.

Keywords: pterygomaxillary junction, le fort ı osteotomy, orthognathic surgery

O-089

Analysis of os sacrum and os coccygis sizes calculated with CT images based on gender

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Objective: Certain bones that constitute the human skeleton play an important role in determination of gender using the skeleton. Primarily pelvis and cranium were used to predict gender. The aim of the present study was to determine the differences between the measurements of os sacrum and os coccygis length that were calculated using CT images based on gender.

Methods: The study was conducted on CT scans of 30 females and 30 males aged 25–50 years without any sacral pathology. 24 measurements were conducted on os sacrum and os cocyygis on three principal planes. In independent groups, gender difference was analyzed with t-test and Mann-Whitney U test. The value that provided the best distinction between the genders was found with ROC Analysis.

Results: It was determined that anterior (ASL) and posterior sacral length (PSL), anterior (ASCL) and posterior sacrococcygeal length (PSCL), anterior (ASC) and posterior sacral curvature length (PSC), anterior (ACC) and posterior coccygis curvature length (PCC), linea transversa 2, 3 and 4 (LTU-2, LTU-3 and 4), right interforaminal height 2 (IFYR-2), transverse (S_1-T) and sagittal length (S_1-S) of sacral 1st vertebrae were longer in males when compared to females. Furthermore, it was determined that the mean os sacrum area (SA) was larger in males when compared to females ($p<0.05$). The sacral area had the highest diagnostic value in determination of gender (85%, AUCsa =0.910).

Conclusion: The study findings suggested that in cases where the skeleton gender could not be determined morphologically, gender could be determined with os sacrum and os coccygis length.

Keywords: gender prediction, os coccygis, os sacrum

O-090

Comparison of standard measurements in growth and development follow-up and anthropometric measurements of hand-foot in 0–12 months-infants

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Objective: Growth and development of infants are determined by weight, height and head circumference measurements in 0–12 months period. These values may be found inaccurately by the subjective assessment. In addition, anthropometric measurements of hand-foot are suitable for interpreting growth and development. In this study, we compared the measurements of hand-foot images that can be archived and evaluated objectively to the standard measurements that growth and development progression are followed.

Methods: The study was performed with 222 (103 girls, 119 boys) healthy infants born at term as a master's thesis study between 2011 and 2012 at KTU School of Medicine, Department of Anatomy and Mardin Central Primary Health Care Center No. 10. The hand-foot images of the babies were digitized at defined positions. Foot length (F), foot width (FG), foot plantar length (FP), wrist length (E), hand length (H), hand palmar length (EP) and hand width (HG) were measured three times with Image J software and averaged. Correlation coefficients (r) and statistical significance values (p) were calculated using IBM SPSS 23 program using Pearson and Spearman test.

Results: In this study, we found a very strong and significant positive correlation between weight, height and head circumference and RH, LH, RF, LF measurements in girls and boys baby groups. Correlation coefficient values are between 0.859–0.946 (p=0.00).

Conclusion: We believe that hand-foot measurements will enable to be done objective evaluation, to be facilitated follow-up and to be provided a retrospective look at growth and development progression.

Keywords: anthropometric measurements, growth and development, 0–12 months infants

O-091

A comparative study of morphometric changes in the middle phalanx of the 5th finger of the dominant hand related to mobile phone use

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Objective: Smartphone pinky is a problem usually seen at the level of the middle phalanx of the 5th finger, which can also cause dysfunction and pain along the same finger. There is no study about smartphone pinky deformity in the literature. The aim of this study is to investigate the deformities that may occur as a result of using a mobile phone by placing the middle phalanx of the same finger medial while the art. metacarpophalangealis of the 5th finger is flexed and to determine the effect of this grip type on the carpal tunnel.

Methods: The first evaluations was the ratio of the circumferential length from the narrowest part of the middle phalanx of the fifth finger to the average of the circumferential lengths from the distal interphalangeal joint and proximal interphalangeal joint levels. Also, Its relationship with carpal tunnel syndrome was investigated and pain in the fifth finger and hypothenar area was evaluated.

Results: The dominant hand circumference was 95.9±6 percent, whereas the nondominant hand circumference was 4.6±0.1 percent, with a statistically significant difference (p<0.001). The average circumference measurements did not differ according to the frequency of telephone use among the groups (p=0.298).

Conclusion: The difference between measurements obtained shows that the phone used on the 5th finger causes atrophy in the finger. In addition, it was found that the frequency of telephone use had no effect on this deformity. We think that the weight of the phones used may also affect the results.

Keywords: defomity, finger, smartphone

O-092

Evaluation of lumbal lordosis biomechanics in patients with lumbal disc herniation: clinical stereological study

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Objective: Knowing the volumetric and morphometry properties of lumbar vertebrae and discus intervertebralis is important to achieve a successful approach to degenerative disc diseases. In this study, we aimed to compare the heights of intervertebral discs and concavity index values in patients with disc herniation and Mr images of healthy cases and also the corpus of lumbar vertebrae and the volumes of intervertebral discs in patients with disc herniation according to age and gender.

Methods: Changes in the concavity index of discus intervertebralis were recorded in order to evaluate the differentiation in lumbaric lordosis. The control group consisted of 50 (25 women and 25 men) lumbar disc hernias with age range 18–75 (20 women and 20 men). In both groups, the volume of the disc was evaluated by using the Cavalier method. The concavity index was evaluated as the ratio of central disc height (c) to anterior disc height (a). Increased concavity index (C/a) ratio was evaluated as reduction/flatness in lumbar lordosis.

Results: It was found that age-related degeneration and loss of volume due to dehydration occurred in the disc compared to healthy disc herniation cases.

Conclusion: The morphometric evaluation of discus intervertebralis and the concavity index of lumbar lordosis were calculated and revealed in cases with disc hernias due to age and gender, both radiologically and clinically, we anticipate that the diagnosis and treatment will provide a clue.

Keywords: disc hernias, lumbar lordosis, morphometry

O-093

Q angle and lower extremity deformities in children with and without Down syndrome: a preliminary study

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Objective: In this study, it was aimed to measure lower extremity lengths and Q angle, to investigate the frequency of lower extremity deformities (genu varum,valgum,rekurvatum and pes planus) in children with and without Down Syndrome (DS), and to determine the effect of these parameters on walking time in DS.

Methods: Twenty children with DS (DS+) and 20 children without DS (DS-), aged 2–6 years, were included. Lower extremity lengths and Q angle were measured in all children. Genu varum, valgum and rekurvatum were determined observationally. The pes planus was evaluated by footprinting. Obtained data were grouped according to age and gender, and analyzed statistically.

Results: Lower extremity length was found to be statisticaly significantly shorter in children with DS (p=0.01) (DS+, 45.7±5.13; DS-, 49.7±5.08). Q angle was not different between the two groups (DS+, 13.5±0.98; DS-, 13.5±1.14) (p=0.68). However, Q angle was significantly higher in girls than boys in the both groups (p=0.001). No genu valgum was observed in the both groups. Genu varum (DS+ and DS-, 5%), genu rekurvatum (DS+, 60%; DS-, 20%) and pes planus (DS+, 100%; DS-, 75%) were found to be variable. The frequency of pes planus was significantly higher in girls with DS than boys (p=0.07).

Conclusion: In this ongoing thesis study, lower extremity shortness and high pes planus frequency were determined in children with DS. It is expected that pes planus is observed in this age group. However, the frequency and degree of pes planus were higher in the DS+. When the cases is completed, the effect of these parameters and the deformities on gait age will also be analyzed.

Keywords: Down Syndrome, Q angle, lower extremity deformities

O-094

Evaluation of the frequency of "upper cross syndrome" among the medicine students

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Objective: Upper cross syndrome is a common postural dysfunction develops due to tonus changes in the shoulder girdle and cervicothoracic muscles. Most of the work in daily life requires to work front of the body and this faulty posture may cause contraction and shortening in some muscles and inhibition and elongation in others. It is characterized by weakness of the levator scapula, pectoralis major and the upper part of the trapezius muscle; shortening and tension of the rhomboid major-minor, serratus anterior, scalene and middle lower part of the trapezius muscle. The aim of this study was to evaluate the incidence of the upper cross syndrome among medical school students who study for long hours.

Methods: 41 volunteer medical students from Yuksek Ihtisas University were included. Observational static posture analysis and palpation were used for the evaluation of the upper cross syndrome. McGill-Melzack Pain Questionnaire was used to assess pain and SF-36 questionnaire was used to assess quality of life.

Results: Five of the criteria of upper cross syndrome were met in almost all students, but one of the criterion wasn't fulfilled. Accordingly, none of the students had upper cross syndrome. There was a relationship between students' mean pain scores and mental health status and emotional role difficulties scores (p=0.039, p=0.005).

Conclusion: Although none of the students had upper cross syndrome, it is seen that high rates of musculoskeletal pain, trigger points and tension bands in scapular muscles were remarkable. It was concluded that this might be due to long hours of work at the desk.

Keywords: pain, student, upper cross syndrome

O-095

Isolated avulsion fracture of the trochanter minor caused by minor trauma: case report and literature review

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Objective: Isolated trochanter minor fractures are very rare. While it can be seen as an avulsion fracture due to trauma in adolescents, it is almost always seen as a pathological fracture due to malignancy in adults. Since it is a rare condition, there is no consensus about diagnosis and treatment.

Methods: In this study, we present an isolated trochanter minor fracture of a 14-year-old patient who presented to the emergency department with a simple fall. In addition, we aim to review the occurrence mechanism, diagnosis and treatment methods of the cases in the literature.

Results: In the examination of our patient, pain in the left inguinal region and inability to move the thigh in the sitting position were detected. Radiography showed a apofisial avulsion fracture with a separation more than 2 cm in the trochanter minor. There were no conditions that could cause pathological fractures. Patient was successfully treated with bed rest, analgesics and NSAIDs in 6 weeks.

Conclusion: There is no comprehensive study on isolated trochanter minor fractures. Physical examination and radiography have an important role in diagnosis. An underlying pathological fracture should always be ruled out. Although non-surgical treatment is generally a successful treatment method, controlled studies are needed in more patient groups.

Keywords: trochanter minor, avulsion fracture, adolescents

O-096

Success in anatomic reduction of tibial plateau fractures: 3D patient special model

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Objective: Fractures are the most difficult to treat because of their proximity to the tibial plateau, knee joint and tibial metaphysis. Due to the limitations in the imaging of the fracture line with radiological imaging methods, treatment planning may be problematic. In this study, we investigated the surgical experience in the use of patient-specific models to guide the management of tibial plateau fractures.

Methods: Twenty patients with tibial plateau fractures were divided into two equal groups as conventional surgery and 3D model assisted surgery. With the software in the DICOM file of CT data, patient-specific preoperative fracture 3D patient-specific models were created. Detailed information on 3D patient-specific models was used as a preoperative reference.

Results: Orientation of the fracture lines, anatomical configuration and knee joint involvement were demonstrated by 3D model. The anatomic reduction of the tibial plateau fracture was determined from which parts. Operating time, volume of blood loss, tourniquet time, and intraoperative fluoroscopy for the 3D printing group were 89.5±5.9 minutes, 160.5±15.3 ml, 74.5±6 minutes and 10.7±1.76 times, respectively for the conventional group 127±14.5 minutes, 276±44.8 ml Were 104.5±5.5 minutes and 18.5±2.17 times.

Conclusion: Anatomic reduction is essential for restoring lower limb alignment due to the knee joint being subjected to excessive loads and moments. 3D anatomical models were used to understand the surgical team's understanding of the operation, and to provide information to the patient and their relatives about fracture type and treatment.

Keywords: anatomy, 3D model, patient-specific treatment

O-097

Evaluation of professional qualifications of intern doctors from radiological images

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Objective: Medical training is a long-termed process and the primary aim is the emergence of well-trained physicians. A great majority of graduated physicians will start working in the emergency services of state hospitals due to compulsory service program. They will assess the first tests of the patients and they will inform the related senior physician as a result of this assessment. The aim of the present study is to assess the mastery of intern doctors who will start the profession soon about major anatomical structures through radiological images.

Methods: Our study was conducted with 131 intern doctors at İnönü University Medical Faculty who agreed to participate in our study voluntarily. In the meeting rooms of the departments intern doctors were doing their internship, we projected previously prepared 20 radiological images (2 MR, 5 CT, 13 plain graph) on the wall and asked the students to write the name of the structure we asked in the related image on plain papers numbered from 1 to 20 that we distributed to them. IBM SPSS 22.0 for Windows program was used for statistical analysis. $p<0.05$ was considered as significant.

Results: As a result of our study 50% and higher success only in 6 questions. The average of the correct answers given by the students is 8.7.

Conclusion: A large number of departments apart from anatomy from the first year to sixth year have a responsibility in this negative picture. We think that the problem can be reduced with radiological anatomy to be added in the anatomy curriculum.

Keywords: intern doctor, professional qualifications, radiological images, anatomic structures

O-098

Acute appendicitis and appendectomy in the history

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Objective: We aimed to investigate the history of acute appendicitis and appendectomy.

Methods: Surgical literature scans were performed in order to reach the developments in the history of acute appendicitis and appendectomy.

Results: One of the oldest diseases in human history is acute appendicitis. The adhesions detected in the right lower quadrant of ancient Egyptian mummies are the first information about acute appendicitis. Leonardo de Vinci in 1492, Andreas Vesalius in 1543 showed the appendix vermiformis in their anatomical drawings. In the autopsy of a 7-year-old boy who died of abdominal pain in 1544, Jean Fernel who was considered to be the first to describe appendicitis, found that the lumen of the appendix vermiformis was obstructed and the organ perforated. In 1711, Lorenz Heister described perforated appendicitis with abscess. Claudius Amyand removed appendix vermiformis for the first time surgically in 1735. Willard Parker stated that appendicitis may cause abscess after

gangrene and perforation in 1867. In 1886, Reginald Heber Fitz described the acute appendicitis for the first time clinically and anatomopathologically. The first modern laparotomic appendectomy was performed by Charles McBurney in 1889. In 1900, Riddel stated that delaying the operation caused perforation and increased mortality, while early appendectomy reduced the mortality rate. In 1982, Semm performed the first successful laparoscopic appendectomy. Alfredo Alvarado defined the first appendicitis scoring in 1986.

Conclusion: When we look at the historical development of this subject, the modern definition of acute appendicitis and modern appendectomy was only in the late 19th century.

Keywords: appendix vermiformis, acute appendicitis, appendectomy, history

O-099

A pilot survey on student opinions of a sectional anatomy elective with play-dough modelling

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Objective: Sectional anatomy education is usually formatted as comparison of cadaveric sections with radiologic images. This method has a slow learning process, fails to simplify complex anatomic relations, and is not student centered. Play-dough modeling have been introduced as an effective low-fidelity alternative method. Here, a pilot survey on opinions of third year medical students regarding a sectional anatomy elective using play-dough modeling is presented.

Methods: Fourteen two-hour practical sessions were distributed within the respiratory, cardiovascular, digestive, urogenital, locomotor, and nerve/sense modules. Tandem teams were provided with colored play-dough and asked to construct a given region under instructor guidance. At the end of sessions, sections were obtained and were compared with relevant radiologic images followed by instructor and peer feedback. After obtaining administrative approval (date: 04/04/2018; number: 165015), students (n=22) were informed and asked to fill out an 8 item survey.

Results: Students expressed that the method simplified the sectional anatomy, facilitated knowledge retrieval, was amusing to participate, was student centered, and was an effective way of learning. Conversely, preliminary preparation and adequate references were needed. The majority of the students opined the integration of play-dough modeling into the curriculum of both second and third years.

Conclusion: Despite positive student feedback, intervention was limited to groups of 20 students due to low number of trained instructors. Therefore, it may be more suitable for medical programs with fewer students. Additionally, new research studies on the effectiveness of play-dough modeling is planned.

Keywords: anatomy education, sectional anatomy, play-dough modeling, elective

O-100

Teaching pelvis anatomy using holographic images and three-dimensional printed model

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Objective: Number of the materials used in anatomy education increases with the development of the technology. Especially, development of the virtual reality provides us to evaluate the anatomical structures three-dimensionally in more detail. The aim of this study was to investigate the effects of teaching pelvis anatomy using holographic images and three-dimensionally printed pelvis model on the medical students.

Methods: In presented study, we used the computed tomography images of a 44-year-old woman who did not have any orthopedic disorders. The pelvis model exported after three-dimensional reconstruction using Osirix-Lite software. These exported images imported into the Blender software for vertex correction and then imported into the Meshmixer software for final corrections. Holographic image that obtained from the computed tomography images imported into the Microsoft-Hololens and this model was also printed three-dimensionally. After those procedures, pelvis anatomy was taught to the medical students using holographic image and three-dimensionally printed pelvis model.

Results: The most common problem faced by medical students during anatomy education is to understand the anatomical structures in three-dimensional. As a result of our study, using holographic images and three-dimensional model during anatomy lectures is effective on understanding the anatomical structures in three-dimensional besides classical anatomy education.

Conclusion: The use of the hologramik images in anatomy education is a reliable method especially in the evaluation of the anatomical structures in three dimensional. Furthermore, using three-dimensional models which obtained from real patients' computed tomography series is significantly useful method for medical students who had difficulties in learning anatomy during anatomy education.

Keywords: pelvis, anatomy education, hologram, three-dimensionally model

O-101

The effect of anatomical localization of lung tumors and their correlations to the other variables on staging of lung cancer by using whole body PET/CT images

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Objective: The aim of this study was to retrospectively investigate the effect of anatomical localization of lung tumors and their correlations to the other variables on staging by using whole body PET/CT images.

Methods: The patients whose whole body PET/CT images taken for primary staging for lung cancer referred to Department of Nuclear Medicine between February 2018–2019, were evaluated. Ninety patients who had sufficient information in the hospital database, not been given any treatment, no surgical history and whose lesion morphologies were suitable were included in this study. Demographic characteristics, pathological types of lesions, the localization of lesions in both mediastinal lymph node stations, segments, SUVmax and tumor's size were determined. IBM STATISTIC 20 program were used for statistical analysis.

Results: The most encountered pathological type was adenocarcinoma. There were no significant relationships among gender and the pathological type, tumor size, SUVmax, mass structure, tumor localization ($p \geq 0.05$). Tumoral lesions were more common in the upper lobes of the bilateral lung (52.3% right, %21.2 left and $p \leq 0.05$). There were significant relationship for PET/CT positivity between tumors in the left apicoposterior segment and left paratracheal, subaortic, paraaortic and left hilar lymph node stations.

Conclusion: The positive relationships among lesions of left lung apicoposterior segment and left paratracheal, subaortic, paraaortic and left hilar lymph node stations may affect the patient management for diagnosis and treatment of the lung cancers. This findings may show that the classification of these lesions in TNM staging should be reconsidered with the studies which will include the great number of patients's series.

Keywords: Bronchopulmonary segments, lung neoplasms, lymph node stations, PET-CT

O-102

The use of diffusion tensor and functional magnetic resonance imaging before cranial surgery

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Objective: In neuro-oncology, the main principle is the preservation of functional anatomical structures as well as maximum tumor resection. Pathways are demonstrated by diffusion tensor imaging (DTI), the regions of the brain where instant oxygen usage is highest are shown by functional MRI (fMRI), and their relationship with surgical site can be evaluated.

Methods: MR-navigation, DTI and fMRI images of patients were taken and 3D colored maps were created on workstation. These images were used in surgery, and patients' postoperative clinical findings were evaluated.

Results: Fifteen patients (4 females, 11 males) aged 29–69 years (mean age 44.8) who had DTI and fMRI between 2016 and 2019 were included in the study. One patient was operated for cavernoma and 14 patients for tumor. Pathological results were Grade IV Glioblastoma in 8, oligodendroglioma in 4 patients, anaplastic astrocytoma (Grade III) in 1, and low grade astrocytoma (Grade II) in 1 patient. There was no postoperative neurological deficit in 7 patients, transient dysphasia in 1 patient, and worsened neurological deficit in 2 patients. There was no difference between pre and post-operative neurological examinations in other patients.

Conclusion: Our results showed that DTI and fMRI can assist preoperative evaluation of eloquent areas of the brain, and allow effective preoperative surgical planning. So, decrease in recurrence and morbidity rates, protection of cerebral functions, and increase in quality of life of patients are expected with widespread use of DTI and fMRI. Multimodal MRI (MRI, DTI, fMRI) is helpful for planning of safe surgical resection.

Keywords: diffusion tensor imaging, functional MRI, multimodal magnetic resonance ımaging, neurooncological surgery

O-103

A comparative analysis of the magnetic resonance T1 3D sequences and brain segmentations of adolescents and adults

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Objective: In our study, the purpose was to determine the changes in brain areas in adolescence and adulthood by using Magnetic Resonance Imaging (MRI); and to create an idea on how these might be reflected in the clinical use.

Methods: In our study, the MR images that were obtained from a total of 20 individuals with 3D T1 sequence as 5 female and 5 male individuals who were in adolescence (13–18 years) and the MR images of 5 female and 5 male adolescents (23–28 years) who presented to ALKU Alanya Training and Research Hospital with headache as a clinical pre-diagnosis with no pathologies between January 2018 - August 2018 were examined with the VolBrain Method.

Results: According to the statistical analyses, the total cerebrum white matter volume was found to be higher in adults than in adolescents at a significant level ($p<0.005$). The total cerebrum gray matter volume, on the other hand, was higher in adolescents than in adults at a significant level ($p<0.005$). The total cerebellum gray matter volume was found to be higher in adolescents at a significant level when compared to adults ($p<0.005$).

Conclusion: We found few studies that were conducted on the same field as our study in the literature. The VolBrain Program was not used in these studies, and the parameters that were examined were limited. As we will examine the volume of the brain structures of adolescents and adults in detail with the

VolBrain program, we believe that our study will contribute to the literature.

Keywords: adolescent, brain volume, volbrain, magnetic resonance ımaging (MRI)

O-104

The importance of renal artery anomalies in aortic surgery

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Objective: Renal artery and renal vein variations are reported at a rate of 25–40% in the literature. Renal artery variations have become important because of the increasing interventional radiologic procedures, urological and vascular surgeries, and renal transplantations. The purpose of the present study of ours was to evaluate the renal artery variations encountered by us, and also to provide an idea on how these might be reflected in the clinical practice.

Methods: In the present study of ours, the thoraco-abdominal CT Angiogram images of 500 patients that were obtained in ALKU Alanya Training and Research Hospital between January 2018 and 2019 were examined. It was determined that there were bilateral paired renal arteries in two male patients, and left accessory renal artery in one female and four male and patients.

Results: As a result of the PACS scan, left accessory renal artery was detected in 5 patients, and bilateral paired renal artery was detected in 2 patients from among the 500 patient images.

Conclusion: It is necessary to know the anatomy and variations of renal vessels in the surgical interventions on the aorta and abdominalis in renal transplantations. It was reported in previous studies that these arteries might cause pressures on the ureter or pelvis renalis because of their neighboring localization, and for this reason, they might cause dilatation and hydronephrosis over time. Be believe that renal vascular anomalies that are investigated in this way will shed light on the future in terms clinical evaluations.

Keywords: renal artery, anatomy, CT Angio, cardio-vascular surgery

O-105

In-hospital mortality and major complication rates are higher in patients with anatomical coronary artery anomaly

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Objective: Coronary artery anomalies (CAA) are seen below 1% angiographically. CAA can be mostly asymptomatic and hemodynamically important ones may cause sudden death. Especially during coronary angiography, it may have negative effects on survival due to prolonged procedure times. The aim of this study was to investigate in patients with CAA whether there is a relationship between CAA and in-hospital mortality and major complication rates.

Methods: Between January 2017 and June 2018, angiography films and reports of 3500 consecutive patients who underwent coronary angiography in our hospital were examined for coronary artery anatomy and anomaly. Coronary artery origin, course and outcome anomalies were recorded. Deaths in the hospital, hematoma of the groin, pseudoaneurysm of the entrance artery, and contrast induced nephropathy (CIN) were recorded.

Results: CAA was detected in 24 (0.68%) patients. Eighteen patients (75%) were male, and study population's mean age was 54±11.4 years. Circumflex artery (Cx) originating from the right CA was the most common anomaly with 11 cases (45.8%). Other anomalies; 3(12.5%) left CA with right coronary sinus outlet, 1 (4.1%) right coronary sinus outlet CX, 6 (25%) coronary fistula and 1 (4.1%) single CAA were present, while 2 (8.3%) had both CX with right coronary sinus outlet and coronary fistula anomalies. Major complications were observed in 14 (58.3%) patients with CAA. Three(12.5%) patients had in-hospital cardiovascular death, 4(16.6%) had hematoma in the groin, 3 (12.5%) had pseudoaneurysm in the entry artery and 4 (16,6%) had CIN.

Conclusion: In-hospital mortality and major complication rates are higher in patients with CAA than in patients with normal anatomy.

Keywords: coronary artery anomalies, in-hospital mortality, major complication

O-106

An anomaly of the right aortic arch with the left aberrant subclavian artery diagnosed in adulthood

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Objective: Variations in number, position, and branching pattern of the aortic arch during the intrauterine period may appear as "aortic arch anomalies" in adulthood. This type of the congenital malformation can be seen in approximately 0.1% of the adult population. It is classified as a rare malformation that constitute 1–3% of congenital heart disease. Aortic arch anomalies may be detected incidentally during radiological imaging in adults. In the embryonic period, the ventral and dorsal aorta are connected by six primitive aortic arches. In normal individuals, the right 4th arch regresses and thus the left 4th arch forms the left aortic arch. If the left 4th arch regresses and the right 4th arch remains, the right arch aortic anomaly occurs.

Methods: A 75-year-old female patient was admitted to the emergency room with acute ischemic stroke. Thoracic CT

examination revealed that the aortic arch was located on the right side of the trachea and the left subclavian artery had an aberrant course behind the trachea and esophagus.

Results: In the literature, there are studies that argue that variations in the branching of the arch of aorta may lead to changes in the flow of cerebral vessels, leading to the risk of cerebrovascular diseases. Normal cardiac anatomy can be seen in aortic arch anomalies.

Conclusion: Having detailed information about the variations of the aortic arch may help prevent complications that may occur during radiological or surgical interventions in the head - neck and chest regions.

Keywords: aberrant left subclavian artery, aortic arch anomaly, right aortic arch

O-107

Situs inversus transversus and Kartagener syndrome

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Objective: Situs inversus totalis (SIT) is a congenital positional anomaly characterized by transposition of abdominal viscera associated with a dextrocardia. Generally individuals with SIT are asymptomatic and have a normal life expectancy. Many people with SIT are unaware of their unusual anatomy until they seek medical attention for an unrelated condition. The reversal of the organs may lead to some confusion as many signs and symptoms will be on the reverse side. In Kartagener syndrome, SIT is associated with chronic sinusitis and bronchiectasis. The aim of this study is to present our experience with SIT patients.

Methods: Patients who were admitted to Istanbul Okmeydanı Training and Research Hospital between January 01, 2016 and June 30, 2019 for various reasons and diagnosed as SIT were investigated. In this study, computed tomography and magnetic resonance reports were reviewed. The files of the patients with SIT were retrospectively reviewed. Patients with Kartagener syndrome were also identified. In addition, the patients who were hospitalized in the surgical clinic and underwent surgical treatment or invasive procedures were examined.

Results: A total of 38 patients were included in the study. Twenty-one (55%) of the patients were female and 17 (45%) were male. The mean age was 42.5 years. Eight (21%) patients had Kartagener syndrome. One patient underwent laparoscopic surgery for acute appendicitis. One patient underwent emergency endoscopic retrograde cholangiopancreatography and laparoscopic surgery for acute cholangitis. Eight (21%) patients had malignancy.

Conclusion: The prevalence of SIT is less than 1 in 10.000 people. However, physicians should be aware of this anatomical variation.

Keywords: situs inversus totalis, Kartagener syndrome, anatomy

O-108

A single coronary ostium originating from the left sinus valsalva and arteria coronaria dextra originating from the distal part of the ramus circumflexus: case report and literature review

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We aimed to report a single coronary artery originating from the left sinus valsalva and an abnormal outlet of the arteria coronaria dextra (ACD) originating from the distal part of the ramus circumflexus (CX). Case presentation: A 58-year-old male patient was admitted to hospital with atypical chest discomfort. Basal electrocardiogram and cardiac enzymes were normal. The exercise test showed coronary ischemia. Coronary angiography was performed. ACD could not be cannulated. A non-selective injection revealed no coronary artery originating from the right sinus valsalva. Selective injection of the left coronary sinus revealed arteria coronaria sinistra (ACS). ACS was divided into two branches: ramus interventricularis anterior (LAD) and CX. CX was located in the normal anatomical region without lesion. A lateral branch that emerging from distal part of CX, run along the posterior sulcus atriventricularis to the level the ACD. Severe obstruction was detected in the LAD. Surgical revascularization was considered because of short course of the ACS and critical stenosis was osteal of LAD. In the literature, 29 cases similar to our case; 5 cases have been reported in our country (four females, one male). No lesion was detected in three patients, whereas LAD lesion was detected in two patients. Generally, cases with single coronary ostium are considered to be benign. However, these patients experience the symptoms of coronary disease more critically because of dependence on one coronary artery. That's why, we think that the recognition of this coronary artery anomaly might be useful for heart team.

Keywords: single coronary artery, outlet anomaly of coronary arteries, coronary angiography

O-109

Effects of banana peel juice and cherry seed oil in experimental wound healing model

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Objective: Increased side effects of synthetic substances and the resistance of organisms to antimicrobial drugs have increased the importance of natural plant resources. It is also very important that these plants, which are used in traditional medicine, as a

potential source of new antimicrobial and antioxidant compounds, be investigated scientifically because of the increasing consumer use. The aim of this study is to determine the possible effects of banana peel juice and sour cherry seed oil in wound healing as an alternative to clinical use.

Methods: Male Balb-c mice aged 12–18 months were used in the study. Each group was arranged as n=6 and Group 1: Banana peel juice, 2: Madecasol, 3: Control, 4: Cherry seed oil group. Full thickness wounds were created on the back of the mice with punch biopsy device and treated according to the groups. The photographs taken immediately after the operation and on the 5th day were evaluated in terms of the healing rates of the wound tissues in digital measurement programs. Following sacrification at the end of the 5th day, 5 mm. sections from the wound tissues were stained with hematoxylin-eosin (HE) and Masson's trichrome stains. Histopathologicalscoring was performed blindly and evaluated for epithelial damage, congestion, inflammatory cell infiltration, fibroblast proliferation and collagen reconstruction. Results were evaluated by ANOVA test and Tukey test was performed to understand the differences between the groups.

Results: Banana peel juice and sour cherry seed oil treatment group had significantly increased wound contraction rate and shortened epithelialization time compared to control group.

Conclusion: Our findings show that banana peel juice and especially sour cherry seed oil may be useful in accelerating cutaneous wound healing. Although further research is needed to determine the mechanisms of action, our findings are thought to provide a basis for their medical use.

Keywords: wound healing, banana peel juice, sour cherry seed oil

O-110

Methods used in dissection of anatomically specific brain tissues in rats, ease of application

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Objective: Specific brain regions isolation is important in experimental neuroscience, pharmacological and biochemical research. The rapid degradation of the tissue necessitates immediate opening of cranium and immediate removal of the structure. Brain is very small in rats this is among the factors that make it difficult to practice. In this study, we investigated the methods used for dissection of specific brain regions in rats.

Methods: We investigated methods used for dissection of hippocampus, prefrontal cortex, corpus striatum, hypothalamus which are frequently used in experimental studies. We evaluated the fastest and easiest method in manual dissection by applying in rats obtained from Experimental Animal Production, Research Laboratory of AydınAdnanMenderesUniversity. We defined the quick and easy isolation of structures such as substantia nigra, corpus amygdaloideum, nucleus accumbens, globus pallidus, thalamus, putamen with rat brain matrix.

Results: Although manual dissection bulbus olfactorius, hippocampus, prefrontal cortex, corpus striatum, and hypothalamus is relatively easy; but, access to smaller structures and nuclei is now possible by laser microscopy microdissection after immunolabelling or tissue punch technique is performed with an atlas showing stereotaxic coordinates on the brain sections which are frozen and taken at 200–300 µm thickness using cryostat. Keeping the instruments cold is also a problem. Laser microscopy dissection is an expensive method and the availability of instruments is difficult. Rat brain matrix provides a fast and consistent way to obtain fresh brain tissue samples.

Conclusion: We think that the use of brain matrix in rats will be useful in experimental studies requiring multiple brain dissections in a short time.

Keywords: brain dissection, rat brain matrix, immune marking dissection, tissue punch dissection

O-111

The tests used to evaluate learning and memory in experimental animals and their reliability

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Objective: Evaluation of application and principles of preferred tests in learning and memory experiments used in experimental animals in the last 5 years

Methods: In PubMed database, the tests were searched with specific filters.

Results: In the last 5 years, Morris Water Maze, Fear Conditioning, Radial Labyrinth tests have been conducted in the text of 6920 articles, 297 of which are in titles. Morris Water Maze: This Device is a round pool filled with opaque water with a hidden exit platform. During the training, the animals find the platform. Fear conditioning test: The rodent is placed in the device and allowed to familiarize with the new environment for about 2–3 minutes. After some time, an unconditional stimulus (eg a slight foot shock); In the new environment, an audible conditional stimulus is given one or more times with matching. Cued fear conditioning; In expressing amygdala-dependent memory processes, contextual fear conditioning is based on both amygdala and Hippocampus. Radial/Plus Labyrinth Test: It is widely used in PTSD, traumatic brain injury or spatial memory research. The reliability of these tests, which have been accepted for years, has been questioned in recent years. The test animal's age, environment, environmental factors and character of the test animal are affected and therefore the accuracy of the test results will decrease.

Conclusion: This test can be used in new researches by enriching the conditions. If its reliability is supported by a vari-

ety of methods, such as histological or steological, the inaccuracies resulting from experimental animals or environmental factors are eliminated.

Keywords: learning and memory, experimental animals, cognitive tests

O-112

The protective effect of melatonin in acute high dose imidacloprid exposure on rat brain damage

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Objective: The aim of this study is to investigate the therapeutic effect of melatonin hormone in rats exposed to imidacloprid poisoning.

Methods: The study was designed as including 3 groups (Control group, Imidacloprid group and 10 mg/kg Melatonin + imidacloprid group) and each group comprised of 10 rats. At the end of the experiment, blood and tissue samples, oxidant/antioxidant, TNF-α, NGF, GFAP and dopamine levels were analyzed via ELISA method. In addition, histopathological analyzes were carried out on the examples of tissues.

Results: Histopathological examination showed focal vacuolar degeneration (abscess cases) in the brain tissue, as well as excessive enlargements and necrosis foci in multiple picnotic cell blood vessels in rats administered with imidacloprid. In melatonin applications in blood serum ELISA measurements, dopamine (DA), Glial Fibrillary Acid Protein GFAP), Nerve Growth Factor (NGF) and GFAP levels were significantly increased in comparison with the imidaclopridine group, whereas TNF-α levels were decreased significantly ($p<0.001$). SOD, CAT and GSH levels, having protective and regulatory effects by increasing antioxidant defense system and decreasing oxidative damage, were found to decrease significantly in the imidacloprid group compared to control group ($p<0.05$). The administration of melotin resulted in a significant increase in SOD, CAT and GSH levels compared to imidacloprid group and a significant decrease was revealed in MDA levels ($p<0.05$).

Conclusion: In conclusion, we are of the opinion that the treatment of imidacloprid with toxic melatonin reduces brain damage and may be an alternative treatment in the future.

Keywords: Imidacloprid, rat, brain, melotinin

O-113

Abdominal access techniques used in laparoscopic surgery

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Objective: The most important complications of laparoscopy occur during abdominal access. Vascular and gastrointestinal complications during the first abdominal entry are the main cause of death. In this study, we evaluated correct abdominal access techniques in minimally invasive surgery.

Methods: Different techniques have been developed to reduce the risks associated with entering the abdomen. These include: Trocar entry after pneumoperitoneum with Veress needle, open entry with Hasson Technique, direct entry with trocar, use of protected trocar, optical trocar and radially expanding trocar and entry from palmar point.

Results: 1. Introduction with Veress Needle It is the most commonly used method. Umbilicus incision is preferred. Following the skin incision, the needle is advanced to the abdomen while the first resistance point, the external oblique/rectus fascia, and the second resistance point, the transverse fascia/peritoneum are passed. 2. Open Entrance (Hasson): a 2 cm incision is made under the umblikus. The fascia and peritoneum are opened individually with 2 cm incisions until the index finger of the surgeon enters. After ensuring that the peritoneal cavity is entered an optical trocar is inserted. 3. Direct trocar entry: Direct trocar entry is an alternative technique to the entry with a Veress needle without pneumoperitoneum.4. Entrance from the Palmer point: palmer point is 3 cm below the left subcostal line and above the midclavicular line. This is another closed entry point in cases where adhesions around the umbilicus are suspected due to previous surgeries.

Conclusion: Standardization of abdominal access techniques is important to reduce complications.

Keywords: laparascopy, complications, access techniques

O-114

Examination of collateral circulatory variations of the gut in the stenosis of the superior mesenteric artery

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Objective: Chronic mesenteric ischemia (CMI) is usually associated with progressive atherosclerotic narrowing of the mesenteric arteries. Understanding the anatomy and variations of the mesenteric artery is of great importance in the management of these patients. Mesenteric circulation has a large collateral network and may cause patients to remain asymptomatic for a long time in severe mesenteric artery stenosis. The gastrointestinal tract is fed by the celiac trunk (CT), the superior mesenteric artery (SMA) and the inferior mesenteric artery (IMA). In this study, we aimed to investigate the angiographic distribution of vascular collateral circulation between the CT, SMA and IMA in patients with SMA stenosis.

Methods: Our study, angiographic images of 49 patients who were referred to Akdeniz University Radiology Department between 2014–2018 with the preliminary diagnosis of CMI were evaluated. Angiography images were classified and analyzed according to stenosis rates and collateral circulation variations.

Results: Collateral circulation is frequently seen in occlusion and stenosis more than 70% in SMA. The most common collateral circulation; Gastroduodenal artery mediated by CT was collateral development and Arc of Riolan mediated by IMA. The least detected collateral circulation was the Arc of Buhler.

Conclusion: CMI is a rare but life-threatening condition. Due to the presence of mesenteric collateral circulation, these patients may remain asymptomatic for a long time. Therefore, it is important to determine the presence of these collateral circulation in terms of treatment planning. Endovascular stent treatment or open surgery may be considered in a patient with classic symptoms after being diagnosed with severe stenosis of SMA.

Keywords: chronic mesenteric ischemia, collateral circulation, angiography

O-115

Variations of superior thyroid artery and surgical importance: pre-study findings

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Objective: To obtain better results in thyroid and head and neck surgery, surgeon shoul know superior thyroid artery variations. The aim of this study was to identify the variations of the origin of this artery and to reveal the topographic relationship with other anatomical structures during surgical operations by dissection the neck regions of cadavers.

Methods: Twenty sides of ten fixed cadavers were dissected bilaterally. The distribution and origins of the superior thyroid artery were observed and recorded. The important parameters were measured with the digital caliper. Types were determined regarding surgical importance. Neck length and circumference were also measured and the relationship between the measurements was evaluated with Spearman correlation test to examine the correlation for each parameter.

Results: In all of the cadavers, it was observed that the superior thyroid artery originated from carotis externa artery and all of them branched above the hyoid bone level. Mean distance of the superior thyroid artery to the external carotid artery bifurcation; 7.06 mm on the right, 7.32 mm on the left, and 7.19mm on the average. It was found that superior thyroid artery originates from a common root with lingual artery in 40%.

Conclusion: Variations and morphometric analysis of arteries in this important region of the neck has crucial importance in these surgical procedures. The topographic relationship of this artery, which is critical in thyroid surgery, will be enlightening for surgeons. Correlation with neck length and with neck circumference is important and knowledge of typing will reduce mortality and morbidity.

Keywords: superior thyroid artery, external carotid artery, common carotid artery, thyrolingual trunk

O-116

Evaluation of measurements of lumbar spine in patients hand preference determined with chronic low back pain

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Objective: Up to 84 percent of adults visit hospital because of low back pain at some time in their lives. Chronic low back pain (cLBP) lasting more than 12 weeks is seen as a serious socio-economic problem in addition to negatively affecting quality of life. In studies searched etiology of cLBP, there isn't enough correlation between anatomical and clinical researches. In this study, we aimed to query relationship between half-body preference determined with hand preference and measurements of lumbar spine.

Methods: The study was performed with patients underwent magnetic resonance imaging (MRI), diagnosed cLBP and voluntarily participated as a master's thesis study at KTU School of Medicine, Department of Anatomy and Yavuz Selim Bone Diseases and Rehabilition Hospital. Sociodemographic questionnaire, visual analog scala, Oswestry disability index, SF-36 health survey and Edinburgh Handedness Inventory were carried out 127 patients aged between 18–65 years who have no lumbar spine operation. Total measurements of lumbar spine were performed on MR images three times and their arithmetic means were calculated. Statistical significance values were estimated using IBM SPSS 23 program.

Results: It is found that 91,3 % (116 people) of group were right-handed, 6,3 % (6) were left-handed and 2,4 % (3) were two-handed. There was significant difference between measurement values of lumbar spine of dominant half-body and nondominant half-body (p=0.015).

Conclusion: It can be said that half-body preference has an affect on height of lumbar vertebra-discs. In further studies, determination side of pain, cross-sectional areas of lumbar spinal muscles and their proportions are planned to carry out.

Keywords: chronic low back pain, handedness, lumbar vertebrae

O-117

Geometric morphometry

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Objective: Shape, image or possible morphological differences that belongs to biological organisms or similarities are very significant both graphically and statistically. Maintaining the shape of data explaining with strong statistical analysis, providing our evaluation with specific result, Recognising and using geometric morphometry method will fullfill existing requirement according to classical methods.

Methods: In the geometric morphometric method special reference points which expressed and digitize the shape as geometrically are used. Reference points that called Landmark are determined by specific criterias. The image file of the samples which will be examined are determined and transferred to the computer. Files that transmietted present to the programm and reference points of landmarks which previously agreed are placed. Cartesian coordinates of landmakrs are computing and saved as a TPS format.TPS relw module using Procrustes superimposition method are scaled, transferred and rotated. By superimposing the shapes, the differences due to the size are eliminated and the difference between the shapes is ready to be analyzed. Differences between groups are determined and comparisons are made. In-Group differences Thin plate spline (TPS) difference between groups determined by using MANOVA program.

Results: Deformation inputs obtained as a result of analysis, graphical and statistical datas visualize the regions where selected Landmarks is focused and explaining the reason of variation between groups.

Conclusion: The selected anatomical structure applied on image or graphy with statistical shape analysis programs possible morphological differences and similarities are determined, both statistical and graphically satisfiying resuls are obtained.

Keywords: shape analysis,geometric morphometry, anatomy

O-118

Investigation of distal humerus morphometry

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Objective: The fractures of the distal part of the humerus constitute 0.5–2% of all bony fractures. Approximately 33% of these fractures involve the elbow joint. Anatomical reduction of the fracture is very important for painless, stable and mobile elbow joint restoration. Many surgical methods including olecranon osteotomy and the triceps lifting approach are used to treat. The anatomical features of distal humerus should always be kept in mind for internal fixation which is commonly used as a surgical procedure.

Methods: The measurements of distal humerus were performed in 50 dried adult humerus which were used as educational materials in anatomy laboratories and in 50 radiographies of the humerus which are reported as normal by the radiologist.

Results: Mean length of humerus (mean±SD) was measured as 300.8 mm (±17.3). The mean lenght and width of capitulum humeri were 18.26 mm (±2.56), 19.45 mm (±2.01), respectively. The mean lenght and width of trochlea humeri were 14.32 mm (±1.97), 21.73 mm (±2.16) respectively.The distance between medial and lateral epicondyle were measured as 58.38 mm (±4.41).The mean lenght, width and depth of coronoid fossa were 9.56 mm (±1.78), 13.07 mm (±2.28), 4.48 mm (±0.81), respectively.The mean lenght, width and depth of olecranon fossa were 19.39 mm (±2.37), 26.16 mm (±3.17), 14.35 mm (±2.43), respectively.

Conclusion: Morphometric data of distal humerus obtained from dry bones and radiographs may useful for surgical procedures performed in this area.

Keywords: distal humerus, humerus fracture, elbow joint, morphometry

O-119

Using Archimedes' method to measure os calcaneus volume

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Objective: To calculate external volumes of cadaver dry bones, Archimedes' water-displacement method has been used by many researchers, but failed due to penetration of water into the bones. In this study a solution to overcome this problem is proposed and tested.

Methods: Fourteen dry os calcaneus were studied. The bones had been placed in 10 inch party balloons, the air was aspirated with a 50 cc syringe so that the bone was covered with a thin layer of latex until no space was left between the balloon and the bone. The balloon tip was tied with a rope and was cut. Then, volumes were calculated by using Archimedes' water displacement method. On CT 1 mm thick sections of the bones were obtained and three-dimensional reconstructions were performed in Aquarius iNtuition Volume Rendering program to calculate volumes. Then the volumes found by two different methods were compared.

Results: The proposed method prevented the penetration of water into the dry bones. The mean volume of os calcaneus calculated was 58.6 mm^3 (38–71 mm^3) by Archimedes' principle and 59.05 mm^3 (39.9–71.2 mm^3) by radiographic method. Measurements obtained by two different methods showed a difference of minimum 0 mm^3 and maximum 2.8 mm^3. Due to

the scattering distribution of the values and the low number of bones tested, the statistical agreement between the two techniques was not studied.

Conclusion: The proposed party balloon covering method enabled calculating the volumes by Archimedes' principle and results are close to volumes obtained by reconstruction of thin slices obtained by computerized tomography.

Keywords: Archimedes, computerized tomography, volume, reconstruction, calcaneus

O-120

Surgical significance of morphometrical analysis of the superior orbital fissure: stereological study

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Objective: The aim of this study is to determine the localization, mean length, mean diameter and also the shape of the superior orbital fissure (SOF) on skulls and to find out the distances between the structure and neighbouring anatomical bony landmarks. We also applied stereological assessment method for estimating the surface area of SOF.

Methods: This study was performed on the craniums of 50 (100 sides) West Anatolian adult subjects. Morphometric measurements of the SOF were taken from the skulls using a Vernier caliper accurate 0.01 mm. A uniform point-grid with a point associated area of 0.25 cm^2 was randomly superimposed on each SOF of dry skull. The results were evaluated statistically with SPSS 22.0.

Results: Distance between SOF and foramen lacerum; the distance between SOF and foramen spinosum and distance between SOF and the neigbourhood structures such as foramen rotundum, foramen ovale were evaluated. Evaluations have already been carried on.

Conclusion: The localization of the fissure, the mean lenght and the mean diameter of SOF and the distances between the fissure and anatomical bony landmarks are of importance during neurosurgical interventions.

Keywords: superior orbital fissure, morphometry, neurosurgical procedure

O-121

A rare cause of dorsal wrist masses: carpal boss

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Objective: To determine the frequency of Carpal Boss (CB) in Turkish society and to remind the characteristics of this rare pathology of the wrist. Methods: Between 2015 and 2019, 698 wrists (649 Magnetic Resonance (MR), 49 Computed Tomography (CT)) were retrospectively reviewed and evaluated for presence and characteristics of CB.

Results: Carpal Boss was detected in 18 cases between the ages of 26–47. Incomplete fusion in 10 cases, complete fusion in 3 cases and accessory bone (os styloideum) in 5 cases were observed. The degeneration in 15 cases and bone edema in 6 cases were found at the level of CB and in 5 cases, ganglion cyst was detected.

Conclusion: Carpal Boss is the bone protrusion located in the dorsal area between the trapezoideum, capitatum and the 2nd and 3rd metacarpal bones, defined as the quadrangular joint. The incidence of CB has been reported to be 1–4 %) and found to be 2.7% in our study. CB is usually seen in the 3rd or 4th decades. Diagnosis is made by clinical examination and imaging methods (radiography, CT, MRI). At the level of the quadrangular joint, bone protrusion, partial or complete fused bone structures or accessory bone can be seen. Cystic degeneration of the affected metacarpal base and adjacent capitate or trapezoidal bone, sclerosis, medullary edema or osteophyte formation may be seen. In patients with wrist pain and swelling, it is important to remember this rare disease and to use appropriate radiological examinations in the correct diagnosis.

Keywords: carpal boss, wrist, partial or complete fusion, os styloideum

O-122

Evaluation of thalamus volumes with magnetic resonance imaging in patients with diabetic polyneuropathy

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Objective: This study was conducted to investigate whether sensory nerve dysfunction in thalamus volume changes in diabetic polyneuropathy patients.

Methods: Our study is a retrospective study of 204 MRI images (118 females, 86 males) of diabetic polyneuropathy (DPNP), diabetes mellitus (DM) and healthy control group, aged between 20 and 90 years, without any neurological disorders affecting thalamus. Morphometric measurements for thalamus volumetry were performed on axial and coronal sections of T2-weighted images on conventional MRI. Thalamus volume; anteroposterior (Ta), transverse (Tt), vertical (Tv) length and $\pi/6$ number ($Ta \times Tt \times Tv \times \pi/6$) of the thalamus. In order to measure the microstructural changes of thalamus, apparent diffusion coefficient (ADC) was calculated by diffusion-weighted imaging. In order to measure the microstructural changes of thalamus, apparent diffusion coefficient (ADC) was calculated by diffusion-weighted imaging.For the findings obtained, F test (ANOVA) was used. Significance was taken as 0.05.

Results: According to our measurements; It was found that both thalamus volumes of diabetes and diabetic polyneuropathy individuals in all age groups decreased ($p<0.05$).The mean ADC value of left thalamus increased between 20–40 years of age and in groups with DM and DPNP compared to healthy controls ($p<0.05$), but no significant difference was found between the groups in 41–60, 61 years and older ($p>0.05$). **Conclusion:** In the results of the research; DM and DPNP are not limited to the peripheral nervous system but also affect the central nervous system. This effect is present in individuals with DM and DPNP in all age groups and causes atrophy in thalamus volume.

Keywords: diabetic polyneuropathy, thalamus, thalamus volume magnetic resonance imaging, diffusion weighted imaging

O-123

Evaluation of distances among the infraorbital and the supraorbital foramina to the midline in 3D reconstructions of high resolution cranial CT images

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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 environmental factors, or the combination of the previous two. Superficial anatomical localizations of both infraorbital (IOF) and supraorbital foramina (SOF) are crucial for clinical and cosmetic approaches. The aim of this study is to evaluate the relationship among the IOF and SOF to the midline in both adult genders using high resolution cranial computerized tomography (CT) images.

Methods: 42 female and 42 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. 3D reconstructions of the images and the measurements were made utilizing Radiant Radiological Evaluation Software. The results were statistically analyzed by a t-test using GraphPad Prism v 6.0 software.

Results: According to the statistical results obtained, significant differences were found between the distances of right and left IOF to the midline in males ($p=0.0048$) and in females ($p=0.0038$). On the other hand there were no significant differences found between the distances of the right and left SOF both in males ($p=0.1351$) and females (0.0838).

Conclusion: To the best of our knowledge, such measurements of cranial asymmetries may help preventing clinical problems encountered in radiological evaluations and contribute to the interventions related region.

Keywords: infraorbital foramen, supraorbital foramen, asymmetry, morphometry, high resolution CT

O-124

Evaluation of intratemporal course of the facial nerve by multidetector computed tomography and multi planar reconstruction technique

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Objective: The aim of the study was to evaluate the mastoid (MS), tympanic (TS) and labyrinthine segment (LS) lengths of the facial nerve (FN), and mastoido-tympanic angle (MTA) and tympano-labyrinthine angle (TLA) with Multi Dedector Computed Tomography (MDCT) using Multi-Planar Reconstruction (MPR).

Methods: We retrospectively analysed 80 adult patients and 160 temporal bones with MDCT. MPR images were created. FN right and left MS, TS and LS lengths, and MTA and TLA measurements were performed in both genders on different MPR images. The statistical analysis was performed.

Results: There were 39 males and 41 females. The mean age was 39.13 for males and 49.63 for females. In the males, right MS, TS and LS were 14.71±2.30 mm, 12.05±2.07 mm and 3.66±0.54 mm; left MS, TS and LS were 14.62±2.48 mm, 12.35±1.7 mm LS 3.64±0.59 mm, respectively. In females, right MS, TS and LS were 13.5±1.44 mm, 12.30±1.74 mm, 3.67±0.47 mm, and left MS, TS and LS were 13.58±1.51 mm, 12.29±1.60 mm, 3.60±0.48 mm; respectively. In males, right MTA was 117.32±7.57° and left was 119.76±7.10°; right TLA was 71.47±12.23° and left was 73.99±11.92°; in females right MTA was 118.04±6.92°, left was 118.02±9.14°; right TLA was 72.32±12.22° on and left was 74.39±9.07°, respectively. In the statistical analysis, the lengths of right MS ($p=0.007$) and left MS ($p=0.026$) were significantly different between genders, but no significant difference was found between the other segment lengths and angles.

Conclusion: Evaluation of the FN with MDCT using MPR technique is important for understanding the anatomy of the facial nerve, determining its pathology and preoperative evaluation.

Keywords: computed tomography, facial nerve, cross-sectinal anatomy

O-125

An overview of the methods for quantitative evaluation of spinal curvatures in sagittal plane

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Objective: The assessment of spinal curvature in the sagittal plane refers to the measurement of cervical lordosis, thoracic kyphosis and lumbar lordosis. Several approaches have been

described for assessment of sagittal spinal curvatures of the spine. The aim of this study is to provide overview of the existing approaches for quantitative evaluation of sagittal spinal curvature in 2D images.

Methods: According to literature radiographic measurement techniques were evaluated for quantitative evaluation of sagittal spinal curvature in 2D images. Results: Cobb method is most frequently used technique because it provides a simple and quick assessment of sagittal spinal curvatures. The strong limitation of the Cobb method is that, the Cobb angle predominantly reflects to endplate tilt and endplate architecture. The posterior tangent method is practical approach for sagittal measurement of spinal curvature but its measurements can be affected by irregularly shaped of spinal curvature. Because it lacks a segmental analysis, the TRALL method is not recommended. Centroid method requires three or four vertebral body, and also need more points so less useful for clinical practice.

Conclusion: Suggested methods quantify the sagittal spinal curvature from the angles between the straight lines that are drawn from different vertebral landmarks. Available Methods involve multiple steps and are influenced by morphological changes in the vertebral bodies. The Cobb method, based on vertebral endplate, is the more common method used by clinicians because it provides a simple and quick measurement of spinal curvatures in sagittal plane.

Keywords: Cobb method, curvature, measurement, spine

O-126

Investigation of the relationships among processus coracoideus and acromion and caput humeri in impingement syndrome

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Objective: The aim of this study was to investigate the relationships the coraco-acromial angle (CAA) and the distance caput humerale-processus coracoideus (CHD) and distance caput humerale-acromion (AHD) in impingement syndrome.

Methods: Magnetic resonance images (MRI) of 96 female and 63 male patients were diagnosed impingement syndrome and MRI of healty 113 women,88 men were evaluated retrospectively. AHD, CHD and CAA that between the longitudinal axis of processus coracoideus and the longitudinal axis of acromion was measured on sagittal plan MRI.

Results: In the patient group; the mean CHD was 8.39±5.97 mm, the mean AHD was 8.07±4.00 mm and the mean CAA was 123.45°±11.10°. In the control group; the mean distance between the CHD was 10.32±2.52 mm, mean AHD was 10.69±2.19 mm, and the mean CAA was 124.75 °±6.95 °. There was a significant difference between patient and control group with CHD and AHD ($p<0.05$), but no significant difference for CAA values ($p>0.05$). There was a moderately negative correlation between impingement syndrome and CHD (r:0.455)** and AHD (r: 0.590)**. There was a moderate negative correlation between age and CHD (r: 0.320)** and AHD (r: 0.169)** measurements. Intra-obsever reliability test result; CHM (r: 0.922)***, AHM (r: 0.869)***, CAA (r: 0.860)*** measurements are highly correlated.

Conclusion: In our study, as the age increased, the risk of developing impingement syndrome increased due to decreased CHD and AHD. However, no correlation was found between CAA values and impingement syndrome.

Keywords: impingement syndrome, processus coracoideus, acromion, MRI

O-127

Morphological features of the cubital tunnel and ulnar nerve in the cubital tunnel studied with MRI

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Objective: The most common site of ulnar nerve (UN) entrapment neuropathy is the cubital tunnel (CT). Although the floor of the CT is carved out by the capsule of the elbow and the ulnar collateral ligament, the cubital tunnel retinaculum (CTR) and flexor carpi ulnaris aponeurosis carve out the roof of it. Having knowledge these morphological structures will contribute to the determination of the treatment methods.

Methods: The healthy and sick elbow's MRI of 31 patients, who consulted The Hospital of Necmettin Erbakan University Meram School of Medicine with pain at medial of the elbow and early diagnosis of cubital tunnel syndrome were viewed, prospectively. Anteroposterior and mediolateral diameter of the CT and UN were measured. Width, thickness and length of CTR and the UN length in the CT were measured and the UN's position was determined under CTR. The cubital angle and at 3 level the UN groove's base angle were measured.

Results: At healthy elbow; the maximum width of CTR was determined 1.31 mm and 1.03 mm in extantion and 90° flexion position, respectively. These values were measured as 1.2 mm and 1.03 mm at sick elbow, respectively. In the healthy and sick elbow, there is a significant difference with both thickness and length of CTR between positions. Diameter values of all parameters with elbow position were seen to be changed. It was observed that the UN groove's base angle was widened distally.

Conclusion: The morphological structure and variations of the CT and UN is important for clinician in diagnosis and treatment.

Keywords: cubital tunnel, cubital tunnel retinaculum, Osborne's ligament, ulnar nerve, MRI

O-128

The surgical anatomy of the triangular interval

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Objective: The profunda brachii artery and radial nerve are essential anatomical structures passing through the triangular interval. Reporting the case about the triangular interval syndrome emphasizes the importance of this space. The aim of this study is the relation between the triangular interval and the contents of this interval.

Methods: On ten formalin-fixed cadavers, the boundaries of triangular interval, the diameters of profunda brachii artery and radial nerve, and the distance between these two anatomical structures and the insertion of teres major were measured in millimeter using a digital caliper.

Results: Teres major posteriorly, the long head of triceps medially and the humerus laterally composed the borders of triangular interval and measured 12.43±4.47 mm, 54.6±16.97 mm and 52.76±16.8 mm respectively. The diameter of profunda brachii artery was 3.28±1.39 mm. The diameter of radial nerve was 5.76±1.07 mm. The distances of profunda brachii artery and radial nerve to the insertion of teres major were 7.14±7.56 mm and 19.98±21.41 mm. It is observed that posterior circumflex humeral artery with profunda brachii artery passed through the triangular interval in one case.

Conclusion: The boundaries of the triangular interval and the distances between the anatomical structures passing through this interval and teres major are important to ease the diagnosis of recently identified triangular interval syndrome, and to benefit from branches of radial nerve for neurotization or branches of profunda brachii artery for flap procedures.

Keywords: triangular interval, profunda brachii artery, radial nerve

O-129

Anatomical evaluation of neurovascular structures at wrist according to radial styloid process

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Objective: Carpal tunnel syndrome is the most common peripheral neuropathy. We aim to observe and define the neurovascular anatomy of the wrist, espicially for the non-surgical treatments.

Methods: Ten (6 right, 4 left) sides from formalin fixed cadaver upper extremities were performed. The diameter of the neurovascular structures and their the distance to the radial styloid process were measured on the plan between radial and ulnar styloid processes in millimeters by using digital caliper.

Results: The horizontal distance between radial styloid process and ulnar styloid process was 52.26±3.20 mm, the horizontal distance between radial styloid process and radial artery was 9.43±2.66 mm, the horizontal distance between radial styloid process and median nerve was 21.47±1, 98 mm, horizontal distance between radial styloid process and ulnar artery was 38.86±3.20 mm. The diameters of arterial radialis, nervus medianus and arteria ulnaris were measured as 3.49±1.09 mm, 5.77±1.37 mm, 3.02±1.08 mm, respectively.

Conclusion: The findings of our study, on the placement of neurovascular structures in the wrist will provide useful information for the preservation of neurovascular structures during injections of steroid drugs or surgical procedures in this anatomical region.

Keywords: radial styloid process, radial artery, ulnar artery, median nerve, carpal tunnel syndrome

O-130

Effect of musculus pronator quadratus repair on pressure between flexor pollicis longus tendon and plaque in radius distal end fractures - cadaver study

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Objective: In this study, we aimed to investigate the effect of the repair of pronator quadratus muscle on the pressure between flexor policies longus tendon and plaque: that is a treatment method for the volar rim plate used in the repair of distal radius end fractures.

Methods: In our study, 7 upper extremities of 7 different cadavers were used. The pressure between the rim plate and the flexor policies longus (FPL) tendon was placed under distal radius. Measurements were repeated after the s pronator quadratus muscle was repaired. The difference between the measurements was statistically evaluated by Wilcoxon test.

Results: Measurements were taken before the repair of the pronator quadratus muscle were calculated as (min-max) 2.1–8.3 average: 4.14 newton. The values measured after the repair of the pronator quadratus were (min-max) 4.3–13.8 average: 7.7 newton. Statistically, the pressure was significantly higher after repair (p=0.018).

Conclusion: The rim plates used in distal radius fractures are the ones that cause the most pressure on the flexor tendons. Although repair of the pronator quadratus muscle prevents irritation of the FPL tendon with the plaque, it has been found to cause more pressure between the tendon and the plaque. This situation significantly increases the flexor tendon complication in rim plate application and the rim plates should be extracted in as short as 3–6 months. Placing the rim plate more proximally or using the plates used in other distal radial end fractures may be an alternative to this condition.

Keywords: distal radius fracture, rim plaque, pronator quadratus muscle, flexor pollicis longus muscle

O-131

Camper chiasm and vincular patterns in adult cadavers

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Objective: Tendinous chiasm is situated where tendons of flexor digitorum superficialis and flexor digitorum profundus muscles cross each other and has utter importance in fine movements and stability of the fingers. There are rather few studies in the literature which focus on tendinous chiasm thoroughly. This study aims to conduct a robust examination of the tendinous chiasm, reveal the properties of related adjoint and superficial structures and analyze the distributions of these properties among sexes and digits.

Methods: 10 (6 male, 4 female) formalin fixed cadaver upper limbs were bilaterally, micro-surgically dissected. Skin and tendon sheath measurements (including pulley measurements) were completed initially following a midline excision; then, tendinous chiasm and vincula measurements were done. The measurements were analyzed with respect to digits, genders and sides.

Results: Tendinous chiasm types exhibit significant differences in distribution with respect to digits, genders and sides. Pulley and tendinous chiasm positions correlate with digit size; however, the width and thickness parameters are independent of the digit size. Not all tendinous chiasm types are symmetrical. Asymmetrical tendinous chiasm types could cause a torsion effect on digits.

Conclusion: Estimations about morphological structures of pulleys and flexor tendons without incisions could provide valuable input for flexor tendon surgeons. Distribution of tendinous chiasm and pulley parameters with respect to digit, gender and side could help develop better clinical approaches. Weaker tendon structure in 5th digit could have specific clinical implications.

Keywords: Camper chiasm, tendinous chiasm, flexor digitorum superficialis, flexor digitorum profundus, vinculum, pulley

O-132

A new reliable and safe approach for the sciatic nerve block in the gluteal region. Surface projection of the sciatic nerve: a combined cadaveric and clinical study

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Objective: This study was to re-evaluate the approach for the sciatic nerve block by investigating the regional anatomy, identifying landmarks and clinical effectiveness.

Methods: Bilateral dissections on the sciatic nerves (SN) were performed on 10 embalmed cadavers. The distance between the posterior superior iliac spine (PSIS) and the intersection point of lower border of piriformis muscle with medial (A) and lateral (B) rim of the SN were measured. The horizontal distance between the ischial tuberosity (IT) and medial (C) and lateral (D) rim of the SN were also measured. Slightly and inferior concave lines drawn from A to C and B to D forms the surface projections of SN. 100 patients were included in clinic part of study. Patients were divided two: (Group Labat, Group Novel). Novel technique: a line was drawn between PSIS to IT and 8 cm from PSIS and 2 cm lateral to IT were marked. A slightly concave line from A and B was considered as surface projections of sciatic nerve and 5 cm below from A on the former line was insertion point (C).

Results: The distance between PSIS to IT was 13.1±6.5 cm. Medial and lateral border of the SN were 7.8±0.7 and 9.1±0.6 cm from PSIS respectively. The SN was 1.8±0.5 and 2.9±0.6 cm medial and lateral from IT. Additional nerve blocks were higher in Group L than Group N ($p<0.05$). Conclusion: Our study suggests a new approach for the SN block is superior than theLabat approach.

Keywords: peripheral nerve blocks, sciatic nerve, anatomy

O-133

Medical students' perception of clinical anatomy and the importance of clinical anatomy in anatomy education in Turkey

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Objective: It has been shown that anatomy education with the addition of clinical information provides a better understanding of the course. The aim of this study was to evaluate the opinions of the medical students about clinical anatomy and to evaluate

the importance of clinical anatomy in anatomy education by calculating the distribution of clinical anatomy courses in the curricula in our country.

Methods: 177 volunteer medical students (1st, 2nd and 3rd-grade) of Yüksek İhtisas University were included in the study. A questionnaire about clinical anatomy was given to the students. In the answers of the questionnaire 5-point Likert scale was used. In addition, the anatomy and clinical anatomy course hours of 90 medical faculties in our country were determined. Chi-square was used to determine the relationship between categorical variables. In case of a relationship between the variables, pairwise comparison was used. Statistical significance level was taken as $p<0.05$.

Results: Most of the students stated that the clinical anatomy made the course easier (%93,6). Moreover, they stated clinical anatomy is useful for gaining medical skills (%92,6) and understanding surgical and internal sciences (%87). 23 of the 90 medical faculties, we couldn't access the curriculum information. It was determined that clinical anatomy was given an average of 10.6 hours (min 2–max 48) and anatomy course was given an average of 260 hours (min 102–max 405).

Conclusion: Our study showed that medical students found clinical anatomy lessons useful. It was noteworthy that clinical anatomy courses are not given in most of the medical faculties in Turkey.

Keywords: clinical anatomy, medical education, anatomy education

O-134

Cadaver-based medical simulation in practice

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Objective: Dissection has been a very important part of medical and surgical training for many years. Dissection helps students appreciate the anatomical relationship of organs, nerves and blood vessels. Cadavers are frequently used to practice surgical procedures and by surgeons to develop new operations.

Methods: Cadavers are proper to study on first in many surgical training procedures such as various kinds of sutures, the ligatures of arteries, amputations, disarticulations, resections of the limbs, the catheterism of the urethra, nasal duct, and eustachian tube, lithotomy, tracheotomy, bronchoscopy, and all of the special surgeries. Cadaver models are commonly used in orthopedics and obstetrics. We organize many multidisciplinary surgical courses in our department to help the clinicians for achieving these training procedures. Here we present the cadaver- based simulation models that were used from the beginning of the history. Also, we introduce the courses that we organized and the models that we use in our laboratory.

Results: Cadaver-based simulation models are regarded as low-reality simulation because they don't give any feed-back to the operator. The only feed-back is given by the trainer to the practitioner. This type of simulation helps to improve the technical skills of the students. Also, screen-based simulation models, partial task trainers and anatomical models are counted in the low-reality simulation group.

Conclusion: In anatomy, the formalin-fixed, fresh-frozen cadavers and plastinated models are used for practice. Fresh-frozen cadavers are the most prefered ones in the surgical training courses because of the tissue compliance and the ease of application.

Keywords: fresh-frozen cadaver, simulation, surgical training, medical training

O-135

Mixed reality era in anatomy

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Objective: Today, as the number of cadavers is not sufficient and anatomy atlases cannot provide enough material regarding 3D learning, anatomy learning has become more challenging. Our aim is to bring out an educational model for students to let them learn both during and after lectures by using a new technology, MR (Mixed Reality), with medical images obtained from real patients.

Methods: Medical images obtained from computerized tomography and magnetic resonance imaging were processed by using InVesalius, target tissue extracted and converted to 3D. Later, errors were determined and corrected by using Blender. To create an educational material out of the models, anatomic structures were marked; videos, explanations and English, Latin pronunciations were added by using Unity. Furthermore, related with every model, quizzes and clinic pop-ups were added. The software has English and Turkish language options which makes it available for international platform. It has been used actively in lectures by using MR with Microsoft Hololens. Finally, for students to get access to it, Android, IOS, Windows supports were provided and models were printed from 3D printers.

Results: Knowing that this generation's students are intimate with new technologies, we evaluated feedbacks and found out using MR in practical and theoretical lectures has drawn students' attention, increased comprehension and memorability.

Conclusion: This project is one of the first examples of MR technology which will have a major role in future of anatomy education. This method not only increases students' interest in anatomy, but also facilitates their learning.

Keywords: mixed reality, educational model, 3D model

O-136

Importance of anatomy and its relevance in daily clinical practice according to active Turkish physicians

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Objective: The importance of anatomy education in clinical practice is well known. Nevertheless, clinical practice changes globally and there is no international standard for anatomy education and educational methods used. Defining national needs for curriculum updates and anatomy content may be needed for planning future studies. In this study, we aimed to determine the importance of anatomy and its place in daily clinical practice from active Turkish physicians' perspective.

Methods: Demographic data and importance of anatomy in clinical practice were evaluated by an 11 item questionnaire following ethical approval (number:1645, date:29.11.2018). Results: There were 1524 respondents. The respondents were; specialists (57.29%), general physcians (22.7%), asistants (12.07%), and academic staff (7.94%). Anatomy education was important for diagnostic/radiologic methods (mean:4.34), final diagnosis (mean:4.34), physical examination (mean:4.31), and differential diagnosis (mean:4.07) for clinical practice. The importance for communication with colleagues (mean:3.94), story/symptomatology (mean:3.67) and communication with patients (3.21) steps were relatively low. Thematic analysis of free-text responses for physicians who think that anatomy education should continue during specialization revealed three main themes: timing, content, and format of anatomy education.

Conclusion: Anatomy was an important topic for Turkish physicians in daily clinical practice especially for diagnostic/radiologic methods and physical examination. We believe our results may be helpful to update and enrich the course contents in undergraduate medical education. Focusing on radiological, cross-sectional, superficial, and interventional aspects of anatomy should be planned. In this context, a review of the National Medical Core Curriculum and integration of basic medical sciences into it could be considered.

Keywords: medical education, anatomy education, medical curriculum, phsycian, national, clinal practice

O-137

Correlation between craniofacial measurements and occlusal vertical dimension in young adults

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Objective: Defining and treating physiological vertical dimensions of occlusions is critical in oral rehabilitation. Unsuitable occlusion verical dimensions (OVD) jeopardize the aesthetic, phonetic and functional efficiency of oral prostheses. The aim of this study was to evaluate the correlation between craniofacial measurements and OVD in young adults.

Methods: A total of 200 randomly selected (96 female, 104 male) young adults participated in the study. Using anthropometric landmarks, 15 craniofacial measurements were made with the help of digital caliper. OVD set up morphologically based on the distance from the nasal septum to the chin menton. All data were analyzed using SPSS program. Pearson correlation coefficient was used to determine the relationship between variables. Linear regression analysis was performed. Differences between means were determined using paired sample t test. The P value was set to 0.05.

Results: There was a significant relationship between craniofacial measurements and OVD. The mean values of OVD were 67.83±7.83 mm for male participants and 66.41±7.52 for female participants. A significant correlation was found between craniofacial measurements and OVD. The mean values of OVD were 67.83±7.83 mm for male and 66.41±7.52 for female participants ($p>0.005$). In males, the distance between the hairline and the top of the head (vertex-trichion) and the distance from the middle of the pupil to the right chelion showed a positive relationship.

Conclusion: Being simple and non-invasive technique, craniofacial measurements and linear equations can be used routinely to determine OVD.

Keywords: vertical occlusion, craniofacial measurements, morphometry

O-138

Bruxism and musculus masseter: ultrasonographic study

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Objective: Bruxism; It is a common parafunctional habit which is defined as squeezing and/or grinding between teeth except chewing movements, causing destructive effects on the anatomical structures of the mouth and its surroundings. In this study, we aimed to determine the thickness of musculus masseter by ultrasonography and to determine its hardness by elastography in volunteer with and without bruxism.

Methods: Musculus masseter thicknesses of 30 volunteers with bruxism and 26 healthy volunteers were evaluated by ultrasonographic measurement while the teeth were in contact with each other and in tightly closed position. Hardness values were determined by activating elastography feature of ultrasound device while resting.

Results: In our measurements, while teeth are in slight contact mean left and right muscle thickness was 8.86 mm in the control group; In the group with bruxism, the average of right and left muscle thickness was 9.65 mm. When the teeth are in the

tightly closed position the mean value of muscle thickness in the control group and bruxism group was 12.47 mm and 13.02 mm, respectively.

Conclusion: In our study, we found that muscle thickness increased in individuals with bruxism but this was not statistically significant. However, we found that stiffness showed a statistically significant increase in bruxism in elastographic measurements.

Keywords: bruxism, musculus masseter, ultrasonography, elastography

O-139

The relationship between sella turcica shape and size with different dentofacial skeletal patterns: a pilot study

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Objective: The aim of this study was to evaluate the morphological dimensions and shape of sella turcica according to gender, age and dentofacial skeletal growth pattern.

Methods: The cone-beam computed tomography images of 60 individuals (33 females, 27 males) with an age range of 15–38 years were evaluated retrospectively. The shape, length, diameter and depth of sella turcica were evaluated on three-dimensional radiographic images. Mean values and standard deviations were calculated for linear measurements. Student's t-test was used to calculate the mean differences of linear measurements between gender, different age groups and skeletal Class I, II and III individuals.

Results: The mean age of the patients was 25.8±7.06 years. Sella turcica were normal morphology in 40% of the patients, followed by irregularity (notching) in the posterior part of the dorsum sella (40%), pyramidal shape of the dorsum sellae (13.3%) and oblique anterior wall (6.7%). There was no statistically significant difference between the genders in linear measurements ($p>0.05$). No significant differences were found in the length and diameter measurements of sella turcica between Class I, II and III individuals. However, the depth measurements in skeletal Class III individuals were larger than Class I and Class II individuals, and statistically significant differences were observed ($p<0.05$).

Conclusion: There was no significant difference between genders in terms of length, depth and diameter measurements of sella turcica. Normal sella turcica and irregular dorsum sella were the most common types. Depth measurements was significantly longer in Class III individuals than in Class I and II individuals.

Keywords: anatomy, cone-beam computed tomography, gender, sella turcica, skeleton

O-140

Is there any effect of foramen magnum morphometry on Chiari malformation?

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Objective: Chiari malformation is defined as the displacement of the structures of the posterior cranial fossa into the vertebral canal. The cause of Chiari malformation is still unknown. The aim of this study is to investigate the condition (shape, dimensions, area, etc.) of the foramen magnum in chiari malformation and to investigate its relationship with malformation.

Methods: The participants were divided into two groups as study (n=71) and control group (n=61). Antero-posterior length, transverse diameter, area and shape of the foramen magnum were measured by PACS system on cranial MRI images of the participants.

Results: Antero-posterior length, transverse diameter and area of the foramen magnum increased in the study group compared to the control group ($p<0.05$). Round-like type of the foramen magnum was more common in both groups but there was no statistically significant difference between the groups ($p>0.05$).

Conclusion: Foramen magnum morphometry changes in Chiari malformation. Is this change a result of malformation or is it a risk factor for malformation? More detailed research is needed to explain this situation.

Keywords: Chiari malformation, foramen magnum, MRI

O-141

The anatomy of corpus callosum in patients with schizophrenia spectrum disorder

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Objective: Corpus callosum is the largest and most important commissural pathway because of its interhemispheric connection. The aim of this study was to investigate sociodemographic data of patients with schizophrenia and corpus callosum

measurements on MRI and to compare them with control group.

Methods: Our study consists of 39 schizophrenia and 36 control groups. In our study, length, angle, area and volume of corpuscallosum were compared in women and men, individuals over40 and under 40 years, schizophrenics and control group.

Results: It was observed that in schizophrenic patients, height and width of corpuscallosum was lower whereas its length was higher making it less concave. Morover, distance between commissura anterior and posterior was higher ($p<0.05$). Some angle measurements of corpuscallosum in our study showed a significant increase in schizophrenia compared to control group and a significant decrease in others. In schizophrenia, some corpus callosum measurements showed a significant increase in smoking, alcohol and substance users compared to those who used and quit, and significant decrease in others ($p<0.05$). Significant correlation relationships was found between weight and height measurements and corpus callosum measurements in schizophrenia patients.

Conclusion: Our study provides detailed demographic information on relationship between corpuscallosum in schizophrenia patients, and some relationships in literature for the first time. Our study provides an opportunity to examine the effects of schizophrenia on corpus callosum by evaluating schizophrenia and individual characteristics of patient; The individual characteristics of patients have significant effects on corpus callosum. As a result, we produced a study that shows the importance of sociodemographic information for MRI studies planned on in schizophrenia or similar neuropsychological diseases.

Keywords: aqnatomy, corpus callosum, demographic information, morphometry, schizophrenia

O-142

Three dimensional (3D) acquisition of cerebellum and brainstem images in essential tremor and correlation with clinical symptoms

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Objective: The aim of this study was to examine the cerebellum and brainstem images obtained from patients with essential tremor (ET) in three dimensions (3D) and to correlate with the clinical findings of the patient.

Methods: Twenty patients with ET and 20 healthy control groups who were admitted to Pamukkale University Neurology Department were included in the study. Various transverse, sagittal and coronal cross-sectional images were reconstructed on computer. The 3D images obtained were correlated with the clinical symptoms of the patient. Results: Structural and functional brain imaging studies have demonstrated brain stem and cerebellum involvement in ET. In addition, in the current literature, studies are generally evaluated on two dimensional images. In this study, 3D evaluation was correlated with clinical symptoms. The volumes of cerebellum and brain stem were evaluated in 3D images.

Conclusion: Researchers found that the ET table was essentially red nuc., inf. olivary nuc. and dentate nuc., which is a communication network between the Guillain Mollaret triangle that may result from a central dysfunction. In this study, brainstem and cerebellum images were rendered in 3D to support the possible pathogenesis in this area. It is thought that our study, which is a preliminary study, may serve as a guideline for future neuroimaging and experimental animal studies.

Keywords: brain stem, cerebellum, essential tremor, 3D

O-143

Morphometric analysis and classification of the brain superficial venous system on digital subtraction angiographic images

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Objective: In the literature, there are not enough studies about cerebral venous anatomy. Veins are sacrificed or ignored in surgeries. Venous drainage of the brain is connected to the systemic circulation from the cerebral veins and the dural sinuses to the internal jugular vein. In this study, we discussed the relationship of the veins, morphological characteristics and variations. The study aimed to classify the superficial veins of the brain and to determine morphological analysis. Methods: In this study, digital substraction angiography images in the archives of Uludağ University Radiology Department were examined in 310 patients through Picture Archiving and Communication System. The parameters are the morphological relationships, diameters, and presence of superior sagittal sinus, Labbe's vein, Trolard's vein, transverse sinus, and superficial middle cerebral vein. The results were analyzed with SPSS. Results: The mean age of the patients was 62.7±12.54 years. 153 (49.35%) female and 157 (50.65%) male cases were examined. In 155 patients, superior sagittal sinus continued with both transverse sinuses. Superior sagittal sinus was connected with right transverse in 143 patients and the left sinus transversus in 12 patients. In the classification of superficial veins of the brain, 131 patients had Labbe's and Trolard's veins. 128 patients were detected with Labbe's vein, without Trolard vein.

Conclusion: Cerebral veins are interrelated each other in the lateral, medial, and basal parts of the brain. Damage to venous structures can have serious complications, including hemiplegia, coma, and death. Therefore, veins should be given mprotected in surgical procedures.

Keywords: brain veins, cerebral venous anatomy, digital substraction angiography, dural venous sinuses

O-144

There is a hidden path from heart to heart, an anatomic path from soul to soul

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Objective: In this presentation, visual anatomic pathways affecting cardiac rate are presented.

Methods: Visual pathways begin at retina. Suprachiasmatic nucleus of hypothalamus which is activated with light, makes release of oxytocin (OT) and vasopressin (AVP)/CRH from supraoptic and paraventricular (PVN) nucleus. After processing visual inputs related with appearance of the face, at retinotopic cortex, a person is recognized with identification of the processed inputs at gyrus fusiformis. There are receptors for OT and AVP in retinal pigment epitelium (RPE).

Results: AVP shows its effect via V1 receptors in RPE. Oxytocin is an important neuropeptide regulating visual attention based on sensory inputs coming from eyes. It shows its amygdala related behavioral effect directly by G-protein coupled receptor phosphatidylinositol second messenger system. AVP and OT are produced also in other central areas and peripheric tissues. BNST receives inputs from many limbic areas including ventral hippocampus and amygdala, and supplies inputs to medulla spinalis affecting hypothalamic pituitary axis (HPA). Parvocellular cell bodies of hypothalamus in PVN synthesize CRH, and they are stimulated by norepinephrine released from local noradrenergic terminals. There are clues supporting the hypothesis that BNST affects magnocellular vasopressinergic neurons.

Conclusion: CRH neurons project to eminentia mediana and autonomic centers in pons and spinal cord respectively and affects HPA and sympathoadrenal medullary reactions. Beside their effects on PVN, BNST neurons have effective location for autonomic and endocrine reactions to several stimulus, via their effects on cardiovascular regulative centers in midbrain, pons and medulla spinalis. In this way, cardiac pulse can increase.

Keywords: oxytocin, vasopressin, BNST, CRH

O-145

Anatomy education and disaster medicine

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Objective: The 1999 Marmara earthquake was one of the greatest disaster confrontations of Turkey. Disasters have been observed for centuries in many parts of in the world. Disaster medicine and Disaster management also suggest "Emergency Management". During medical education, all basic sciences, particularly anatomy, have great importance in disaster medicine. Earthquakes, floods, traffic-train-plane accidents, fires, etc. unusual situations (US) are the main subject of disaster management and medicine. Natural or human-generated US requires immediate intervention. In this case, as with all medical information, the importance of anatomical information emerges. Clinical, radiological, systematic anatomy knowledge and experience must be engaged.

Methods: To understand the place and importance of the experiences we have gained from the trainings in disaster exercises in medical and anatomy education.

Results: In any US, to avoid damage of the anatomical structures, it is necessary to know the issues that require attention in the use of neck collar, stretcher usage and other interventions. The entire body, especially the respiratory, cardiovascular and nervous system, should be carefully controlled. In the event of deaths, it will sometimes be necessary to use radiological techniques for identification. Based on these examples, the relationship between US and anatomy should be considered in anatomy and disaster medicine education, course syllabuses and courses.

Conclusion: Anatomy education is expected to contribute greatly to the development of US medicine. Anatomists have duties in in-service training of all health personnel, first aid, basic and advanced life support courses.

Keywords: disaster medicine, unusual situations, anatomy, medical education

O-146

Quantitative evaluation of the anatomy teaching staff found in medical schools in Turkey

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Objective: Anatomy which constitutes the basis of medical education is one of the departments with the highest course hours in the basic sciences. Therefore, the number of anatomy teaching staff of medical faculties is important. The aim of this study quantitative evaluation of the anatomy teaching staffs at medical faculties in Turkey and to investigate the relationship between course hours.

Methods: The faculty member, teaching assistant, and research assistant numbers who work in department of anatomy by examining the official website of the 90 medical schools in Turkey were determined. The number of hours of anatomy was determined in 58 medical faculties which can be accessed via web sites.

Results: The number of faculty members, teaching assistants, research assistants and teaching staff working in the anatomy departments were 3.23±2.41, 0.20±0.45, 1±1.56 and 4.43±3.45, respectively. There were no faculty members in 3 (3.3%), 74 (82.2%) teaching assistants, 50 (55.6%) research assistants and 3

(3.3%) teaching staff. The maximum number of faculty members, teaching assistants, research assistants and teaching staff was 11, 2, 9 and 17, respectively. There was no significant correlation between the number of teaching staff and teaching hours of 58 medical faculties (p=0.24).

Conclusion: There were differences between the universities in terms of the number of teaching staff. Generally, number of faculty members was found to be higher in universities which are older. It is thought that anatomy education in medical faculties may be negatively affected due to the lack of relationship between the number of teaching hours and number of teaching staff.

Keywords: anatomy education, medicine education, teaching staff

O-147

Can you show me how to learn anatomy? A critical review of the literature

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Objective: To critically review the perspectives of anatomist, clinicians ad students on anatomy education in order offer suggestions and also evaluate the current anatomy teaching Methods.

Methods: A systematic search was performed from 02 September 2018 to 02 January 2019 using the electronic databases PubMed, EMBASE, Google Scholar and the Web of Knowledge. The following keywords were used: "plastination", "PowerPoint presentations", "Computer-Assisted Learning (CAL)", "Problem-Based Learning (PBL)", "3D anatomy", "three dimensional anatomy", "3D virtual anatomy", "3D anatomy model", "3D anatomy teaching", "medical imaging anatomy", "mobile applications", "cadaver dissection", "e-learning anatomy", "brainstorming" and "body painting". **Results:** 151 studies were reported in the references. Cadaver dissection (14), plastination (9), PowerPoint presentations (5), problem based learning (10), computer aided learning (16), anatomical plastic models (6), brainstorming (3), body painting techniques (10), mobile applications (16), virtual three-dimensional models (10), medical imaging (13), educational websites and e-learning (16) methods have evaluated in terms of anatomy education. Several methods were used together in 23 studies.

Conclusion: Presented literature has shown that precise performing of different perspective and teaching approaches can help student learn efficiently. It is also shown that all of the medical students consider the anatomy as a substantial topic during their academic education. Suprisingly it is mentioned that more knowledge about anatomical structures would be acquired during their current education and the postgraduate periods. The significant and fundamental changes in anatomy education strongly suggest that the workload of anatomist can be shared with radiologists, surgeons and physiotherapists which can be helpful in maintaining the continuity of anatomy education.

Keywords: web, anatomy education, cadaver, applications

O-148

Neurodegenerative diseases

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Neurodegenerative diseases is a heterogeneous disease group which is categorized by progressed degeneration of central nerve system or construction and function of periferic nerve system. The biggest risk factor for neurodegenerative diseases (NDD) is ageing. While age is a variable factor for every disease, it is whole fixed that neuron lose its function till the disease progressed by ageing. It has been put forward that DNA damage accumulation caused to the combination between ageing and neurodegenerative diseases. Today, especially average lifetime expectation ever increased in developed countries, and because its etiology hasn't been illuminated and exact cure hasn't been found yet, neurodegenerative diseases becomes one of the reasons of foremost morbidity and mortality. It leads the groups of the most increased costed deseases in calculation of health expence. Developed and developing countries firstly support basic and clinical study for intended diseases to decrease the outgoings. Some of the neurodegenerative diseases are categorized according to the area (cerebral cortices, motor neuron, basal ganglia and brainstem) which they hold.

Keywords: neurodegenerative diseases, central nervous system, degeneration

O-149

The variations of dural venous sinus system

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Objective: In this study we aimed to analysis the dural venous system variations in our region by reviewing magnetic resonance images.

Methods: Images of a total of 200 patients (61 male/135 female M/F: 0.48) who underwent a Magnetic Resonance Venography examination were retrospectivelly screened. **Results:** We have identified 101 variations of 200 patients (55.38% of men (36/65) and 48.15 for women (65/135)). We detected 16% in right transverse sinus (2 agenesis and 30 hypoplasia), 29% in left transverse sinus (3 agenesis and 55 hypoplasia), 10.5% in right sigmoid sinus (21 hypoplasia), left sigmoid sinus 18% (1 agenesis and 35 hypoplasia), 10% in the

occipital sinus, 5.5% in the inferior sagittal sinus (4 agenesis and 7 hypoplasia), and 1.5% in the sinus rectus (1) agenesis and 2 hypoplasia) variation while there was no agenesis in the superior sinus sagittalis but 1% had hypoplasia. However, no variation in the falsine sinus was observed in any of our patients.

Conclusion: Our results were compatible with previous studies. It is essential to know the anatomical variations of dural venous system for the discrimination between pathological conditions such as thrombosis and variations. Also the association of these variations with each others must be kept in mind for the explanation of the presence of multiple variations in the same individuals.

Keywords: dural sinus veins, magnetic resonance, variation

O-150

The computational neuroanatomy of pain, pleasure and happiness

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Objective: The first objective of this study is to apply the computational and system control engineering techniques for modelling of the brain structures and their linking which play important roles in pain and pleasure. The second objective is to summarize current research on pain–pleasure interactions and the consequences for human behaviour.

Methods: The application of computational algorithm to neuroanatomical and behavioural modelling of pain and pleasure were made by using Digital Signal Processing. Future Next Mind State was chosen to be zero valued. Zero State of Mind means that the pleasure compensates the pain. Disturbance is the noncontrollable environmental factor. It may be positive and negative. The Sample Time, a Coefficient depending on personality's resistance tolerance to pain ($0 \leq R \leq 0.20$), Pain and Total Pain ($P = \Sigma i\ P$); Unit Time Delay and Finite Impulse Response were added to complete the control system circuit. a and d are coefficients for the relate sample time interval of pain and Disturbance accordingly, valued between ($0 \leq a \leq 1.0$) and ($0 \leq d \leq 1.0$).

Results: From sensory pleasures (primary pleasures) to scientific, aesthetic and musical delights (high order pleasures), all pleasures seem to involve the same hedonic brain systems. Pleasure and pain areas and prefrontal cortex work both separately and jointly.

Conclusion: Digital Signal Processing model with the mathematical iterations is the first computational approach to pain and pleasure. This modelling may offer a way to conceive of hedonic happiness is as "liking" without "wanting". Thus, we may shift to find life meaningful and worth living.

Keywords: digital signal processing, computational neuroanatomy, happiness, pain,pleasur

O-151

Effect of TMS on lateral posterior cortex and hippocampus functional connectivity in Alzheimer's disease model

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Objective: The posterior parietal cortex (PPC) is located in the rostral of the primary and secondary visual cortex and caudal of the somatosensory cortex. Neurophysiology, neuroimaging and lesion studies have shown that PPC plays a role in many cognitive functions. There are many studies in the literature on the effect of lateral PPC on the episodic memory mechanism. One of the effect mechanisms of lateral PPC on episodic memory is the functional connection it establishes with the hippocampal area.

Methods: In this study, we collected resting state fMRI from 15 Alzheimer patients, and the seed was placed in the hippocampus. Thus we established high connection in the cortex with hippocampus. We applied TMS treatment to this area for 10 days to strengthen episodic memory functions. As a criterion, we compared the cognitive functions and fMRI images of the patients before and after TMS and determined changes in clinical and brain functional connectivity.

Results: After TMS, hippocampal seed activity increased in 8 patients and decreased in 7 patients. In the group with increased hippocampal activity, fMRI data showed an increase in posterior cingulate cortex, anterior supramarginal and anterior parahippocampal gyrus activity.

Conclusion: According to the results of our study, it was observed that lateral PPC had a role in attention-focused functions of the memory mechanism. It was also found that there was functional connectivity with the posterior cingulate gyrus, anterior supramarginal gyrus, and anterior parahippocampal gyrus.

Keywords: lateral posterior parietal cortex, fmrı, functional connectivity, memory

O-152

Spinal epidural hematoma presenting with progressive gait difficulty

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Spontaneous spinal epidural hematomas are rare and difficult to diagnose and present with different clinical findings. Causes of spinal epidural hematoma include vascular malformations, bleeding disorders, iatrogenic causes, and anticoagulant use, but rarely may occur spontaneously. An 80-year-old male

patient with a history of known coronary artery disease and hypertension who had been receiving acetylsalicylic acid was evaluated with complaints of numbness in his feet, which continued for 1 month and progressively increased. Meniscus pathology was suspected with these complaints and the patient was referred to the unit for physical therapy. However, the patient worsened with physical therapy, and his neurological examination revealed pathological paraparesis, urinary urgency, hypoesthesia under L1 and loss of vibration sensation under L1. Deep tendon reflexes were hyperactive and Babinski was positive. Thoracal magnetic resonance imaging revealed epidural hematoma at T8–9 level and the patient was transferred to the Neurosurgery Clinic. Paraparesis is one of the neurological emergencies. Spinal epidural hematomas, one of the rare etiologic causes, it may occur spontaneously. In order to determine the etiology and to treat the patients, it is important to provide neuroanatomic localization by neurological examination.

Keywords: epidural hematoma, paraparesis, neuroanatomic localization

O-153

Morphological and morphometric examination of pronator teres muscle in terms of clinical anatomy

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Objective: The aim of this study is to investigate the morphological and morphometric properties of pronator teres, to reveal the innervation pattern, to understand the entrapment neuropathies and to explain the correct localization for injections in spasticity of forearm.

Methods: The pronator teres was dissected in the forearm of 12 fixed cadaver upper limbs. Measurements of pronator teres were calculated with digital caliper. Examination of the origin and the length of the pronator teres, presence of ulnar head, number and width of branches of the median nerve and their distance to the muscle and medial epicondyle were noted.

Results: A positive relationship was found between width of humeral and ulnar head of pronator teres (p=0.159, r=0.434). The average width of humeral and ulnar heads of pronator teres was respectively 28 and 18 mm. Median nerve gave average of 1.75 branches to pronator teres. The most optimal region for injections to pronator teres is, below 1.3 cm to the imaginary horizontal axis passing through the medial epicondyle and 3 cm medial to the apex of medial epicondyle, in anatomical position.

Conclusion: The findings in this study aim to assist the clinician in determining the correct localization of injections to pronator teres in the treatment of forearm spasticities.

Keywords: pronator teres, median nerve, spasticity of forearm, entrapment neuropathies

O-154

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

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Objective: Lateral patellofemoral ligament (LPFL) is considered to be the most important anatomical structure that prevents patella displacement from the trochlear sulcus to the medial. Purpose of this study is to personally calculate LPFL 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 two morphometric parameters on images were taken from knee joint including LPFL, femoral condyl, trochlear sulcus and patella, by using PACS station. Obtained data were evaluated using SPSS 22.0 software.

Results: After the correlation analysis, it was identified that the length of LPFL correlated highly with the patellar height (PH), distance between tibial plato and patellar joint (TP-PJ) and medial condyle height (MCH). As a result of the regression analysis, the formula of "14,408 + (0.322×PH) + (0.369×TP-PJ) + (0.335×MCH)" was developed for calculating the estimated length of LPFL (SEE: 3.26 and Adjusted R2: 0.446).

Conclusion: Currently, length of the graft used in the reconstruction of LPFL is being investigated. As individual LPFL reconstruction is a new approach, we believe that outcomes of our study will be important in terms of individual planning of the length of the graft to be used for reconstruction of LPFL.

Keywords: anatomy, graft length, LPFL, MRI

O-155

Congenital bilateral patella aplasia

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Objective: In this study, it was aimed to investigate Congenital Bilateral Patella Aplasia Congenital bilateral patella aplasia-hypoplasia (CBPA-H) is extremely rare condition. The first

publication concerning the absence of unilateral or bilateral patella was made in 1897. Wunth et al. published a case series, in which they reported men with aplasia during three-generation.

Methods: Our case is an eight year old male patient. In October 2015 (4 years old), he came to our institution. In the evaluation, delay in cognitive development (limit value 25%), 'DENVER' developmental test in two areas (gross motor and language) were detected retardation. There was difficulty in walking (toe walking) and stepping. For these reasons, he was frequently falls. The patient complains of pain in leg and knee area during walking.

Results: At the final assessment (February 2018), there was a 10 ° limitation in knee extension on the right side and 6 ° in the left side. The ankle plantar flexion is 11 ° on the right side and 5 ° on the left side. Bilateral quadriceps muscle strength value is 5.

Conclusion: His walking balance has increased. Falls and pain complaints were reduced. According the results, time up- go test 11,3 sec, The Lysholm Knee Score Scale 68 (0–100), Lower Extremity Functional Scale 62 (0–80), Berk Balance Scale 42 (0–56). Physiotherapy approaches in this period have shown positive developments in the patient. The quality of life and functional skills of the patient have increased.

Keywords: patellar aplasia, congenital, bilateral

O-156

Investigation of the immediate effect of Mulligan mobilization on range of motion of the hip and horizontal jump

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Objective: The aim of this study was to immediate effect of Mulligan mobilization on range of motion of the hip and horizontal jump.

Methods: Twenty-four university students aged 20–25 years were included in the study. Demographic data, hip flexion normal range of motion, and horizontal jump distance were evaluated before the treatment. Goniometer was used to measure hip flexion and the tape measure was used for horizontal jump distance. After the first evaluation, individuals were divided into two groups. Hamstring muscles stretching with 5 repetitive end point for 30 seconds was applied while one of Mulligan techniques, Straight Leg Lifting Technique was applied in 3 repetition in the second group. After the techniques were applied, the horizontal jump performance and hip flexion range of motion of the participants were re-evaluated immediately.

Results: As a result of the study, when the jump distance before and after treatment was examined, the jump distance of the participants in the Mulligan group increased statistically ($p<0.05$), but no statistically significant change was observed in the stretched group ($p>0.05$). There was a statistically significant increase in hip flexion normal joint motion angle in Mulligan group ($p<0.05$), but no statistically significant change in stretching group ($p>0.05$).

Conclusion: The result of our study, when the Mulligan group pre- and post-treatment values were examined, the jump distance and hip flexion range of motion increase whereas in the stretching group, no change was observed when the pre- and post-treatment values were compared. Therefore, Mulligan mobilization was found to be more effective than stretching in increasing jump and hip flexion motion.

Keywords: Mulligan, mobilization, stretching, hip flexion

O-157

Development of congress abstract reporting standards and an abstract quality rubric

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Objective: Reporting standards and quality assessment rubrics are present for anatomical research articles and systematic reviews. Unlike some clinical fields, however, there are no standards or quality assesment tools for congress abstracts presented in anatomy congresses. In this study, we aimed to develop reporting standards for abstracts submitted to anatomy congresses and a rubric for evaluating the quality of these abstracts.

Methods: A list of standards comprised of 19 items under title, introduction, methods, results, conclusion, and general features sections was developed. Content validity of the standards was achived with a two step Delphi panel. For validating the internal consistency and inter-observer reliability, a randomized sample of abstracts from the 2018 National Anatomy Congress was evaluated by two researchers independently. Ethical approval (number: 7; date: 03.01.2019) was obtained for the study.

Results: Fifteen anatomists had participated to the Delphi panel and 16 standards were determined. Content validity of the rubric based on selected standards was good (·=0.87). Interclass Correlation Coefficient was 0.76 (0.68–0.82) for inter-observer relibility. Nevertheless, kappa values of 5 items could not be calculated due to the constant nature of the varible.

Conclusion: Developed quality rubric based on determined standards was reliable and valid. Therefore, the standards could be used as an educational guide for specialty/PhD candidates during abstract preparation. It was decided that 5 constant items to be included in reporting standards but excluded from the quality rubric. In this context, reevaluating the reliability and validity of the quality rubric was planned.

Keywords: anatomy, congress abstract, reporting, standard, quality, rubric

O-158

Assessment of methods used in anatomy practice education

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Objective: We aimed to reveal the differences between teaching methods used in anatomy practice classes.

Methods: In the study, 90 volunteer students who completed 2nd year of Adnan Menderes University School of Medicine participated in the study. Each student was randomly allocated to different study groups; anatomy atlas, anatomy model and the 3D anatomy atlas. Practical lectures on circulatory anatomy and neuroanatomy were done according to the selected method of each group. Afterwards, 25 anatomical formations were selected from each subject and students were evaluated with 4 points.

Results: In our study we evaluate the students' answers for neuroanatomy, the 3D anatomy atlas group was 73.6±15.88, atlas group was 68.0±18.67, and the model group was 70.27±18.03; for the circulatory system, the 3D anatomy atlas group was 63.33±15.33, the atlas group was 47.20±29.00 and the model group was 52.27±27.33. There was no significant difference between the different study groups for both courses. When the circulatory anatomy and neuroanatomy groups were compared, there was a significant difference between the three study groups. When we look at the average scores, the 3D atlas Group had the highest average score for both subjects.

Conclusion: Evaluation of the teaching methods, created for anatomy applied education in terms of student learning, 3D anatomy atlas method has the highest success rate in both subjects, because it allows the examination of anatomical structures from all angles. Practical training is important for neuroanatomy learning. We should evaluate the methodsfurther, for all anatomy subjects in applied education and aim to increase success.

Keywords: anatomy, cardiovascular system, neuroanatomy, 3D anatomy

O-159

Preparation of cadaver brain by using alkyd resin method

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Objective: The aim of this study, to prepare research and learning materials of brain using solutions containing alkyd resin.

Methods: In this study, 1 brain of cadaver which used in the students practice was used. For this purpose, dehydration, embedding, pre-drying, impregnating and hardening were performed. Fixed material were washed for 24-hour in water and dehydrated in alcohol (50–60–70–80–90–96%, and 100) series and acetone. After this process, brain embedded in glycerol. Then, the material was cleared from excess glycerol on blotter paper and pre-drying phase finished. Finally, the impregnation process was made into a solution containing the alkyd resin. After this operation, material was leaved at normal room conditions for hardening the procedure was finalized. Colour values of material were measured from the upper side of hemispherium cerebri by Lovibond RT colour analysis device. Odour, wetness and elasticity values were evaluated by the panel established by the School of Medicine, Niğde Ömer Halisdemir University fifteen faculty members.

Results: The material obtained by the panelists in the evaluation of odorless, dry and normal structure, but; was not elastic. When the color values were examined, it was found that it contains more yellow color than fixed brain material. In addition, special conditions, such as the pool is not required in order to guard the material were determined.

Conclusion: The brain samples prepared by this method may be used in both research and practices of anatomy.

Keywords: alkyd resin, anatomy, brain

O-160

3D modelling and printing in practical anatomy curriculum

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Objective: For effective Anatomy curriculum, we need to apply more student-centered applications, which facilitates teamwork and improve academic performance, because of traditional practical Anatomy education mainly depends on crowded cadaveric dissections and usage of models. Nowadays, cadaver supply limitations and variable performance of model's directed Anatomy educators benefit from improved technologies.

Methods: With the technological achievements in nineties, reconstruction and modelling softwares were developed to produce 3D anatomical models via processing radiological images. Then, real and identical models based on one to one its' production data entered our educational life with the advantages of printing in 3D.

Results: Modelling and printing of models started with hard tissues like bone which can be extracted relatively easier from the sections. With the increasing number of developed softwares and hardwares, soft tissues like solid organs and neurovascular structures were also studied. Firstly, undergraduate educational videos and animations were prepared using these

models. Later simulation models and simulators were improved for postgraduate surgical trainings including orthopedics, general surgery, urology, cardio-vascular surgery and otorhinolaryngology. During the technological development in 2000's first virtual and augmented reality and then hybrid form of physical and virtual worlds via immersive technology, a.k.a mixed reality were also applied efficiently to the anatomical models in these educational devices.

Conclusion: As a result, virtual and/or real 3D anatomical models and all these reality environments might be the most powerful supplementary and reinforcement option in both preclinical and clinical cadaveric Anatomy education for better understanding of the spatial locations and relations of the objects.

Keywords: 3D modelling, 3D printing, virtual reality, augmented reality, mixed reality

O-161

Understanding of the neural correlates of Turkish conceptual metaphors by using fNIRS method in elderly healthy native speakers

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Objective: The main idea of the metaphor studies is conceptual metaphor system for characterizing a domain of thought. Therefor metaphor language activates different anatomical/physiological regions. The aim of this study is the investigation of abstract thought using metaphor language by fNIRS in healthy elderly people.

Methods: Fifteen healthy elderly (age: 62±8) native Turkish speakers were enrolled in the study. The stimulus consisted of 4 types (literal, conventional metaphor, novel metaphor, meaningless) sentences. Measurements were conducted with fNIRS using 44 channel arrays of optodes (22 sources and 22 detectors). The Cohen's d value of the oxyhemoglobine concentration (HbO2) for each block and for each channels was calculated using the MATLAB (The MathWorks Inc., Natick, USA) program.

Results: The Cohen's d values were significantly higher for conventional metaphor, novel metaphor and anormal compared to the meaningless condition ($p<.05$). The significant difference for conventional metaphor versus literal metaphor is in left parietal inferior.

Conclusion: The distinction between the two types of metaphors is consistent with the Right Hemisphere Theory, which claims that the right hemisphere is effective in understanding the new metaphors in the literature.

Keywords: metaphor language, EEG, fNIRS, abstract thought

O-162

Length determination in humerus bones of Byzantine and contemporary periods

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Objective: While identifying, variables such as age, gender and height reveal the biological and ethnic profile of the individual. Mass disasters such as fire, earthquakes or some environmental conditions cause the broken integrity of the bones. In cases where there are disrupted skeletons, bone length estimation can be done from the long bones of the extremities.

Methods: A total of 129 humerus belonging to the bone collection of Uludağ University were included in the study. 16 morphometric and 6 segmental variables were determined for each humerus. Digital measurements were performed on the images using Image J program and manual measurements were performed with mechanical sliding caliper. SPSS 22.00 program was used for statistical analysis.

Results: While there was no difference between right and left sides of the contemporary bones, sulcus intertubercularis and trochlea humeri showed side differences in Byzantine bones. Also, collum chirurgicum radius, radius lenght of caput humeri, height of caput humeri and distal width were found to be different between contemporary and Byzantine period.

Conclusion: The study concluded that the Byzantine bones were higher and larger. We think that this situation stems from the conditions of the period (wars and agriculture). In some studies, it was reported that the average length of dry bones of centuries ago was reduced by 0.20 cm. Given this situation, it should be considered that the results may change.

Keywords: humerus, morphometry, Byzantine period, regression

O-163

Evaluation of the anthropometric dimensions, elasticity and muscle strength of the hand in conservatory students who are playing the piano regularly

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Objective: Our aim is to evoluate the anthropometric properties, muscle strength and flexibility of the hand in conservatory students playing piano compared with control group and to evoluate the characteristics of hand related with the tendency to play piano and adaptation process.

Methods: Our study was based on a total of 128 individuals including 64 conservatory students who regularly played piano for a minimum of two years between the ages of 18–30 and 64 university students who did not play any musical instruments.

After the demographic data of all the students were recorded, anthropometric hand measurements as well as height and weight measurements, flexibility and muscle strength were measured for each individual.

Results: In the study, the right and left hands of the piano group and the control group were compared separately. In the context of anthropometric measurements, no statistically significant difference was found between piano and control groups. It was only found that the right hand span was greater in the piano group. Similarly, no significant difference was found between the groups in terms of both hand and finger grip forces. However, a significant difference was found between piano and control groups in terms of all parameters related to flexibility measurements; the flexibility measurements were greater for both hands in the piano group.

Conclusion: In our study, we suggest that wrist and finger joint range of motion increases due to piano education regardless of hand dimensions, therefore hand sizes are not important for people who want to play the piano.

Keywords: hand, anthropometry, flexibility, hand grip strength, piano

O-164

Age and sex related changes of periocular anthropometry measurements in Anatolian population

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Objective: In this study, we aimed to determine the age and sex related growth changes in primary, secondary and university students in Anatolian men and women by normative measurements of orbital region.

Methods: Firstly, ethics committee permission was obtained for this study after that from the national education directorate and university for the measurement of students; A total of 233 individuals (primary: 33 females, 40 males; secondary and university: 40 males, and 40 females students) were measured. The participants were photographed from the front and side profiles of the Frankfurt horizontal plane, by the same photography machine and distance (2 meters). All photographs were measured by the same researcher for each individual from the anthropometric measurement points previously determined in the literature by using Image J program.

Results: The mean of the outer canthal distances were 83.83±4.40, 89.26±4.43 and 97.11±9.23 mm in three groups, respectively. The mean intercantal distance of the three groups were 33.25±3.08, 34.36±2.53 and 37.15±4.53 mm, respectively. Statistically significant differences were outer and intercanthal distances according to age groups ($p<0.05$). Palpebral fissure width and height were statistically significant ($p<0.05$), no statistically significant difference ratio of palpebral fissure width and height ($p>0.05$).

Conclusion: The data collected in this study may serve as a database for periocular anthropometric measurements during normal growth, development and childhood periods. The present study may be useful for evaluation of trauma, craniofacial operation, teratogenic orbital injuries; personal identification, age-based data banks.

Keywords: periocular, outer canthal, inter canthal, distance

O-165

Results of tDCS treatment combined with cognitive rehabilitation in a pure alexia patient: anatomy/function relationship

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Objective: Pure alexia is a neuropsychological syndrome characterized by left medial occipital damage and peripheral reading impairment. Although patients can write, they cannot read. Reading disorder is thought to be caused by the lack of access to the word image in the dominant angular gyrus. It is often seen after left posterior cerebral artery infarcts, but it can also be seen as a result of a lesion that disrupts the transmission between the left angular gyrus which is the assosiation of reading and the occipital lobes. Although it is known how dysfunction is known, it is unclear how to recover post-injury reading skills. Transcranial Direct Current Application (tDCS) is a method that has the potential to increase regional brain activity. In this study, the effects of tDCS combined with cognitive rehabilitation on healing in a pure alexia patient will be discussed through possible neuroanatomical and functional mechanisms.

Methods: A 65-year-old right-handed male patient was admitted to the neurology clinic with the complaint of reading disorder. Magnetic resonance imaging (MRI) revealed pure alexia associated with hemorrhage in the left occipital lobe. Neuropsychometric test, reading fluency-speed and MRI were evaluated before and after treatment. tDCS was administered to the left occipital (cathode) and right presuplementary region (anode) for 2 weeks. Cognitive rehabilitation combined with tDCS was performed to improve visuospasial skills, attention, executive functions, and reading fluency-speed.

Results: After the treatment, it is found that other cognitive functions were improved except for the reduced facial recognition test. Improvement in reading fluency was detected. Reading speed increased from 6 minutes 31 seconds to 3 minutes 32 seconds in a 250 word text. MRI showed that hemorrhage in the left occipital lobe was partially resorbed in T2 and SWI axial and T1 sagittal sequences.

Conclusion: In conclusion, it has been shown that tDCS combined with cognitive rehabilitation contributes positively to the clinical course and neuroanatomical and functional reorganization of pure Alexia that is seen rarely.

Keywords: pure alexia, occipitotemporal cortex, tDCS, cognitive rehabilitation

O-166

Morphological variations and morphometric analysis of sternum in multidedector computed tomography

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Objective: Sternum consists of the manubrium, corpus ve xiphoid parts and has six ossification centers. In this study, it was aimed to evaluate sternal morphometry, sternal ossification centers according to gender and age and to determine sternal variations.

Methods: Multidetector Computed Tomography scans of 320 patients (165 male, 155 female, age range: 0–30 years) were analyzed. The morphometry and ossification centers of sternum were analyzed according to gender and age groups.

Results: All of the mean values of the morphometric measurements were higher in male than female and showed positive correlation with age. First three ossification centers were present in all of the individuals. Ashley type 3 and 4 were observed only in 0–5 age group. Fifth and sixth (xiphoid) ossification centers were not seen in 48% and 79% of people aged 0–15 years, respectively. In ROC analysis, if the cut-off age was chosen as 10 year-old, the sensitivitiy, specificity and accuracy were found as 93.1%, 95.7% and 88.8%. The value of sternal angle was showed a decrement up to 164.86º in the 21–30 age group while detecting 169.15º in the 0–5 age group. The 2nd segment gave the best differential diagnosis information. Also, the foramen, band and cleft in sternal parts, xiphoid process with blunt, dagger or oblique type, double or three-ended termination were noted.

Conclusion: The morphometric analysis of the sternum and variations of the ossification and fusion in sternal parts are crucial in differential diagnosis of sternal pathology and provides an accurate method to estimate gender and age.

Keywords: age estimation, gender estimation, multidetector computed tomography, ossification center, sternum

O-167

Investigation of brain volume changes by MRI in adolescents with Down syndrome

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Objective: The aims of the neuroradiological study were to find causes of the cognitive and developmental deficiencies of adolescents with DS and to investigate the volumetric changes of brain which is risk for Alzheimer Disease (AD) and Dementia.

Methods: 14 healthy and 14 DS adolescents were included between the ages of 13–18 in the study. We compared the volume of brain areas of DS and healthy adolescents with the VolBrain automatic segmentation method. In order to determine the relationship between brain volume and motor movements, daily living activities and balance of DS patients, PBS, WeeFIM and GMFM-88 evaluation tests were performed. In the literature, we could not find study any correlation between brain volume measurements, motor and balance tests.

Results: DS group had statistically significant smaller than control group in the ICC, TBV, GM and WM, cerebrum, cerebellum, brainstem, thalamus, hippocampus, amygdala, GP and nucleus accumbens, except for LV, nucleus caudatus and putamen. The DS group had statistically significant smaller than control group in the GMFM-88 and PBS values ($p<0.05$). Looking at the correlation between WeeFIM and overall brain structures, we were founded a statistically significant relationship between TBV, total WM, cerebrum, cerebrum WM, cerebrum right and left hemisphere, putamen, nucleus accumbens and WeeFIM ($p<0.05$).

Conclusion: In our study, it was contributed to the literature by determining the decrease in the brain volumes of adolescent DS, and using the VolBrain method first time and the correlation between brain volume changes with PBS, WeeFIM and GMFM-88 evaluation tests.

Keywords: Down syndrome, brain volume, VolBrain, MRI

O-168

Relationship of subcutaneous and visceral adiposity to the variations of diaphragm based on computed tomography images

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Objective: Abdominal adipose tissue can be classified into visceral adipose tissue (VAT) and subcutaneous adipose tissue (SAT). The vertebral levels of the domes of the diaphragm and the diaphragmatic openings can be affected by adipose tissue area, which measured at third lumbar vertebra (L3) level. Recent studies have pointed out the discrepancies among individuals and ethnicities and also, with in anatomical texts. The aim of this study was to investigate the association of abdominal adipose tissue with the diaphragmatic domes and openings using computed tomography (CT).

Methods: Abdominal CT scans of 112 patients (57 male, 55 female, age range: 18–86 years) were analyzed retrospectively. VAT and SAT areas were measured and the vertebral levels of the diaphragmatic compositions were also recorded. The results were compared with respect to age and gender.

Results: The diaphragmatic openings of the inferior vena cava, esophagus and aorta level occur at T10 (32%), T11 (33%), and T12 (44%), respectively. The left and right domes of the diaphragmwas identified mostly at T10–11 (46%) and T9-10 (50%). The mean values of VAT and SAT were found as 18.9±9.84 cm^3 ve 28.34±15.08 cm^3, respectively. The vertebral

levels showed a downward shift with decreasing adipose tissue but did not show a significant difference. Also, there were no statistically significant differences with respect to age and gender.

Conclusion: This anatomical relationship is of great importance in differential diagnosis, clinical practice and can be used as a reference for safe surgical approach during interventional procedures.

Keywords: diaphragmatic openings, subcutaneous adiposity, vertebral level, visceral adiposity

O-169

Vascular variations of the kidney, retrospective analysis of computed tomography images of ninety-one laparoscopic donor nephrectomies and comparison of computed tomography images with perioperative findings

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Objective: In this retrospective study, we aimed to determine the variations of kidney arteries and veins in transplant patients who underwent computed renal angio-tomography.

Methods: We analyzed computed renal angio-tomography findings of ninety-one donor nephrectomy patients operated in 2018. Demographics, vascular diameters, abnormalities, numbers, branching variations, routing variations of arteries and veins were assessed according to computed tomography images. All computed tomography images were evaluated by the same radiologist, and the same surgeon performed all donor nephrectomies by laparoscopic approach.

Results: Ninety-one of the 96 patients involved to study. Forty-six (50.5%) patients were female. Thirty-five (38.4%) of 91 cases had accessory arteries. Seven right (7.6%), one left (1.1%) and eight (8.7%) bilateral double hilar artery was observed on computed renal angio-tomography. The mean diameter of arteries was 5.530.82 mm on the right and 5.770.7 mm on the left.

Conclusion: The knowledge of the vascular variations of the kidney is essential for surgeons performing kidney transplantation. It is also essential for urologist and vascular surgeons. In compatible with the literature, right kidney has more vascular variations and, one renal artery is found in the majority of Turkish kidney donor patients.

Keywords: donor, nephrectomy, vascular, variation, radiology, kidney transplantation

O-170

CT evaluation of cervical surface anatomy with vertebral levels in an adult population

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Objective: Cervical surface anatomy describes the positions of deep structures in the neck in relation to surface landmarks such as the thyroid and cricoid cartilages. It is of great importance in differential diagnosis, clinical practice and also, provides both qualitative and quantitative information for surgical interventions. The aim of this study was to reassess and establish the variations in positions of major anatomical landmarks in the neck and the relationship of them with vertebra levels using computed tomography (CT).

Methods: Cervical CT angiography scans of 181 patients (110 male, 71 female, age rnge: 18–86 years) were analyzed. The vertebra levels of the hard and soft palate, hyoid, epiglottis, thyroid and cricoid cartilages, carotid bifurcation, inferior thyroid and vertebral arteries were identified.

Results: The vertebral levels were identified most frequently such as; body of hyoid bone at C4lower (63,5%), greater horn of hyoid bone C4upper (60.7%); thyroid cartilage superior and inferior border at C5upper (51.4%) and C6upper (48.6%); cricoid cartilage C6 (56.9%); superior and inferior horns of thyroid cartilage C4lower (61.3%) and C6lower (45.6%); right and left carotid bifurcation at C3–C4 (32.6% and 33%) and C4–C5 (24.3% and 18.2%), right and left superior thyroid arteries C3–C4 (46.4% and 54.7%). The vertebral arteries entered the C6 transverse foramen in more than 85% of scans.

Conclusion: Because of the wide range of variation among indivisuals and ethnicities, surface landmarks only provide general reference points. Also, they provide both qualitative and quantitative information for clinicians in differential diagnosis and treating cervical pathology.

Keywords: carotid bifurcation, cervical surface anatomy, CT angiography, vertebral artery, vertebra levels

O-171

Investigation of pterygopalatine canal localization in terms of osteotomy safety of patients with orthognatic surgery indications in Turkish population

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Objective: The purpose of this study is to obtain preoperative CBCT images from orthognathic surgery indicated patients and evaluate the trace of pterygopalatine canal morphology which will help us to minimize the complications (nerve damage, bad splits ie) which can occur and shed light on the way performing these procedures faster,safer and more controllable.

Methods: An axial cross-section was taken 3 mm above the base of the nose. On this cross-section,distances from the pterigopalatine canal to the apertura piriformis (GPF-AP),

from the pterigopalatine canal to pterigomaxillary fissure (GPF-PP) also diameter of pterygopalatine canal and the narrowest part of the pterigomaxillary fissure (PP), were measured.

Results: As a result PP values on the left side were found to be statistically significant higher in males than females. GPF-PP values were found to be statistically significant higher in Class III patients than in Class II patients.

Conclusion: In conclusion, we propose to evaluate the localization and morphology of the pterygopalatine canal by performing conical beam computed tomography before surgery in patients who will undergo orthognatic surgery.

Keywords: arteria palatina descendens, CBCT, orthognathic surgery, pterygopalatine canal, retrospective

O-172

Presence of bifid mandibular canal: case report

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Objective: The location, morphological structure and variations of the Canalis mandibularis play an important role in the surgical procedures performed in the mandible. In this study, a case of unilateral bifid mandibular canal detected by panoramic and computed tomography (CT) images from a patient coming to the dental clinic for treatment is presented. Intra-oral and extra-oral examination of the male patient who came to the dental clinic with toothache revealed a periodontal inflammation and bifid mandibular canal in the left mandibular region of the left mandibular region.

Methods: The presence of bifid mandibular canal was confirmed by computed tomography.

Results: In radiographic images, canalis mandibularis can be seen in various shapes such as oval, circular or piriform, and lamellar bone tissue forming the walls of the canal is seen as a radiolucent dark strip between two radiopaque lines. The location, morphological structure and variations of the canal mandibularis play an important role in the surgical procedures performed in the mandible. Bifid mandibular canal is one of the most common anatomic variations of the canal mandibularis. Only accessory blood vessel or accessory neurovascular bundle may be present in the bifid ducts. Bifid mandibular canals are clinically important. Variations in the anatomical localization explain the ineffectiveness of standard anesthesia techniques in some patients.

Conclusion: Knowing these canal variations before surgical procedures for molar teeth relieves the surgeon. In order to prevent complications that may occur during implant surgery, it is useful to know such variations in advance.

Keywords: bifid, n. alveolaris inferior, trifid mandibular canal

O-173

The variety and the impact of the clinical and radiologic methods for the diagnostic of temporomandibular disorders: does the complex anatomy of masticatory system make the diagnosis and treatment difficult?

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Objective: Temporomandibular disorders is a term which defines the prevalant disorders of the masticatory system. It should be provided the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMDs) with the combine use of physichal examination, laboratory and imaging methods for the discriptive diagnosis of TMDs. Even so, relatively uneasy access of the masticatory system and the small structure the tissues over here, make the physical examination of the area complicated. The aim of this review, to evaluate the diagnostic methods which are used to examine the masticatory system in the perspective of the anatomy of the region, which has a special and complex structure.

Methods: The author has been used the databases incuding PUBMED, SCIENCE DIRECT, EBSCO by using the keywords "TMDs", "diagnosis methods", "trigger point", "pain" and reviewed 141 studies between 2009–2019. This review includes 53 studies which contains controlled clinical studies and systematical reviews. Results: The diagnosis is often based on the physical examination and the anamnesis despite the variety of the methods used to diagnose TMDs. The treatment is usually diverse and is not more than semptomatic.

Conclusion: It has been concluded that diagnosing the TMD patients are still problematic; the symptoms of the patients with the same diagnosis are often varied furthermore the patients with the same symptoms can be diagnosed differently. The treatment plan varies parallel to the speciality, experience and the education level of the clinician. In conclusion, long term controlled clinical trials will be needed in order to standardize the Methods used in TMDS diagnosis.

Keywords: temporomandibular disorders, diagnostic methods, trigger point, pain

O-174

An investigation of the relationship between temporomandibular disorder and posture

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Objective: Evaluate the whole body in individuals with temporomandibular disorder and also in people with healthy temporomandibular joints.

Methods: A study group aged between 18–35 years, 30 patients, who were diagnosed with Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) who applied us with jaw pain and 30 healthy people at the same age range as a control group were included in the study. Both groups received global postural assessments by using PostureScreen Mobile® (PSM) program which is using four side photographs and the New York Posture Scale (NYPS).

Results: There was no statistically significant difference between groups from anterior and posterior posture assesments in using PSM ($p>0.05$). On the right and left lateral sagittal plane, knee translation and angulation were significantly different ($p<0.05$). There was no statistically significant difference between the groups in terms of body regions in NYPS posterior evaluation ($p>0.05$). On the left side, there was difference between the groups in terms of total scores, neck, chest, lower back and trunk posture ($p<0.05$).

Conclusion: Postural misalignments may result in development of TMD or as a consequence of temporomandibular disorder. Assessment of postural alignment and giving postural alignment exercises by physiotherapists will play an active role in preventing or treating TMD.

Keywords: posture, posturescreen mobile, RDC/TMD, TMD

O-175

Determination of safe and danger zones for facial nerve branches in closed interventions for pain treatment

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Objective: The aim of this study is to evaluate the facial branches of facial nerve that could be damaged in closed invasive interventions targeted at oval foramen and pterygopalatine fossa for pain treatment and to reduce the possible complications.

Methods: Numerous articles, books, application booklets and atlases related to facial nerve and algological interventions published between 1956 and 2019 were reviewed to reveal safe and dangerous intervention areas for related invasive procedures.

Results: The oval foramen is reached by guiding radiological imaging techniques by entering a needle from the cheek region in the interventions targeting trigeminal ganglion. At the needle entry site buccal branches and their end-branches with numerous variations become superficial under the SMAS. To reach pterygopalatine ganglion via pterygomaxillary fissure and pterygopalatine fossa the needle insertion is made above the mandibular notch just in front of the temporomandibular joint under the zygomatic arch. This is the area where the zygomatic branches passing along the zygomatic arch and there is a possibility of injury during the intervention.

Conclusion: The branches of facial nerve that are at risk in closed invasive methods for pain treatment and safe needle entry sites were determined to avoid permanent or temporary complications.

Keywords: Closed intervention, facial nerve, oval foramen, pterygopalatine fossa

O-176

Evaluation of dimensions of Rosenmüller fossa on cone beam computed tomography

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Objective: To give information about the differences in the average length, width, and gender of rosenmuller fossa types.

Methods: The cone beam computed tomography images of 30 male and 30 female patients aged 18–66 years were used. Mean Rosenmuller fossa dimensions were calculated and evaluated for differences between gender and right and left sides.

Results: As a result of the statistical evaluation, no significant difference was found between the Rosenmuller fossa dimensions of female-male patients and right-left side who applied to the Department of Oral and Maxillofacial Radiology of 100. Yıl University Faculty of Dentistry.

Conclusion: The well-known anatomic structure of the Rosenmuller fossa, which plays an important role in the success of nasotracheal intubation, is very important for the success of intubation.

Keywords: nasopharynx, nasotracheal intubation, Rosenmuller fossa

O-177

Evaluation of septated variational anatomy of concha bullosa types with cone beam computed tomography

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Objective: Concha bullosa is found mostly in middle, rarely in superior and more rarely in inferior turbinates. The presence of concha bullosa in different conchas at the same time is very rare, and pneumatization of all conchas in which only a few cases have been reported in the literature may be involved. Concha bullosa can be evaluated radiologically on paranasal computed tomography images.

Methods: In this study, images of 7121 patients in the archives of cone beam computed tomography of Istanbul University Faculty of Dentistry Radiology Department were scanned. 2485 images were in the display area.

Results: Interpretation of these images evaluated the frequency, locational distributions of concha bullosa types, incidence

rates in more than one concha at the same time, and rare, double, triple and quadruple variations of concha. Bullous, extensive and lamellar types were evaluated separately.

Conclusion: We think that this radiological anatomy study will contribute to the literature as it has clinical importance in terms of concha resection and lateralization, free edge excision, submucosal diathermy and turbinoplasty.

Keywords: concha bullosa, radiologic anatomy, cone beam computed tomography

O-178

Evaluation of the frequency of dehissence of facial canal and the distance between facial canal and cochlea: a micro-CT study

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Objective: The aim of this study was to investigate the presence of facial dehissence which is clinically important for middle ear operations and cochlear implant surgeries and the relationship between facial canal and cochlea on dry bones using micro-CT.

Methods: Thirteen dry temporal bones were scanned under micro-CT as whole bone at a resolution of 33 µm. In this study, the bone integrity of the facial canal was investigated. The shortest distance between facial canal and cochlea was also evaluated by CTan software.

Results: As a result of the measurements, the presence of facial dehissence was found to be 30.76% and the mean distance between the facial canal and cochlea was found to be 0.377 mm.

Conclusion: The facial dehiscence rate was higher than previously reported in the literature. We think that the main reason for this may be the time-worn wear of dry bones. In contrast, the shortest distance between facial canal and cochlea was found to be shorter than the current studies. We think that it is because of Micro CT allows more detailed measurements. We plan to obtain more clinically meaningful results by conducting this study based on patient data with a larger number.

Keywords: anatomy, cochlea, facial canal, micro-CT, facial dehissence

O-179

External ear anatomy and variations in newborns

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Objective: Knowledge of normal ear sizes, position, and symmetry is important in terms of surgical reconstructions, hearing aid design, generation of data banks related to gender, age and ethnicity, and providing reference information for multiple diagnoses and forensic procedures. In this study, we aimed to determine the morphometric dimensions of auricle and classify the anomaly types encountered.

Methods: The study included 550 newborns who were brought in for a hearing screening test. Digital caliper for height and width measurements, ruler for distance measurements and goniometer for angle measurements were used for auricle parameters.

Results: 52.70% of the newborns whose external ear was examined were male, 47.30% were female and the average age was 3.34 days. Auricle height was 36.4mm on the right and 36.39mm on the left. Auricle width was 23.5mm on the right and 23.82mm on the left. The auriculo-cephalic angle was found to be an average of 6,340 on the right and 6,400 on the left. 96 anomalies on the right and 103 anomalies on the left were detected in the auricle. Ear tag was the most common malformation and conchal crus was the most common deformation.

Conclusion: A good understanding of the normal structure of the external ear in newborns is very important in plastic surgery, hearing aid design, gender discrimination and identification. Distinguishing the types of anomalies encountered is important for the precautions to be taken in the future and surgical interventions that may be required.

Keywords: anomaly, auricle, morphometry, newborn

O-180

Case report of bilaterally rare variational veins in the deep venous system of the lower extremities

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Objective: Bilaterally variat veins were encountered during lower extremity venous system dissection. The literature on the clinical importance and nomenculare of the veins have been studied.

Methods: During the routine dissection of a 45-year-old female cadaver, deep dissection was performed in order to reveal the course of the variant veins and them adjacent structures in the bilaterally popliteal regions. The beginning, ending sections of the vein were clearly identified and the venous anastomoses were revealed.

Results: Considering to venous structures in the fossa poplitea of the two extremities; the veins forming of the popliteal vein were anatomically normal. The variant veins began with anastomosis with popliteal vein in the popliteal groove on both sides. Right variant vein was over the adductor magnus muscle fibers and when reached the upper part of the thigh posterior

region, it was passed to the anterior thigh. In the femoral trigonum it's terminated with draining to the femoral vein. Left variant vein was traversing between the biceps femoris and the semimembranousus muscles. When the reached the lower edge of the gluteus maximus muscle, it ended anastomosis with the inferior gluteal vein.

Conclusion: Anatomical variations in the deep venous system may occur during embryological development or due to venous thrombosis. In the literature, it was seen that veins nomenculared as axiofemoral truncus with %0.9 rate on right side, and the persistent sciatic vein on left side. These and similar variations in the anatomy of the venous system should be considered clinically in the treatment of deep venous system anomalies.

Keywords: variant vein, deep venous anatomy, cadaveric study

O-181

The anatomical approach to lower lid fat pads for blepharoplasty

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Objective: For able to be helpful in surgical approaches, we aimed that to study the different types of lower lid fat pads increasing with age.

Methods: 50 perioculer bilateral dissection was performed in 25 male adult heads in Ege University Medicine Faculty Anatomy Laboratory. Oculer orbiculer muscle and orbital septum were removed. It was over seen that pretarsal fat was scattered very little. It was found that the lower palpebral fat of the orbital origin was proliferated toward the front but not the same in all samples. There were also differences in the appearance of this palpebral fat due to the differences arcuate expantion and the facial extensions of the palpebral capsule.

Results: Fifty samples were typed. Six types were performed in totally. The most common type 1 had three different fats as medical, central and lateral compartments. There were seperated each other with arcuate expantion and inferior oblique muscle. The second common type 3a had upper and lower compartments. Because arcuate expantion was horizontally extending like a curtain.

Conclusion: Oculer orbiculer muscle's muscular tonus, orbital septum, capsulopalpebral fascia, collogen types and skin are important for lower lid fat pads. Arcuate expantion holds on to side of orbita in lateral and continues zygomaticotemporal fascia. This case contributes to be lower lid fat pads forward, down and medial. The different types of fat pads are one of the reasons that explaining personal differences of face in the old age.

Keywords: palpebral fat, malar fat, pretarsal fat

O-182

Topographical evaluation of the foramen spinosum

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Objective: The aim of the study is to define the topographical evaluation and the shape of foramen spinosum (FS) on skulls and to obtain the distances between the structure and related anatomical bony landmarks.

Methods: The study was performed on the craniums of 50 (100 sides) West Anatolian adult subjects. Morphometric measurements of the FS and related adjacent structures were taken of the skulls using a Vernier caliper accurate 0.01 mm. The results were evaluated statistically with SPSS 22.0.

Results: The mean distance of the right FS and the left FS; the distance between FS and the structures such as foramen rotundum, foramen ovale, and the distance between FS and foramen ovale were investigated. The mean distance between the foramen and posterior, middle and anterior clinoid processes were also evaluated, respectively. The mean distance between the foramen and lateral border of sella turcica were also evaluated, respectively. Evaluations have already been carried on.

Conclusion: Anatomical results of FS and related anatomical bony landmarks may be useful for neurosurgical procedure.

Keywords: foramen spinosum, morphometry, neurosurgical procedure

O-183

Situs inversus totalis and dextrocardia: case report

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Objective: "Situs" is the location of heart and internal organs. It is called "Situs Inversus", while the organs should be relocated according to the mirror rankings. Dextrocardia is a term used to describe the positioning of the heart, the tip of the heart pointing to the right side instead of the left side of the chest. Dextrocardia with situs inversus totalis is a condition characterized by abnormal positioning of the heart and other internal organs. Some affected people do not have significant signs or symptoms. However, a small percentage of people have congenital heart defects. The aim of this study is to present a case with dextrocardia and situs inversus in our country.

Methods: Electrocardiography (ECG), lung χ-ray and ultrasonography (USG) findings of the patient were examined and literature review was performed.

Results: A 21-year-old male patient was admitted to the Urology outpatient clinic of Erciyes University Hospital for

urinary tract infection. His blood pressure was 130/80 mmHg and pulse rate was 60 per minute. No cardiovascular problems were observed. The patient stated that he had smoked 1 pack of cigarettes a day for 3 years. As a result of the USG, the organs of the patient were displaced symmetrically. The diagnosis was as situs inversus totalis, accompanied by dextrocardia by chest X-ray and ECG.

Conclusion: Increased awareness of this situation; surgeons and radiologists should be more sensitive to take this anomaly into consideration before and during surgery.

Keywords: situs inversus totalis, dextrocradia, rare anomaly

O-184

Long-term acupuncture treatment response in fibromyalgia patients

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Objective: We aimed to evaluate the long-term results of acupuncture in the treatment of fibromyalgia patients admitted to our acupuncture clinic between 2016–2019.

Methods: Retrospective records of 13 patients with fibromyalgia diagnosis, who were admitted to our acupuncture clinic between the years of 2016–2019, were obtained. All patients had undergone 8 sessions of acupuncture treatment. Afterwards, the patients were contacted by telephone and asked about the severity, frequency, and persistence of symptoms acupuncture treatment. In the survey, the visual analog scale was used to assess the severity of complaints before treatment and a 7-point scale, Patient Global Impression of Change, was used to measure the overall improvement as the treatment response.

Results: One of the patients could not be reached. One refused to participate in the survey. Three of the remaining 11 patients were unresponsive to acupuncture treatment. The other 8 patients' complaints had regressed at least 50%. It was learned that the complaints started again in 2 patients after two months. In one patient even though the complaints were observed daily before the treatment, they started to occur every 2–3 days after the treatment. In the remaining 5 patients, well-being continued for more than six months.

Conclusion: Due to the number of patients, statistics didn't be performed. However, it is concluded that by increasing the number of patients, it will be possible to gather more information on the long-term positive effects of acupuncture treatment. We foresee that it's possible to contribute to the process with acupuncture reminder sessions after the initial eight sessions.

Keywords: fibromyalgia, acupuncture, visual analog scale (VAS)

O-185

An alternative treatment modality that worths being considered by anatomists: prolotherapy

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Objective: In today's society, tendinopathies and joint degenerations are common due to working conditions and the long life expentancy. Considering chronic musculoskeletal pain has negative effects on productivity and quality of life, new treatment modalities are being searched to prevent and treat these conditions. Recent studies have shown that increasing joint stability with prolotherapy, reduces musculoskeletal pain and improves joint mobility

Methods: The origin of prolotherapy dates back to the Hippocrates period. The first known article about prolotherapy (then called 'sclerotherapy') in medical literature was published by Dr. Gedney in 1937. In 1958, Dr. George Hackett improved the injection technique and called the method as 'prolotherapy'. Prolotherapy is an injection technique based on iatrogenic stimulation of tissue repair mechanisms by injecting small amounts of irritant or proliferating solution into painful and degenerate enthesis points, joints, ligaments; during several treatment sessions.

Results: Temporary, low-grade aseptic inflammation at the injection site is created to activate fibroblasts and stimulate growth factors. New collagen is synthesized and the connective tissue is strengthened in the area.

Conclusion: Prolotherapy has been used to treat patients suffering from osteoarthritis, sports injuries, musculoskeletal pain, chronic back and low back pain, tendinopathies and ligament laxity. While performing the procedure, it is necessary to have a strong knowledge about anatomy of the injection area, to achieve maximum recovery from the treatment and to avoid complications. We believe that anatomists will highly contribute to the development and dissemination of this successful and minimally invasive technique.

Keywords: anatomy, ligament, prolotherapy, tendinopathy

O-186

The effect of Myrtus communis leaves extract on blood serum level which has occurred experimental urolithiasis on rats

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Objective: The aim of this study is to test the protective effect of Myrtus communis leaves against kidney stone experimentally induced by EG at blood serum level.

Methods: In this study, 10 week old male rats were used. The study was planned in metabolic caves for 28 days and all practises were made every day. Rats were divided into 4 groups. Group I received only drinking water and a routine diet. 0.75% EG was added to drinking water of Group II rats. To Grup III Rats 0.75% EG was added to drinking water and 300 mg/kg of Myrtus communis leaves was given. The rats in Group IV received only 300 mg/kg blueberry extract. During the study, daily drinking water and urine were measured. End of 28th day, calcium, uric acid, magnesium and creatinine levels in the blood of the killed rats were sacrifieded.

Results: In group 2, the urine rate and drinking water between 14–28 days were significantly lower than the other groups (Kruskal Wallis H Test $p<0.05$). When the blood calcium, uric acid, creatinine and magnesium values were examined, these values were found to be 8% –12% higher in the positive control group (Kruskal Wallis H Test $p<0.05$). The findings in the protective groups were similar to the control group.

Conclusion: Crystals are elevated in the blood serum of rats with kidney stones. The Myrtu communis leaves prevent the growth of these crystals. This project ha been supported by Erciyes University BAP unit with TDK-2018-8431 code.

Keywords: rat, kidney stone, ethylen glicol, Myrtus communis leaves

O-187

The effects of different fractions of Gilaburu viburnum opulus juice on the experimentally induced cancer in mice

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Objective: This study was performed to investigate the in vivo and in vitro effects of Gilaburu juice fractions on experimentally induced Ehrlich Ascites Tumor (EAT) in mice.

Methods: Mices were divided into five groups as negative, positive control, 5-FluoroUracil, Gilaburu fractions below 50 kDa and above. Ninth day animals were sacrificed. The samples taken from the internal organs were evaluated histopathologically. For in vitro analysis, cells were divided into six groups as control, 5-FluoroUracil, Gilaburu below 50 kDa and above. EAT cells were cultured at 37°C and 5% CO2 at 3, 24 and 48 hours. Annexin V, mitotic activity and cell cycle were analyzed by Muse Cell Analyzer.

Results: Tissue sections of the positive control showed intense EAT cells, whereas very few EAT cells were seen in the Gilaburu group above 50 kDa. There were a significant decrease of abdominal circumference and weight of mice in all treatment groups compared to the positive control group. In vitro analyzes showed that total apoptosis was significantly increased in Gilaburu groups (especially Gilaburu groups below 50 kDa) at 24 and 48 hours compared to control. It was observed that Gilaburu stopped the cell cycle at the G0/G1 stage and make slow the division of the EAT cells (especially above 50 kDa of Gilaburu fraction). The percentage of total depolarized cells increased significantly in Gilaburu groups above 50 kDa.

Conclusion: The results showed that Gilaburu extracts in different fractions may have an antitumoral effect on EAT. It's thought that this study will contribute to the treatment of cancer.

Keywords: antitumor, apoptosis, EAT, Viburnum opulus

O-188

Biomechanical and histological effects of the modified Logan solution on muscles and tendons

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Objective: No prior publication was found in the literature studying the biomechanical and histological effects of Logan or modified Logan solution (MLS) which used in our laboratory for cadaver fixation. It was aimed in this study to compare MLS fixation and other cadaver preservation procedures regarding the use in basic histological studies, anatomy education and surgical trainings.

Methods: This study was placed on 35 male 17-week-old Wistar Albino rats. MLS tissues were systematically compared with 10% formalin (F10), saturated salt solution (SSS), Thiel and frozen/thawed (FT) tissues. Organoleptic, morphometric, biomechanical and histological analyses were conducted.

Results: Organoleptic properties of Thiel and SSS fixated muscles and tendons were more similar to fresh tissue. Moreover, sensory properties of MLS fixated tissues were more similar to fresh tissue as compared to F10. No significant difference was observed in gross morphometric properties following any of the cadaver preservation techniques. MLS and F10 was observed to increase the Young's modulus of the tendons. Thiel and SSS fixated tendons had similar mechanical properties to fresh and FT tendons. No effect of fixation solutions on tendons are observed in the histological analysis. Thiel solution was observed to distort the microscopy of muscle tissue.

Conclusion: No muscle and tendon shrinkage due to fixative solutions was observed. We conclude MLS as a potentially bet-

ter alternative than F10 for long term cadaver fixation cases (e.g. medical education). Pondering the organoleptic and biomechanical analyses, Thiel and SSS fixed cadavers are more suitable for purposes as surgical trainings and development of new surgical procedures.

Keywords: cadaver preservation, formalin, modified logan solution, saturated salt solution, surgical training, Thiel

O-189

Morphometric features of choanae: a preliminary study

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Objective: Choanae is a pair of openings between nasal cavity and nasopharynx which are important in permanency of physiological airway. Choanal stenosis, atresia, polyps and obstructive sleep apnea increase clinical importance of this region. Aim of this study is to evaluate the morphological features of choanae in relation to gender and body side in a Turkish population sample.

Methods: Patients who had undergone head region computed tomography (CT) examination for any reason were retrospectively analyzed. The CT images of 55 patients (22 female-33 male) aged 18–21 years were transferred to OsirixMD software and coronal section where choanae could be observed best was determined. Height, width, circumference and area were measured from the bony and soft tissue boundaries on the coronal sections. In sagittal sections mucosal thickness and biparietal diameter from horizontal sections were measured. The results were evaluated according to gender, age and body side.

Results: Average width, height, circumference, and area of bony choanae were found to be higher than those of soft tissue boundaries. When all parameters were evaluated as male and female, a significant difference in parameters other than left choanal width, height and circumference and right choanal circumference measured from the soft tissue borders were observed. Bony choanae area, soft choanae width and soft choanae area had statistically significant differences according to body side.

Conclusion: Results of this study revelaed the morphometry of choanae in a Turkish population sample. Detailed interpretation of choanae is important to reduce complications during surgical interventions related with this region.

Keywords: choanae, computed tomography, morphometry, OsiriX

O-190

Micro-CT evaluation of the relationship between cochlea and carotid canal

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Objective: The aim of this study was to measure the distance between the carotid canal and the cochlea by using micro-CT in the width and base of the different morphological features of the cochlea.

Methods: 20 dry temporal bone were scanned under micro-CT as whole bone at a resolution of 33 Ìm. In this study, The widths of the ceiling and base parts of the cochlea were evaluated. Furthermore, the closest distances of carotid canal to cochlea and middle ear were measured. All measurements were performed with CTan software of Micro-CT device.

Results: The average values for 20 dry bones were 6.8655 mm for the base of the cochlea and 2.0287 mm for the ceiling; the wall thickness between carotid canal and middle ear was 0.5143 mm and the distance between carotid canal and cochlea was found to be 1.6709 mm.

Conclusion: Cochlea sections with different physiological and histological features had different morphological features. We believe that cochlear morphological features may be associated with the presence of different cochlear pathologies, especially sensorineural hearing loss and tinnitus. At the same time, we think that knowing the relationship between cochlea and carotid canal will be a guide for various surgeries, especially cochlear implants.

Keywords: anatomy, cochlea, micro-CT

O-191

Evaluation of surface marking of frontal sinus by three dimensional reconstruction method

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Objective: In this study, it is aimed to define the frontal sinus surface marking on the soft tissue according tomedial angle of the eye (endocanthion) and latera langle of the eye(exocanthion) by three-dimensional reconstruction method.

Methods: In our study, patients who had undergone head computed tomography (CT) in Zonguldak Bülent Ecevit University Medical Faculty Hospital for any reason were retrospectively analyzed. CT images of 72 patients (33 female–39 male) aged 18–80 years were transferred to the Osirix MD soft ware and three-dimensional reconstruction was performed. CT images were adjusted so that the frontal sinus and soft tissue could be be stobserved. The vertical and horizontal distances of the both end sandtop of the frontal sinus to the medial and lateral angle of the eye were measured.

Results: Frontal sinus was found to be 2.42 mm above and1.24 mm medial to lateral angle of the right eye and 2.26 mm above and 1.14 mm medial to lateral angle of the left eye.Vertical lengths drawn from the medial angle of the eye and lateral angle of the eye to the apex of the frontal sinus of both eyes showed a statistically significant difference between right and left.

Conclusion: In this study, it is aimed to contribute to anatomical knowledge by defining the location of frontal sinus on soft tissue in a sample of Turkish society. It is important to know the location of frontal sinus in terms of guiding the surgical interventions to be performed in this region.

Keywords: frontal sinus, three-dimensional reconstruction, anthropometry, Osirix

O-192

Optic neuritis and thyroiditis thought to be triggered by human herpes virus type 6

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Objective: Optic neuritis is an acute, usually monocular, inflammatory, demyelinating disease that causes vision loss. The term "optic neuritis" may also be used in other inflammatory and infectious conditions affecting the optic nerve. Numerous causes of optic neuritis have been reported. Some of these are optic neuritis caused by infectious agents such as Lyme, HIV, hepatitis-B and herpes viruses. Human herpes virus type 6 (HHV-6) is a herpes family virus. It has been reported to be associated with diseases such as cranial neuropathy, focal encephalopathy and autoimmune thyroiditis.

Methods: A 31-year-old female patient who had been followed up with Graves' disease for 5 months was evaluated for painful loss of vision in her left eye. It was learned that the patient who worked as a cabin crew frequently traveled abroad and was subjected to a regular vaccination program. Her neurological examination revealed pathological left afferent pupil defect. Fundoscopic examination revealed papillary edema on the left.

Results: Visual field examination revealed a sub-lateral visual field defect on the right and diffuse depression on the left. Cranial MRI was unremarkable. Cerebrospinal fluid (CSF) showed no cell, CSF biochemistry was found to be normal, oligoclonal band was negative, IgG index was normal. The patient was started on 1g pulse steroid daily for 5 days. From the third day of treatment, the patient's vision began to improve. HHV-6 PCR positivity was detected in the patient's CSF. Visual acuity and marked improvement in visual acuity were normal, thyroid function tests were within normal limits and anti-thyroid treatment was discontinued. HHV-6 is a virus that has been reported in autoimmune thyroiditis with various neurological function disorders such as cranial nerve deficits and focal neurological symptoms, especially in immunocompromised patients.

Conclusion: Our case was found to be worthy of presentation due to lack of immunodeficiency, HHV-6 positivity in CSF, thyroiditis and optic neuritis.

Keywords: optic neuritis, Human herpes virus Type 6, MRI

O-193

Occupational diseases of anatomy department employees

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Objective: The aim of this study is to investigate occupational diseases that may occur due to the risks of the employees exposed in anatomy department and to put forward the precautions to be taken.

Methods: Literature review has been done in doctoral, medical specialty and master's thesis in the field of anatomy. In addition, some review has been conducted about occupational health and safety in the field of physical, biological, chemical, ergonomic and psychosocial risks.

Results: Occupational diseases of the anatomy department employees were examined according to the risk factors they were exposed to. 1-Biological risk factors; Working with cadavers for a long time in educational processes and dealing with experimental animals in scientific researches can cause many occupational infectious diseases that are transmitted from person to person and from animals to humans. 2- Chemical risk factors; One of the most important chemical risks for anatomy workers is exposure to "formaldehyde" and the most affected organs are the skin, eyes and lungs. 3- Ergonomic risk factors; Low back pain, varicose veins in the legs and pes planus on the feet can be seen in Anatomy academicians 4- Physical risk factors; In occupants working indoors where thermal comfort conditions are not suitable, both oxygen deficiency and dust in the environment can cause occupational diseases, especially in respiratory system.

Conclusion: It has been determined that different occupational diseases can be seen in anatomy workers. Hazards and risks arising from working conditions, substances used, job requirements and employee behavior are indicated in groups.

Keywords: anatomy, occupational health, occupational disease, risk factors

Poster Presentations

(P-001 — P-120)

P-001

Investigation of effects of hyaluronic acid hydrogel on sciatic nerve injury by double immunofluorescence staining

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Objective: Functional recovery after sciatic nerve injury is quite difficult and unsatisfactory. Improving remyelination is very important for regeneration and Wnt Beta catenin signaling pathway regulates the myelin gene expression. Hyaluronic acid appears to enhance remyelination in the peripheral nerve regeneration. In this study we assess the effect of hyaluronic acid hydrogel on axonal and myelin damage using sciatic nerve injury model in rats using confocal microscope via Beta catenin and Cyclin D1.

Methods: Spraque-Dawley rats were divided to four groups of fifteen rats per group (Sham, Silicone Tube, Autograph and Silicone tube+Hyaluronic acid). Biopsy samples were prepared for confocal microscopic analysis. Primary antibodies used for immunofluorescence were rabbit anti beta catenin (1:1000, Cell Signalling) and mause anti-cyclin D1 (1:1000, Boster). Secondary antibodies used were goat anti rabbit IgG (Alexa Flour 488) and Goat antiMouse IgG (Alexa Flour 555) and the nuclei stained with DAPI (0.1 mg/ml in PBS). Prepared sections were analyzed on a Confocal Laser Scanning Microscope (CLSM) Zeiss LSM 800 (Germany).

Results: Compared to control groups, hyaluronic acid group sections revealed increased Beta catenin and DAPI signals. Medium site of the nerve was more organized than proximal and distal site findings. Although some myelin sheath appearance was not very regular, generally it was seen in healthy morphology. This work was supported by a grant from ESOGUBAP 2017-1483 and TÜBİTAK SBAG 215S839.

Conclusion: CLSM analysis showed the hyaluronic acid hydrogel showed positive effects in remyelination process. Detailed studies are required to elucidate the potential of this hydrogel systems.

Keywords: double immunofluorescense staining, hyaluronic acid hydrogel, sciatic nerve injury

P-002

Effects of visual field changes on balance

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Objective: In our study, it was aimed to investigate the effects of visual field changes on static balance analysis. The effect of vision on balance and its relation with proprioception was planned.

Methods: Our study was performed with 50 male volunteers aged 18-25. The data of volunteers were obtained through the gait analysis platform. Each analysis was measured in 30 and 60 seconds. The balance analysis measurements of the volunteers were performed five times for each volunteer. In the first measurement, no changes were made in the visual field and normal balance was measured. For later measurements, the volunteers were given a special glasses frame and the measurements were repeated by closing the right, left, down and up sides of the frame.

Results: In the 30-second measurements, a significant difference was found between "angle between Y and major axis and center of pressure (COP) path length". In 60-second measurements, a significant difference was found between "length of minor axis, %95 confidence ellipse and COP path length". A significant difference was observed between "length of minor axis, length of major axis, COP path length, %95 confidence ellipse and COP standart deviation Y" in the comparison of 30 and 60 second balance measurements.

Conclusion: It was observed that the balance changes in the anteroposterior and lateral-medial directions in 30-second measurements. When compared to normal measurements and others, the balance was found to be impaired according to normal measurements. It was observed that the balance deteriorated in 60-second measurements and this deterioration was higher than the 30-second measurements.

Keywords: visual field, balance, proprioception, balance analysis

P-003

Morphometric examination of the joint surfaces of trochlea tali

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Objective: The upper and lateral parts of the body of the talus have three articular joints that are jointed with the tibia and the

fibula and are incorporated in 90% of the ankle movements. In this study, we aimed to examine these joint faces of the talus, which is the key of the ankle movements, morphometrically.

Methods: The facies of talus are facies superior, facies malleolaris lateralis and facies malleolaris medialis. We measured the length, width and height of these joint surfaces. We did three length measurements (Medial Length (ML), Central Length (CL), Lateral Length (LL) and three width measurements (Anterior Width (AW), Central Width (CW), Posterior Width (PW) of facies superior. We did Central Height (CH) and Central Width (CW) measurements of facies malleolaris lateralis and facies malleolaris medialis. We also classified the talus according to types described in the literature.

Results: According to the measurements we have, on facies superior findings were; ML 32.6±3.2, CL 32.8±3.59, LL 32.98±3.24, AW 31.43±2.21, CW 31.15±2.3, PW 28.3±2.3 mm. On facies malleolaris lateralis findings were; CH 16.04±2.6, CW 26.59± 3.08 mm. On facies malleolaris medialis findings were; CH 24.1± 2.74 and CW 25.79±3.31 mm. %52 of the bones belonged to medial + lateral extension type of talus.

Conclusion: The data we obtained from talus will contribute to the formation of reference value, along with similar studies done in Turks, for physicians dealing with talus prosthesis and implant surgeries.

Keywords: talus, talus classification, talus morphometric measurement

P-004

Estimation of spleen volume using stereological methods

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Objective: Our study aimed to determine an effective volume calculation method for the spleen and to examine the Cavalieri principle.

Methods: Our study is a gold standard study. A cadaveric spleen was used for this study. The volume and error coefficient of the spleen were calculated by Cavalieri principle. According to the efficiency principle, the imaging method, slice thickness and point counting scale can be used to calculate the volume of the spleen. In addition, the reasons for error and neutrality of the method could be affected.

Results: The volume of the spleen measured with the Archimedes principle was 136,000 cm^3. The volume calculation results using magnetic resonance images ranged from 128.550 cm3 to 207.660 cm^3. The error coefficients of these calculations ranged between 0.009 and 0.135. The volume values obtained from the computed tomography images ranged between 115.106 cm^3 and 119.655 cm^3. There was a highly significant correlation between the volume values obtained by six different observers ($r=0.976$; $p<0.001$).

Conclusion: Cavalieri principle to calculate the volume of the spleen is the most appropriate imaging method for magnetic resonance. Within the appropriate error coefficient (5%); the most effective section thickness is 5 mm and the most effective point frequency is 15 mm. According to the accuracy of the calculation, the investigator should use a thinner thickness of 5 mm than the thickness of the cross-section and more than 15 mm. In addition, high compliance in calculations by different observers shows that the method is neutral.

Keywords: Cavalieri principle, computed tomography, efficiency, magnetic resonance, volume of spleen

P-005

Morphometric examination of anatomical structures on humerus

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Objective: Any pathology in the upper extremity, humerus, which we frequently use in our daily living activities, causes great limitations in our functional independent movements. We believe that this study will be a criterion for surgical interventions on humerus and morphometric and anthropometric measurements.

Methods: This study was carried out using digital calipers with sensitivity of 0.01 millimeters (mm) on 80 dry humerus bone specimens (56 left, 24 right) in the Anatomy Department of Erciyes University. Age and sex were not differentiated in bone samples. Measurements were performed on a total of 21 anatomical structures on the humerus.

Results: According to the results of our study, the maximum length of the humerus was 31.16±2.44 mm on the left and 29.85± 3.08 mm on the right. Minimum body diameter; mean 17.62±2.18 mm on the left side and 17.84±1.82 mm on the right side.

Conclusion: It is very important to know the normal anatomical structure of the humerus bone and to calculate the average values of the anatomical structures on this bone.

Keywords: humerus, morphometry, proximal humerus

P-006

Analysis of thoracic curvature by photoanthropometric method in scoliosis patients

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Objective: Scoliosis can be defined as a lateral curvature greater than 10 degrees of the spine. Aim of research is analysis of thoracic curvature by photoanthropometric method in scoliosis patients.

Methods: Research includes hundred patients treated in Ege University Hospital Orthopedics and Traumatology Surgery Clinic. Researcher used digital camera and non toxic coloured marker pen. Anatomical landmarks are pointed by using marker pen on skin. Nine photographs were taken for each patient. The angles and distance were measured by using Image J software.

Results: Patient with highest thoracic curvature had 12.85 degree cervical lordosis angle, 60.61 degree thoracic kyphosis angle and 20.5 degree lumbar lordosis angle. Thoracic kyphosis angle of patient who have highest thoracic curvature was detected above mean value. Patient with lowest thoracic curvature had 12.75 degree cervical lordosis angle, 50.4 degree thoracic kyphosis angle and 20.2 degree lumbar lordosis angle. Between thoracic kyphosis angle that is obtained with photoanthropometric analysis and thoracic degree of curvature that is measured with Cobb method was found positively correlated (r=0.809).

Conclusion: The registration of images is simple, quick, harmless and cost-effective. This study is characterised by high reliability of measurements. Effectiveness of digital photoanthropometric method in scoliosis patients was assessed.

Keywords: photo-anthropometry, scoliosis, spine anatomy, thoracic curvature.

P-007

Analysis of thoracolumbar curvature by photoanthropometric method in scoliosis patients

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Objective: Scoliosis is the most common deformity of spine. Purpose of the research is analysis of thoracolumbar curvature by photoanthropometric method in patients with scoliosis.

Methods: Research includes hundred patients treated in Ege University Hospital Orthopedics and Traumatology Surgery Clinic. Researcher used digital camera and non toxic coloured marker pen. Anatomical landmarks are pointed by using marker pen on skin. Nine photographs were taken for each patient. The angles and distance were measured by using Image J software.

Results: Patient with highest thoracolumbar curvature had 12,96 degree cervical lordosis angle, 59.47 degree thoracic kyphosis angle and 24.91 degree lumbar lordosis angle. Thoracic kyphosis and lumbar lordosis angle of patient who have highest thoracolumbal curvature was detected above mean value. Patient with lowest thoracic curvature had 10.48 degree cervical lordosis angle, 52.18 degree thoracic kyphosis angle and 20.97 degree lumbar lordosis angle. Between thoracic kyphosis angle that is obtained with photoanthropometric analysis and thoracic degree of curvature that is measured with Cobb method was found positively correlated (r=0.541). Between lumbar lordosis angle that is obtained with photoanthropometric analysis and lumbar degree of curvature that is measured with Cobb method was found positively correlated (r=0.771).

Conclusion: Photoanthropometry is a reliable method for analysis of thoracolumbar curvature in patients with scoliosis.

Keywords: photo-anthropometry, scoliosis, spine anatomy, thoracolumbar curvature.

P-008

Analysis of lumbar curvature by photoanthropometric method in scoliosis patients

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Objective: Scoliosis is a deformity that progress with diseases. Purpose of research is analysis of lumbar curvature by photoanthropometric method in scoliosis patients.

Methods: Research includes hundred patients treated in Ege University Hospital Orthopedics and Traumatology Surgery Clinic. Researcher used digital camera and non toxic coloured marker pen. Anatomical landmarks are pointed by using marker pen on skin. Nine photographs were taken for each patient. The angles and distance were measured by using Image J software.

Results: Patient with highest lumbar curvature had 13.83 degree cervical lordosis angle, 50.11 degree thoracic kyphosis angle and 26.44 degree lumbar lordosis angle. Lumbar lordosis angle of patient who have highest lumbar curvature was detected above mean value. Patient with lowest lumbar curvature had 12.93 degree cervical lordosis angle, 53.81 degree thoracic kyphosis angle and 21.85 degree lumbar lordosis angle. Lumbar lordosis angle of patient who have lowest lumbar curvature was detected below mean value. Between lumbar lordosis angle that is obtained with photoanthropometric analysis and lumbar degree of curvature that is measured with Cobb method was found positively correlated (r=0.902). SPSS Version 25.0 is used for all statistical analyses.

Conclusion: Photoanthropometric method can be alternative to radiation-based imaging Methods and contribute to patient follow-up.

Keywords: lumbar curvature, photo-anthropometry, scoliosis, spine anatomy

P-009

Analysis of double major curvature by photoanthropometric method in scoliosis patients

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Objective: Scoliosis can be defined as a lateral curvature of the spine, greater than 10 degrees as measured by the Cobb method. Aim of research is analysis of double major curvature by photoanthropometric method in scoliosis patients.

Methods: Research includes hundred patients treated in Ege University Hospital Orthopedics and Traumatology Surgery Clinic. Researcher used digital camera and non toxic coloured marker pen. Nine photographs were taken for each patient. The angles and distance were measured by using Image J software.

Results: Patient with highest double major curvature had 12.77 degree cervical lordosis angle, 63.65 degree thoracic kyphosis angle and 25.01 degree lumbar lordosis angle. Patient with lowest double major curvature had 11.6 degree cervical lordosis angle, 53.69 degree thoracic kyphosis angle and 21.49 degree lumbar lordosis angle. Between thoracic kyphosis angle that is obtained with photoanthropometric analysis and thoracic degree of curvature that is measured with Cobb method was found positively correlated (r=0.750). Between lumbar lordosis angle that is obtained with photoanthropometric analysis and lumbar degree of curvature that is measured with Cobb method was found positively correlated (r=0.831).

Conclusion: Analysis of double major curvature is possible by photoantropometric method in scoliosis patients.

Keywords: double major curvature, photo-anthropometry, scoliosis, spine anatomy

P-010

Cochlear nerve aplasia: a case report

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Objectives: Cochlear nerve aplasia is one of the causes of unilateral sensorineural hearing loss. Congenital hearing loss is seen in 2–3/1000 frequency at birth. The aim of this case report is to emphasize the importance of magnetic resonance imaging (MRI) in the diagnosis of cochlear nerve aplasia.

Case: An 8-year-old male patient presented to the Selcuk University Medical Faculty with hearing loss. Right cochlear nerve aplasia were detected with using the contrast temporal bone MRI images. Right internal acoustic meatus is measured 2.5 mm diameter according to the results of radiological examination. Right cochlear nerve was not observed. Left internal acoustic meatus is measured 5.5 mm diameter. Left vestibulocochlear nerve was normal.

Conclusion: Patients with cochlear nerve aplasia present to the clinic with the complaint of hearing loss. Patients presenting with hearing loss should be examined with anamnesis, physical examination, audiological and radiological examinations to determine the cause. Computed tomography; is especially used for detailed examination of bone structure and is effective in finding the causes of conductive hearing loss. MRI; is effective way to detect the lack of cochlear nerve which is one of the causes of sensorineural hearing loss. As a result, the cause of hearing loss should be clearly identified in order to decide appropriate treatment. For this purpose, radiological examination of temporal bone is very considerable.

Keywords: Cochlear nerve aplasia, Sensorineural hearing loss, Magnetic Resonance

P-011

Teaching brain anatomy using holographic images

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Objective: Number of the materials used in anatomy education increases with the development of the technology. Especially, development of the virtual reality provides us to evaluate the anatomical structures three-dimensionally in more detail. The aim of this study was to investigate the effects of teaching brain anatomy using holographic images on the medical students.

Methods: In presented study, we used the magnetic resonance images of a 27-year-old man who did not have any neurologic disorders. The brain model exported after three-dimensional reconstruction using Osirix-Lite software. These exported images imported into the Blender software for vertex correction and then imported into the Meshmixer software for final corrections. Hologramic image that obtained from the magnetic resonance images imported into the Microsoft-Hololens. After those procedures, brain anatomy was taught to the medical students using hologramic brain model.

Results: The most common problem faced by medical students during anatomy education is to understand the anatomical structures in three-dimensional. As a result of our study, using hologramic images during anatomy lectures is effective on understanding the anatomical structures in three-dimensional besides classical anatomy education.

Conclusion: The use of the hologramic images in anatomy education is a reliable method especially in the evaluation of the anatomical structures, for both bone and soft tissues, in

three dimensional. Furthermore, using three-dimensional models which obtained from real patients' magnetic resonance image series is significantly useful method for medical students who had difficulties in learning anatomy during anatomy education.

Keywords: brain, anatomy education, hologram, three-dimensionally model

P-012

Calculation of hippocampus volume using volBrain in musicians and non-musicians

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Objective: Neuroscience always want to explore how music can effect the human's brain. In this study, we aimed to determine whether there is any difference between hippocampus volumes of musicians and non-musicians.

Methods: In this study, we calculated the volume of hippocampus segments and the volume of total hippocampus ratio of the volume of intracranial by using voIBrain one of the automatic methods. Between the ages of 20–29, 14 male who were educated in the Music Department of Erciyes University Faculty of Fine Arts and 10 non-musicians male was included in this study and we used their MR images. Mann-Whitney U test was used for variables between groups.

Results: The hippocampus volume was calculated 5.24±0.45 cm3 in the musician group and 5.32±0.55 cm^3 in the control group. The ratio of total hippocampus volume to intracranial volume was 0.35%±0.02 in musician group and 0.34%±0.04 in control group. There was no statistically significant difference between the two groups ($p>0.05$).

Conclusion: The ratio of the volumes of the hippocampus segments and the total hippocampus volume to intracranial volume do not differ between the two groups. We think that our study may be a source for volumetric studies on hippocampus.

Keywords: hippocampus, magnetic resonance imaging, musicians, voIBrain

P-013

Molecular identification of the effect of MK-801 and dexmedetomidine on spatial learning and memory

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Objective: The aim of this work was designed to investigate effect of dexmedetomidine (DEX) on cognitive function and schizophrenia related genes in MK-801 induced schizophrenia model.

Methods: Male Balb / c mice were treated with MK-801 (0.50 mg / kg, i.p. once daily), DEX (10-20 µg / kg, i.p.) and MK-801 + DEX for 5 days. Spatial learning was then evaluated at Morris Water Maze (MWM). The mRNA expression of the schizophrenia-related COMT, REELN, NRG-1 and DISC-1 genes in mice with hippocampus isolated after the MWM test was performed by Real-Time PCR.

Results: In MWM, the application of MK-801 increased platform discovery time and reduced time spent on the target quadrant ($p<0.05$). The application of MK-801 + DEX decreased the time to find the platform and increased the time spent on the target quadrant compared to MK-801 ($p<0.05$). In the MK-801 treated group, mRNA expression of COMT, RELN, NRG-1 and DISC-1 genes decreased compared to the control group. NRG-1 and COMT gene expression increased in the MK-801 + DEX treated group compared to the MK-801 treated group, whereas RELN and DISC-1 gene expression decreased.

Conclusion: In the model of schizophrenia induced by MK-801, it can be suggested that impairment of cognitive functions was restored by DEX (10 and 20 µg / kg). Furthermore, it can be suggested that NRG-1, COMT, RELN and DISC-1 genes, whose expression decreases with MK-801 administration, may be associated with schizophrenia and DEX application has positive effects on NRG-1 and COMT gene expression.

Keywords: MK-801, DEX, schizophrenia, MWM

P-014

Morphologic study on patella

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Objective: The patella is located inside of quadriceps femoris' tendon and joins knee joint. Facies articularis is divided with a vertical edge into two joint faces. Clinics such as patellofemoral pain syndrome and patellar malalignment may occur in the mismatch between these faces and the patellar surface of the femur. In addition, morphology of the patella becomes important in arthroscopic resurfacing or in prosthetic surgery. Patella morphology has been examined and classified by radiological and anatomical studies.

Objective: We aimed to classify patella on dry bones by measuring the dimensions of patella, joint surfaces and angle between them. We think that the information obtained will help clinic and surgery. Methods: Forty-eight dry human patella at Department of Anatomy, School of Medicine, Akdeniz University with unknown age and sex were used. Bones, which had deformed basis or/and joint surfaces, were excluded. All measurements were performed by single investigator using digital caliper. After measurements, images of the bones were

taken from the top view and the angle between joint surfaces were measured digitally with ImageJ program.

Results: Mean values and standard deviations were calculated. The height of the patella was 39.70 mm±3.17 mm, width was 42.11 mm±3.09 mm and depth was 19.61 mm±1.30 mm. Width of the joint faces was measured as 19.70 mm±2.46 mm medially, 25.30 mm±2.25 mm laterally, angle between them was 123.15°± 7.15°. Patella was classified according to angle between joint faces and ratio between the widths as 87.5% Wiberg Type II, 6.25% Type I, 6.25% Type III.

Conclusion: We think that knowing the morphology will contribute to understanding of clinical complaints and planning of surgical treatments.

Keywords: patella morphology, patellar misalignment, patellafemoral pain syndrome

P-015

The effect of the use of plastinates in anatomy education on undergraduate students' success levels

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Objective: Formalin-based fixation solutions, traditionally used for cadaver preservation, adversely affect the study and teaching in the anatomy laboratory. The cost of anatomical models purchased from foreign countries is quite high. The use of plastination can minimize health risks and cost. The aim of this study was to evaluate the effect of plastinats on the undergraduate students' success.

Methods: 90 volunteer first-year medicine students, who didn't take cardiovascular system anatomy lessons yet, were included in the study. A pre-test consisting of 10 questions was applied to the students in order to determine their knowledge about the cardiac anatomy. They divided into two groups according to pre-test results. Thus, there was no significant difference between the two groups' knowledge levels. Both groups were given a 2-hour lesson by the same instructor. Formalin-fixed heart specimen was used in the lesson of Group1. In the lesson of Group2, both formalin-fixed heart specimen and plastinated heart were used. After the lesson, a 10-question exam was administered to both groups. Statistical analysis was performed using One Sample T-Test.

Results: The mean values of group1 test scores were 46.28±3.03 and the mean value of group 2 was 59.07±3.32. The scores of group 2 were significantly higher than the group 1 (p= 0.006). The test scores of the group that received lessons with both formalin-fixed specimen and plastinate were found significantly higher than those of the group that received lessons with only formalin-fixed specimen.

Conclusion: In conclusion, besides being cost-effective, healthy, long lasting and easy to maintain materials, plastinates are useful tools in anatomy education.

Keywords: plastination, plastinate, medical education, anatomy education

P-016

Planning of treatment in a patient with radicular cyst in the mandible, using 3D model and its effect on treatment process

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Objective: The success of surgical examination of the impact of the use of 3D modeling.

Methods: Male patient, 47-year-old, came to the Faculty of Dentistry with a complaint of the upper jaw. A small swelling of the gingiva was noticed in the lesion area of the lower jaw although the patient had no complaints about it. Tomography was requested because of wide radiolucent lesion detected in orthopantomography. A large lesion was observed throughout the corpus mandible. Histopathologic result of the lesion area revealed radicular cyst. Because of the huge dimensions of the cyst which are much larger than ever seen, to make pre-treatment planning right, 3D print models were received by taking a 3D image of the mandible throughout the computed tomography images. The treatment was planned considering the print model in the same size of the lower jaw of the patient.

Results: In the first stage Decompression treatment has been started. It was aimed to reduce the cyst size by reducing intracyst pressure. The use of 3D model before operation was the first in Oral and Maxillofacial Surgery of Dentistry Faculty, Ege University.

Conclusion: By the way the treatment process continuous, it can be seen that the initiatives are easier and more successful now.

Keywords: radicular cyst, mandibula, 3D

P-017

Morphometry and classification of the hard palate

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Objective: The hard palate is consists of the palatine process of maxilla and horizontal plate of palatine bone. The aim of this

study was to determine morphometry and types of the hard palate in dry skulls.

Methods: In this study, 26 skulls of unknown age-sex from Department of Anatomy, Çukurova University, School of Medicine were used. The palatine length, the palatin breadth and were measured by digital caliper nearest 0.1 mm. Deformed and fractured skulls were exluded from this study. SPSS Statistics 20 (IBM SPSS, Türkiye) Programmes were used for statistical analysis. Then the hard palate types were determined by calculating palatal index values.

Results: The mean palatine length was 46.12±3.37 mm and the mean palatine breadth was 34.56±3.75 mm. According to palatal index values, 73.08% of the skulls was Leptostaphylline, 15.39% of the skulls was Mesostaphyline, 11.53% of the skulls was Brachystaphyline.

Conclusion: We believe that this study results will make a contrubution to literature data by determining normal values of Turk population. And also our study results will be clinically helpful for production of maxilla implants and surgeries in this region by determining normative data.

Keywords: hard palate, maxilla, palatal index

P-018

A tendon variation of extensor digiti quinti propria and extensor carpi ulnaris

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Objective: The presence of an accessory tendon in dorsal compartment of 5 and 6 may cause extensor tendinitis, spontaneous rupture, subluxation and vaughn-jackson syndromes. The aim of this study was to determine the number, length, wide and type of accessory tendons which separated from Extensor Carpi Ulnaris (ECU) and Extensor digiti minimi (EDM) and to evaluate their clinical importance.

Methods: In this study 14 fixed wrist of cadaver were examined. The presence of an accessory tendon separated from ECU and EDM which was examined via length, width, location and distribution.

Results: Ulnar and radial tendons of EDM were detected in the right wrist of a female cadaver. The radial tendon was accepted as an accessory extensor digiti quinti proprius (EDQP) did not join extensor digitorum, while the ulnar tendon was normal. The radial tendon was 0.2±0.14 mm and 6.2±0.17 cm, the ulnar tendon was 0.4±0.14 mm and 6.4±0.17 cm. An accessory thin tendon was separated from ECU at ulnar styloid process. Accessory ECU was 0.1±0.14 mm, 6.4–6.5±0.12 cm and inserted in base of fifth metacarp instead of medial tubercle of fifth metacarpal bone.

Conclusion: The presence of accessory tendon may cause hypertrophy, tenosynovitis or joint subluxation by limiting functions of EDM and ECU. Treatment planning of fifth and sixth dorsal compartment should be done considering the anatomical variation of this region. The knowledge of anatomical variations of extensor tendon can assist to find alternative tendon sources in tendon grafts.

Keywords: variation, extensor digiti minimi, extensor digiti quinti proprius, accessory tendon, accessory extensor digiti minimi, accessory extensor carpi ulnaris

P-019

Drainage variation of right testicular vein: cadaveric study

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Objective: Testicular vein shows variations related with number, course and termination site. The right testicular vein embryologically develops from the lower part of the right lower cardinal vein and during development of right lower cardinal vein bifurcation leads to differences in termination of the right testicular vein. The presence of such variations may increase the risk of varicocele and complication in patients by affecting testicular drainage. For this reason, the variations related with number of testicular veins, course, and termination site were analyzed in cadavers.

Methods: This study was performed in 7 adult fixed cadavers during routine dissection in Department of Anatomy, School of Medicine, Bahcesehir University. The incidence, course, termination site and termination angle of the testicular vein were measured in cadavers.

Results: In this study, right testicular vein drained into the right renal vein instead of inferior vena cava at a 90° angle and 0.4±0.1 cm from the inferior vena cava in one out of seven cadavers (14%). The medial and lateral left testicular veins drained into the left renal vein at a right angle and 5±0.07cm from the inferior vena cava, while the other 6 cadavers had a normal left testicular vein in terms of course and drainage.

Conclusion: Testicular vein variations are important in the planning of surgical operations in the retroperitoneal region and varicocele surgery. The knowledge of anatomic variations of testicular vein can help surgeons and radiologists in recognizing the anomalies and avoiding possible hemorrhagic complications during surgical operations.

Keywords: right testicular vein variation, right testicular vein, left testicular vein, inferior vena cava, varicocele

P-020

The relationship of trochanter minor with arteria circumflexa femoris medialis

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Objective: Trochanter minor (TM) is cone-shaped protrusion at the bottom of the neck of femur where tendons of psoas and iliacus muscles attach. Surgically, nervus sciaticus and arteria circumflexa femoris medialis (ACFM) are important neighbours. ACFM is separated from the posteromedial aspect of arteria profunda femoris. It moves posteriorly in the adductor compartment, passes between obturatorius externus and adductor brevis muscles, gives transverse and ascending branches in front of quadratus femoris muscle. It has been reported that avascular necrosis develops as a result of damage of these branches which have an important role in the nutrition of the femoral head and neck. ACFM needs to be considered in anterior or posterior approaches in TM surgery, such as the treatment of ischiofemoral impingement syndrome. In this study, we aimed to provide anatomical contribution to the determination of direction, angle and position in surgical procedures by knowing the relationship of trochanter minor with arteria circumflexa femoris medialis.

Methods: The study included total 40 (18 male) patients, aged 29–78 years who were admitted to Department of Radiology, Akdeniz University. Magnetic resonance images obtained in phase-contrast; fat-saturated sequence was used. Patients with lower extremity complaints or vascular disease were excluded. Distance between TM and ACFM before branching was measured digitally with measuring instruments included in imaging program.

Results: The mean and minimum-maximum distances between TM-ACFM were 24.99 mm, 13.28 mm - 40.64 mm on the left and 27.32 mm, 15.95 mm - 42.19 mm on the right.
Conclusion: We think that data obtained will help to plan the surgery and prevent complications such as avascular necrosis.

Keywords: trochanter minor, medial circumflex femoral artery, trochanteroplasty, avascular necrosis

P-021

A case of bilateral brachial artery variation

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Objective: In general, the brachial artery is a continuation of the axillary artery at the lower border of the teres major. Ultimately dividing into two terminal branches, namely, the radial and ulnar artery, at the cubital fossa. It provides feeding of shoulder, arm, forearm and hand muscles and elbow joint through its branches. The aim of this case report is to show the variation in the course of arteria brachialis. Methods: In this case presents the variations observed in the branching level of the right and left brachial arteries during dissection of the arm of a 64-year-old male cadaver.

Results: It was observed that brachial arteries did not end in fossa cubitalis on both right side and left side, but ended in two branches, arteria radialis and arteria ulnaris, near the proximal part of the arm. In this case, variation of brachial artery was detected bilaterally.

Conclusion: Vascular, nerve and muscle variations of the upper extremity have been extensively discussed in the literature and are still an important issue. In the upper extremity, variations of the radial artery were observed with 15.6%, while the incidence of variations of ulnar artery were much less (9.5%). Brachial artery pathologies are common in the clinic (18.4%) due to their close anatomical relationships with the surrounding structures. It is important to know the variations of brachial artery especially in surgical interventions to this region.

Keywords: brachial artery, variation, ulnar artery, radial artery

P-022

Intraforaminal dural septations of the jugular foramen: a cadaveric study

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Objective: The dura mater on inner surface of jugular foramen (JF), forms a separate compartment to protect various venous structures and cranial nerves. In JF glossopharyngeal nerve (CN IX) is separated from vagus (CN X) and accessory nerve (CN XI) with a dural septum. The aim of this study is to define dural septations on inner surface of JF and describe them according to the classification system which includes four types of dural septation (Type I; dural septation between IX and adjacent X and XI; Type II; no septations in JF, Type III; separation between XI and adjacent X and IX, Type IV; multiple separations).

Methods: 9 cadaveric cranium were bilaterally dissected. Relationships were determined between inner surface of the JF and adjacent cranial nerves. They were classified in order to define the meningeal relationships of JF. Results: Type I-II of dural septation were recorded according to the classification system. Septation between anterior IX and posterior X and XI (Type I) was detected only on right side of one cranium (5.56%). The remaining 17 sides (94.44%) were detected as Type II. The length of the septum was 0.6-1±0.05 mm and arachnoidea mater reached with dural septation and inserted in inferior ganglia. Type III and Type IV were not observed.

Conclusion: The dural septations are important anatomical landmarks that will assist to relate the approach to meningeal morphology within the JF during surgical operations. The detailed anatomical knowledge of dural septations and variations may guide surgical approach by minimizing complications.

Keywords: jugular foramen, dural septum, dural septation, glossopharyngeal nerve, variation

P-023

Relationship between pre-segmental artery variation and kidney size

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Objective: Several studies demonstrate that there is correlation between kidney size and renal artery. Kidney size has a close relation to nephrosclerosis, atherosclerosis, glomerulosclerosis, interstitial fibrosis and tubular atrophy. There is not adequate data about the relationship between presegmental renal artery and size of kidney. The aim of this study was to evaluate the correlation between variation of presegmental renal artery and kidney size.

Methods: The study material comprised of 7 fixed cadavers of both sexes, which were obtained from Department of Anatomy, School of Medicine, Bahçeşehir University. Variations of kidneys were recorded during abdominal routine dissection. Presegmental arteries were classified as their positions related to the hilum and evaluated in relation to kidney size.

Results: Pre-segmental artery variations were prominent on right side. Bilateral symmetrical micro-kidneys were detected which had also pre-segmental artery variation. Kidney size was normal another cadaver and had also accessory renal artery. Accessory pre-segmental artery and micro-kidneys were detected on right side of another cadaver. Accessory renal artery, originating from abdominal aort at L3 and entering through the inferior pole of kidney. Accessory pre-segmental artery entering through the surface of the kidney below its hilum.

Conclusion: The presence of accessory renal and pre-segmental artery may be related with abnormal development and positions of kidneys. Clinicians should have a knowledge of presegmental artery variations for preoperative planning and surgical approach. Arterial variations, morphological and functional changes of kidneys are clinically important to avoid from complications.

Keywords: renal artery variation, pre-segmental renal artery variation, segmental artery variation, micro-kidney, accessory segmental artery

P-024

Nomenclature of sella turcica

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Objective: Sella turcica is an anatomic formation in the upper part of the sphenoid bone, where the pituitary gland is located. The term of sella turcica is Latin and means Turkish saddle. The aim of this study is to examine the nomenclature of sella turcica historically.

Methods: Sedella (saddle) is a Latin word and derived from the word which means sitting. Sella (Latin) means a seat, chair or stool without a support zone for the head or back. The word "Turcica" refers to the Turks.

Results: In the past, different names such as ephippium, fossa pituitaria, sella equina, sella ossis, sella sphenoidalis and pars sellaris have been given to this formation. It was named as sella turcica because of its similarity to the saddle used by the Turks. The shape of Turkish saddle is characteristic and differs from other saddle types with its larger seating area, high handle. Saddles were also used to show the social and financial status of the people. In the 15–16th centuries, European travelers talked about Turkish saddles with admiration. This fascination also affected anatomical terminology and this formation was called "sella turcica". Andreas Vesalius described this pit as cavity. In the following years, terms such as sphenoidis sella, sella equina and ephippium emerged. The term of sella turcica came into being in the Adrianus Spigelius' book published in 1627.

Conclusion: Sella turcica is a term commonly used in anatomical terminology in which the word "Turk" exists. Therefore, it is important in terms of medical history and Turkish culture.

Keywords: sella turcica, pituitary gland, sphenoid bone

P-025

Two rare variations in the branching pattern of arcus aortae and their clinical significance

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Objective: In classical anatomical configuration, the aortic arch is on the left side and is divided into brachiocephalic trunk (TB) [right common carotid artery (RCC) and right subclavian artery (RS)], left common carotid artery (LCC) and left subclavian artery (LS) has three branches (49.7–94.3%). Variations of the aortic arch branching form are reported in 7 types and its prevalence is reported as 14.7%: Type I: Normal type (49.7–94.3%) Type II: (Bovine) Branching of LCC from TB (7.8–41.1%) Type III: Origin of the left vertebral artery directly from the aortic arch (1.4–6%) Type IV: ACC origin of common root (0.16–0.2%) Type V: Common trunk of carotid artery originating from right retroesophageal subclavian artery in 20.6–29% (0.2–1.7%) Type VI: ASD, as the last branch of the aortic arch (0.16%) Type VII: The absence of TB and the origin of RSA and RCCA directly from the aortic arch (0.16–0.7%).

Methods: Vascular carotid DSA CT images in the archives of the Department of Radiology were scanned retrospectively and two rare variations ın branching pattern of aortic arch were observed.

Results: In CT scans, 41 and 48 years old male patients had Type III and Type IV branching variation, respectively.

Conclusion: Despite the precise knowledge of anatomy, preoperative radiological evaluation provides the basis of complex surgical procedures on the head and neck, thus making the surgical procedure safer and more effective. Anatomical variations in the branching pattern of the aortic arch are of great importance for clinicians in head and neck and cardiovascular surgery in interventional radiology.

Keywords: aortic arch branching patterns, anatomical variations, CT angiography

P-026

Investigation of sulcus sinus transversus and sulcus sinus sigmoideus variations

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Objective: Knowledge of the localization of sinus transversus and sinus sigmoideus is very important for posterior interventions to the skull. This information may be helpful in protecting the dura sinuses from complications, which can result in fatal bleeding. For this purpose, it was aimed to determine the distance of the grooves formed by sinus transversus and sinus sigmoideus in the skeleton according to certain points.

Methods: The study was conducted on 20 dry skulls basis cranii in the bone laboratory of the Anatomy Department of Erciyes University School of Medicine. The distance of the protuberantia occipitalis interna (POI) to the foramen magnum(FM) (POI-FM) using the caliper from the origin of the sinus sigmoideus (SS) of the right and left sides (POI-SS), distance of the origin of the right and left side of the sinus sigmoide to the for.jugular (POI-FJ), distance of the origin of the right and left side of the sinus sigmoide (POI-FM), origin of the right-left sinus sigmoideus distance (SS) and for.magnum sagittal (FM-RC) and transverse diameter (FM-RC) were measured.

Results: The mean distance of the protuberentia occipitalis interna to the origin of the sinus sigmoideus (POI-SS) was 58.41±6.52 on the right side and 61.81±5.52 on the left side.

Conclusion: It is important to know the localization of intracranial dura sinuses in order to prevent sinus injuries during an intracranial intervention. We think that this information will be useful in interventions to the fossa cranii posterior.

Keywords: sinus durae matris, transvers groove, sigmoid groove

P-027

Right processus transversus shortness and joint surface in the first lumbal vertebra: case report

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Objective: Anatomical variations seen in vertebrae may cause many health problems in people and in some cases show no symptoms. In this case report, the shortness of the right processus transversus (proc. transversus) seen in a lumbar vertebra and the joint surface on this protrusion were reported.

Methods: During routine laboratory studies, a lumbar vertebra with anatomical variation was used in the laboratory of the Department of Anatomy of Erciyes University School of Medicine. Right and left proc. transversus length was measured. 30 undeformed lumbar vertebrae in the laboratory, proc. transversus lengths were measured and compared. 0.01 mm precision digital caliper was used in the measurements.

Results: The mean value is 16.43 mm of right proc. transversus's length, 16.76 mm of the left side. The vertebra with variation is 2.00 mm the right proc. transversus's length, 16.15 mm of the left side.

Conclusion: The right proc. transversus of the lumbar vertebra with anatomic variation is considerably shorter than that of the left side. The joint surface is also seen on the right proc. transversus. Therefore, it suggests that the vertebra is articulating with the accessory rib and is the first lumbar vertebra. Keywords: lumbar vertebra, anatomical variation, accessory rib

P-028

Investigation of Alsberg and collodiafizer angles in femur

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Objective: Knowledge of the morphometric properties of the femur is important in calculating the collodiafizer and Alsberg angles. These angles; In the orthopedic field, it is important in cases of coxa vara and coxa valga in the hip, as well as the length of the femoral neck and the circumference of the femoral head guide the way in which surgical procedures should be followed. The aim of this study was to evaluate the morphometric properties of the femur by the manual methods and to evaluate the effect of the angles on the collodiafizer and Alsberg in the proximal femur.

Methods: In our study, morphometric measurements were performed on 132 right and 64 left femurs (dry skeleton) in Erciyes University Anatomy Department. The circumference of the femoral head, inter-trochanter length, inter-condyller length, femoral neck length, the length of the femoral head center to the trochanter major and the length of the femoral head center to the fovea capitis femoris were measured by tape measure. Collodiafizer and Alsberg angle were measured with protractor and compass.

Results: The mean value of Alsberg angle was 45.97±3.95 and collodiaphyseal angle was 130.28±5.93; the mean value of the left femoral Alsberg angle was 47.27±4.83 and the mean value of collodiafizer angle was 127.11±5.00.

Conclusion: Alsberg and collodiafizer angle, orthopedics and traumatology in the field of x-ray imaging and surgical procedures are important contributions.

Keywords: Alsberg angle, collodiafizer angle, os femoris

P-029

Natural lip morphometry among young adults

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Objective: To define the natural lip morphometry of young adults for helping surgeons in the lip operations. The data obtained from measurements will be used on individuals who are going to undergo a lip operation based on their gender. The unnatural appearance and the regret after a lip operation will be prevented.

Methods: Fourty women and forty men were participated the research. The measurements were made by using the digital caliper. The distance between commissura labiorum, thickness of the upper and the lower lip, the length of philtrum and the width of philtrum were measured. The photographs of the volunteers were taken in order to evaluate the position of their pupil and commissura labiorum.

Results: The lower lip is thicker than the upper lip significantly ($p<0.001$). The length of philtrum is longer than the thickness of upper lip significantly ($p<0.001$). The ratio of width of philtrum to distance between commissura labiorum was found 0.240± 0.045 mm in women and 0.262±0.049mm in men. This ratio is lower in women than man ($p=0.042$). The pupil was found to place laterally to commissura labiorum in sixty individual (75%), medially in one individual (1%). In nineteen individual (24%) pupil was found to place at the same line with commissura labiorum.

Conclusion: To have a natural appearance, the lower lip should be thicker than the upper lip; the length of philtrum should be longer than the thickness of upper lip; the ratio of the width of philtrum to the distance between commissura labiorum should be shorter in women than men.

Keywords: lip morphometry, natural lip ratio, philtrum

P-030

3D reconstruction and morphometric evaluation of sternocleidomastoid muscle

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Objective: In this study creating a three dimensional (3D) model of sternocleidomastoid muscle by computer programs and morphometric examination of this 3D model was aimed.

Methods: The Visible human dataset was used as the input imaging data in this study. Segmentation process was performed by separating the sternocleidomastoid muscle from other tissues. Segmentation was performed manually in Surfdriver package program. In addition, claviculae, proximal sternum and the skin surrounding this region were also reconstructed to enhance visual perception. Surface editing of the obtained 3D model were performed in Cinema 4D program.

Results: Bilateral sternocleidomastoid muscles and claviclae with manubrium sterni, as well as the surrounding skin tissue were reconstructed. Distance between clavicular origo and insertion of, right and left sternocleidomastoid muscles were: 11.19 cm ve 10.91 cm respectively. Distance between origo on manubrium sterni and insertion of, right and left sternocleidomastoid muscles were: 13.49 cm ve 12.99 respectively. Volumes of right and left sternocleidomastoid muscles were; 10.14 cm^3 and 10.02 cm^3 respectively. Length and volume calculations were performed on Surfdriver package program. After morphometric evaluations, for the purpose of creating a realistic 3D model, surface editing and covering with suitable textures for bone, muscle and skin tissues were performed in Cinema 4D program.

Conclusion: Separation of sternocleidomastoid muscles from adjacent anatomic structures was performed by manual segmentation. Although manual segmentation is a time consuming process, the obtained 3D models are more suitable with real anatomical objects. In addition, the Cinema 4D program allows the 3D model to become more realistic with dramatic effects.

Keywords: 3D reconstruction, anatomy, sternocleidomastoid muscle, Surfdriver

P-031

Patient-specific arteria lusoria models of as a life-threatening complication with aberrant right subclavian artery

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Objective: The aberrant right subclavian artery (ARSA) may originate from the left portion of the aortic arch as known the arteria lusoria. The aim of this study was to create live patient with ARSA with respect to location, course, and relationship to trachea and esophagus using new recent application of three-dimensional (3D) printed anatomical models.

Methods: 520 patients with routine two-dimensional axial images of computed tomographic angiography (CT-A) were investigated to presence of ARSA. With the help of the DICOM files from CT-A, printed models of the ARSA were able to build.

Results: Two cases with similar characteristics and progression of ARSA were examined. Supraaortic region, there were three supra-aortic branches originating directly from the left arch. The first branch was a common bicarotid trunk giving off the left common carotid artery and right common carotid artery. The second branch was left subclavian artery. The third branch was the right subclavian artery, it was associated with Kommerell's dilatation. Retroaortic region, there was narrowing of the mid-trachea and significant compression of the posterior esophagus caused by the ARSA at the thoracic inlet. it has been shown that the lining of the esophagus and the lumen of the esophagus in the inferior can not be cut at the level of ARSA.The variant anatomy with 3D models was made clearer and more detailed with the life-size 3D aortic arch models.

Conclusion: A combination of 3D printing technology and casting processes led to the creation of actual presurgical anatomical models that include high-fidelity reproductions of the topographical details.

Keywords: aberrant right subclavian artery, aortic arch anomaly, arteria lusoria, dysphagia lusoria

P-032

Application of virtual three-dimensional simultaneous visualization of right aortic arch

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Objective: A new application of demonstrating anatomy includes the use of computed tomography angiography (CTA) images to create clinically relevant three-dimensional (3D) technology. Right aortic arch is an uncommon anatomical anomaly. The goal of congenital heart anomaly models is mainly a better analysis of their complex anatomies to optimize the patient-specific anatomy. The purpose of this article is to review recent innovations on the process and the application of 3D printed models as a tool for using under- and post-graduate medical education.

Methods: 520 patients with two-dimentional axial images received by CTA were converted into 3D images using the Google SketchUp free software and were saved in stereolithography format. The printed models of the right aortic arch was built using a 3D printer (Makerbot), a model mode polylactic acid material was printed. Results: The variant anatomy of the two patients was made clearer and more detailed with the life-size 3D heart models. One case was found Type 1 as mirror image aortic arch, and the other one was Type 2 right aortic arch. The external shape of the aortic arch and its major branches and their dimensions are measurable. No statistically significant difference was found between the model measurement and CT-A measurement values.

Conclusion: The early adopters in education and clinical practices have embraced the medical imaging-guided 3D right aortic arch printed anatomical models for their ability to provide tactile feedback and a superior appreciation of visuospatial relationship between the anatomical structures. Printed vascular models are used to assist in treatment planning.

Keywords: anatomic variation, preoperative planning, right aortic arch, three dimentional printed model

P-033

Morphometry of clavicle

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Objective: The clavicula is the leading junction of the upper extremity that connects the trunk and extends between the sternum and scapula. The aim of this study was to determine the morphometric dimensions of the clavicula which acts as a guide in the movements of the shoulder joint.

Methods: 36 clavicle of unknown sex (17 right -19 left) in the bone laboratory of the Anatomy Department of Erciyes University School of Medicine.are performed. Clavicular length, thickness of extremitas acromialis, length and width of impressio costoclavicularis, length and width of fascies sternalis, length and width of facies acromialis and the perimeter of the midpoint are measured with a digital Vernier caliper in addition the dry weight of the clavicle was weighted in gram with the aid of a digital scale.

Results: Clavicular average length was 138.30±12.49 mm; superior inferior thickness of extremitas acromialis was 10.70±1.97 mm; anterior posterior thickness of extremitas acromialis was 23.93±2.90 mm; length of impressio costoclavicularis was 22.00± 5.45 mm; width of impressio costoclavicularis was 7.61±1.87 mm; length of fascies sternalis was 17.85±2.78 mm; and width of fascies sternalis was 21.71±2.96 mm length of fascies acromialis was 9.9±1.93 mm; width of fascies acromialis was 19.61±2.73 mm; the perimeter of the midpoint of the clavicle was 34.72±4.03 mm and dry weight of the clavicle was measured to be 15.28±4.2 gram.

Conclusion: Information on the clavicular measurements may be essential and important for orthopaedic surgeons in clavicle fractures, and to choose a standart treatment modality in many other conditions.

Keywords: clavicle, clavicle length, clavicle width, clavicle weight

P-034

Using 3D patient-specific models for aiding treatment decision in cases of dilatation of ascending aorta

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Objective: Dilatation of the ascending aorta and aortic root either due to congenital or valve dysfunction causes often different protocol procedure in treatment process, which lead the cardiologists to control. The high incidence of structural anomalies in the aortic wall and the severity of its complications make it necessary to watch these patients very closely. This study proposed to evaluate the use of 3D models of the patients with dilate ascending aorta.

Methods: 10 patients' computed tomography angiography scans were imported into DICOM imaging software to obtain 3D surface renderings of ascending aorta. 3D models of heart, ascending aorta and root of aorta were created using 3D modelling software.

Results: 3D ascending aorta vascular models assist us to comprehend the spatial anatomy configuration of like-like models. 3D personalized vascular models help to examine the location of the dilatation in details with reference as well as its extension in patients suffering from dilatation of ascending aorta. Not only the geometrical changes caused by valve dysfunction changes in aorta but also the anatomical variations could easily be manipulated from different angles with the models.

Conclusion: Because of the possibility of fatal ascending aortic dissection and rupture, 3D patient-specific heart models were performed. Patient-specific models could provide an increased understanding of the complex vascular details of the dilatation and allow cardiologists to orient geometrical changes of ascending aorta more effectively. Therefore they may serve useful purpose in treatment planning, guide the operation time and control possible failures.

Keywords: sscendens aorta dilatation, preoperative planning, 3D modelling

P-035

Bilateral hyperplasia of C3 spinous process: case report

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Objective: Spinous process is only protrusion extending from junction of lamina arcus vertebrae to back. Abnormalities of this osseous structure are usually incidental radiological findings. However, it sometimes causes clinical symptoms such as cervical pain, limitation of movement in the cervical region, neurological deficits and non-aesthetic appearance. A 48-year-old female patient admitted to the hospital with upper extremity pain was referred to MRI Department for cervical vertebral imaging. Spinous process of cervical 3rd vertebra (C3) was found to be focal thickened/expanded. The signal is matched with other bone structures. Thickened spinous process, craniocaudal axis length is 24mm. It extends 12 mm in the anteroposterior direction. The right/left diameter was 21mm. No signal change was observed at the thickened spinous process level after contrast medium application. Lateral roentgenogram showed correlation with bone structure and was evaluated as variation. In first year of life, spinous process occurs by fusion of the osseous appendages growing from both arcus vertebralis by endochondral ossification. Tip of spinous process develops from a secondary ossification center during puberty. Cases with unilateral hyperplasia have been previously reported in literature. Abnormal prolongation of ossification of arcus vertebralis on one side and normal development of other arch may explain the anomaly with unilateral hyperplasia. In our case, both arches were enlarged in all directions. Bilateral hyperplasia of C3 spinous process was not found in the literature. This finding may be clinically interesting for radiologists, neurologists, orthopedic surgeons, anthropologists, and forensic staff.

Keywords: anatomy, hyperplasia, spinous process, variation

P-036

The use of 3D scanners in anthropometric measurements

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Objective: Anthropometric measurements show racial, genetic, socioeconomic and cultural differences among individuals and these measurements important in the areas of growth-development monitoring, evolution, forensic medicine and ergonomics. Anthropometric studies generally uses caliper (manual), digital photography and radiological imaging methods for measurements. Today, one of the methods that can be used as a measurement tool are 3D scanners. In the light of this information, the parameters measured using caliper, which is the gold standard, were compared with the parameters measured on digital photography and 3D models.

Methods: The study was conducted by B.U.Ü. School of Medicine Anatomy bone collection was performed by measuring 6 parameters on 23 females of unknown sex. Somet İnox brand mechanical sliding caliper was used for dry bone measurements, Sony branded DSCHX300 digital camera was used for digital photography and Artec Eva 3D scanner was used as 3D scanner. SPSS 22.0 software was used for statistical analysis.

Results: Photo measurements and 3D measurements were compared against the gold standart separately for the left and right bones. The results of the analysis were interpreted as $p<0.05$. According to the results, the difference between the gold standard and 3D measurements in the right side medial condyle width measurements was statistically significant ($p=0.011$). There was no significant difference between the groups for remaining parameters.

Conclusion: The difference in right medial condyle measurements may be due to measurement mistakes or small sample size. As a result, measurements on digital photography and 3D models were found to be useful measurement methods

Keywords: femur, anthropometry, morphometry, 3D scanner

P-037

The role of anatomage, model and cadaver preparation in anatomy education

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Objective: Anatomy chairs are in search of more equipped, self-renewing methods to effectively involve medical students in lectures and laboratory studies. In addition to the use of cadavers in anatomy, in some medical faculties, fissile anatomy models and / or three-dimensional (3D) anatomical simulations are also used as alternative teaching tools and it is tried to contribute to the academic achievement of the students. This study was performed to evaluate the effectiveness of Anatomage® used in anatomy education.

Methods: 50 volunteers from the School of Medicine were divided into two groups: Traditional methods (Cadaver and Model) and Anatomage. Both groups were pre-tested before the Urogenital-Endocrine Course Committee and post-tested after the Committee. In addition, a questionnaire was applied to both groups to determine their attitudes and behaviors related to the committee. Frequency, percentage, t-test were used to evaluate the data. Study performed in T.C. Demiroğlu Bilim University Anatomy Laboratory and Istanbul Florence Nightingale Hospital Anatomage Laboratory.

Results: Post-test results were significantly higher in all groups. There was a significant difference between pre-test and post-test in the control group and pre-test and post-test in the experimental group ($p<0.05$). Moreover, according to the results of the survey, the majority of the participants reported that traditional methods (cadaver+model) were more effective than Anatomage.

Conclusion: In this study, traditional methods are an effective method in the development of students' anatomy teaching and understanding skills.

Keywords: anatomy, cadaver, model, anatomage, education

P-038

Morphologic typing of the superior orbital fissure of late Byzantine and present periods crania

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Objective: The aim of this study was to investigate morphological typing of the superior orbital fissure in crania of Byzantine and present periods. Methods: The study was carried out with 27 present-day and 22 Byzantine crania belonging to the bone collection of the Uludağ University School of Medicine, Department of Anatomy. In determining of morphologic type of the superior orbital fissure based on the classification Sharma et al. and Reymond et al. (Type A-I). Accordingly, the right and left orbits were evaluated separately in cranium of both of periods.

Results: The most common morphologic type was found to be Type D (28.57%) when right-left difference was not observed in the cranium of the present period and the right and left orbits were evaluated separately, Type E (21.43%) followed. In the Byzantine crania, the most common morphologic type was Type F (31.25%), and Type F was the most common form in both right and left orbits.When all crania included in the study were evaluated regardless of the period difference, the most common Type D (27.02%) in the right orbita, the most common Type in the left orbits was type F (37.03%).

Conclusion: The superior orbital fissure, which connects the orbita with the fossa crani media, is a small but topographically important region. In this study, data on morphology of the superior orbital fissure in crania of two different periods living in the same geographical region are presented.

Keywords: superior orbital fissure, morphology, shape, variation

P-039

How can we reduce formaldehyde exposure in anatomy laboratories?

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Objective: Formaldehyde is a reactive and easily polimerised aldehyde, widely used by anatomists for fixation and preservation of tissues and cadavers. It is commonly used as formalin; diluted formaldehyde (37%) with water and methanol (6–13%). At room temperature, formaldehyde quickly evaporates to a irritating colourless gas with a strong odour, which can be recognised by humans at concentrations around 0.8–1 ppm. Formaldehyde is allergenic, toxic, mutagenic and carcinogenic. Considering its effects on human health, it is important to reduce the exposure of students, educators and staff to formaldehyde.

Methods: A literature search of PubMed, EMBASE, MEDLINE and ISI Web of Science was carried out using the keywords 'formaldehyde, exposure, safety, anatomy.' Also, formaldehyde safety guidelines of university laboratories in the USA and Europe were reviewed.

Results: The permissible limit for formaldehyde in the air is 0.75 ppm for 8 hours and 2 ppm for short-therm exposure. In higher levels, respirators must be worn. Having a ventilation system, eyewash station, shower and formaldehyde spill

response kit in laboratory is needed. Wearing aprons, safety glasses and double nitrile gloves while dissecting is strongly recommended. Spraying urea solution on cadaver may help to reduce the evaporation of formaldehyde.

Conclusion: Formaldehyde, commonly used in anatomy laboratories, is highly harmful to human health. Therefore, it is important for anatomists to take precautions to reduce formaldehyde exposure and to know what to do in case of a serious spill / splash.

Keywords: anatomy, exposure, formaldehyde, laboratory, safety

P-040

Superficial arterial variations of upper extremity: case report

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Objective: We present a case containing bilateral upper extremity arterial variations.

Methods: During routine dissections, we found a series of variations in the course of the brachial artery (BA) and its branches in both upper extremities of a 78-year-old male cadaver.

Results: On the left side, BA was in normal anatomical course and divided into terminal branches 2 cm distal to the intercondyler line (IL). Radial artery (RA) was observed superficial to brachioradialis and flexor carpi radialis, while the ulnar artery (UA) continued in normal course. Superficial palmar arch was formed by palmar branch of this superficial RA and UA. There was a smaller semisirculer arch 1 cm proximal to the main arch. On the right side, BA was in front of the median nerve after its passing between two roots of the nerve. It was divided into its terminal branches 1 cm distal to IL. Therefore, we identified this variation as superficial BA. The right RA was on the superficial to brachioradialis and flexor carpi radialis, and gave off common interosseus artery (CIA). The right UA was running superficial to pronator teres, flexor carpi radialis, palmaris longus and flexor digitorum superficialis in the proximal forearm. It has been reported that superficial BA is seen approximately in 9%, superficial UA in 3% and superficial RA in 1% of the cases. We could not find any data regarding to CIA arising from the superficial RA.

Conclusion: We are of the opinion that our case containing bilateral varied superficial arteries can be considered clinically important.

Keywords: brachial superficial artery, common interosseous artery, radial superficial artery, superficial ulnar artery, variations.

P-041

Pulmonary venous return anomaly: case reports

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Objective: There may be anomalies of return of pulmoner veins to heart or other veins or arterial endings to pulmonary veins. It is important to know and understand pulmonary vein drainage pattern variations in order to perform clinical applications.

Methods: Thorax computed tomography images in the archives of Radiology Department of Meram Medical Faculty Hospital were scanned retrospectively. Images of cases with return anomaly were examined by reconstruction methods.

Results: In a 28-year-old female and a 57-year-old male patients, it were observed that the pulmonary vein draining the left upper lobe passed anterior to the aortic arch to the left brachiocephalic vein on three-dimensional computed tomography images.

Conclusion: Detecting the variational anatomy, localizations and return anomalies of pulmonary veins before clinical interventions, especially in video-assisted lobectomy and radiofrequency catheter ablation therapy, helps us avoid any vascular injuries and increases the success of the application.

Keywords: pulmonary vein, return anomaly, lobectomy

P-042

Bilateral neck and upper extremity nerve variations: case report

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We present a case containing bilateral nerve variations in the neck and upper extremities. We found bilateral nerve variations in a 78-year-old male cadaver. The C4, C5 and C6 roots of the brachial plexus entered posterior triangle of the neck by piercing the scalenus anterior (SA) before combining to form the left upper trunk (UT). In the left forearm, the median nerve had characteristic of bifid median nerve (BMN) by dividing into two branches 2 cm proximal to flexor retinaculum. After passing through the carpal tunnel, medial branch of BMN gave off the third and fourth common palmar digital nerves (CPDNs), and lateral branch gave off the first and second CPDNs as well as thenar muscular branches. In the right side, the C5 and C6 roots were piercing SA before combining to form the right UT. The lateral cord pierced coracobrachialis and then it was divided into musculocutaneous nerve and lateral root of median nerve within the muscle. In the right forearm, there was also a BMN formation. Its bifurcation level was located 1.5 cm proximal to flexor retinaculum. After passing through the carpal tunnel, medial branch of BMN gave off the second, third and fourth CPDNs. Lateral branch divided into

three terminal branches; the first one to the thenar muscles, the second one reaching separately adductor pollicis and the last one extending as first CPDN. The incidence of penetration of SA by the roots or UT bilaterally was reported in 2% to 21.5%, and BMN has been noted in 3% of the cases. We are of the opinion that our complex variant case can be considered clinically important.

Keywords: bifid median nerve, brachial plexus, scalenus anterior, upper trunk, variation

P-043

A rare variation of vena sacralis mediana: case report

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A rare case of drainage of the vena sacralis mediana was encountered during pelvis venous system dissection. Therefore, the literature on the variations of the vein has been studied. During the routine dissection of a 45-year-old female cadaver, the course of the vena sacralis mediana and its adjacent structures were studied and the beginning and ending sections of the vein were clearly identified. We found that the vena sacralis mediana, which was originally a pair, merged above and observed in a single vein in pelvis and drained to the vena iliaca communis dextra. In classical anatomy books, it is stated that the vena sacralis mediana drains mostly to the vena iliaca communis sinistra and sometimes to the junction of the vena iliaca communis. In this case, the vena sacralis mediana was drained to the vena iliaca communis dextra. A similar case has not been found in the literature reviews regarding this variation.

Keywords: variant vein, vena sacralis mediana, cadaveric study

P-044

A morphometric research of aorta abdominalis and its branches: an anatomical and radiological study

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Objective: In this study, diameters of AA and its visceral braches, right common iliac artery (RCIA) and, left common iliac artery (LCIA) are measured and compared in autopsy cadavers and multidetector computed tomography.

Methods: Abdominal cavities of 25 human cadavers were dissected using classical autopsy method. AA is reached using routine dissection. AA and its branches are drawn schematically and photographed. Diameters of AA and its visceral braches, right common iliac artery (RCIA, AİCD) and, left common iliac artery (LCIA) diameters are measured. Also the diameters of side branches (left gastric artery, splenic artery and common hepatic artery) of celiac trunk (CT) are measured. 18 other measurements of same branches are carried out using multidetector computed tomography retrospectively.

Results: Comparisons of radiological and autopsy measurements show that diameters of CT, superior mesenteric artery, inferior mesenteric artery, left renal artery (LRA) and right renal artery (RRA) are larger in autopsies compared to radiological measurements. CT, RRA, LCIA and RCIA diameters are larger in males than females. The differences are statistically significant ($p<0.05$).

Conclusion: The differences between radiological and autopsy measurements shall be due to the fact that the radiological measurements are from the interiors and autopsy measurements are from the exteriors of artery walls. The higher arterial diameter measurement results of male cases were; it can be explained by the fact that the physical development characteristics of men are different than women. It is assessed that knowledge of diameters of arteries would be a guide for clinicians todetermine the sizes of instrumentation needed and the methods of surgical intervention.

Keywords: aorta, diameter, morphology, autopsy

P-045

Post-intubation tracheal stenosis: case reports

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Objective: Post-intubation tracheal stenosis (PITS) was previously considered a rare clinical condition. The incidence of PITS increased in recent years because the intensive care units and indications for endotracheal intubation have increased in last two decades. The aim of this study is to raise awareness about PITS which is an iatrogenic complication.

Methods: Thoracic computed tomography images in the archives of the Department of Radiology of Meram Medical Faculty Hospital were scanned retrospectively. The images of the PİTS cases were examined by reconstruction methods.

Results: In two male patients (27 and 69 years old), three-dimensional images obtained by computed tomography showed narrowing of the air column and virtual bronchoscopy showed tracheal lumen stenosis. When the patient was evaluated together with his anamnesis, these stenosis were diagnosed as PITS.

Conclusion: It has been reported that 65% of the intubated patients may develop various tracheal injuries, 19% may have tracheal stenosis, and only 1–2% of all intubated patients may be symptomatic due to tracheal stenosis. PITS cases, the majority of which are asymptomatic, should be considered in thorax images with tracheal lumen stenosis.

Keywords: intubation, tracheal stenosis, virtual bronchoscopy

P-046

Comparison of palmar crease lengths in normal and anencephalic fetuses

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Objective: Intrauterine development of thenar crease begins at the 9th week, distal and proximal transverse creases at the 13th week and the palmar creases appear clearly at 15 weeks. In studies, it has been suggested that there are structural differences in palmar creases due to number of genetic congenital diseases. In this study, palmar crease lengths were compared between normal and anencephalic fetuses and it was aimed to determine whether there is a difference or not.

Methods: In this study, a total of 26 fetus cadavers, 11 anencephalic (8 girls, 3 boys) and 15 normal (10 girls, 5 boys) embalmed in 10% formaldehyde at the Karadeniz Technical University School of Medicine Department of Anatomy, were used in this study. Intrauterine age was determined by measuring foot lengths after each fetus was numbered. The right and left hands of the fetus cadavers' were photographed. In the images we detected the starting point and the end points of the palmar creases in both hands and measured them 3 times in ImageJ program. The arithmetic means of the measurements were taken and recorded in millimetres. The values obtained in normal fetuses were compared statistically with the values of anencephalic fetuses.

Results: The intrauterine ages of the fetuses were between 21.2 and 39.2 weeks. Fetuses' full development in the distal transverse, proximal transverse and thenar creases were visualized and evaluated. There was no difference in the lengths between normal and anencephalic fetuses in both hands. **Conclusion:** Neural tube defects are thought to have no effect on palmar creases.

Keywords: fetus cadavers, palmar creases, right-left hand

P-047

A talon cusp: five cases reports

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A talon cusp is descriped as a well-delineated the abnormal structure located on the surface of the primary or permanent anterior teeth. It is composed of normal enamel and dentine with a varying degree of pulp tissue.The aim of this study was to investigate the clinical and radiographic characteristics of this anomaly with talon cusp in five patients. Five patients who were admitted to the Oral Diagnosis Clinic of Oral and Maxillofacial Radiology Department of Gazi University Faculty of Dentistry for various reasons, who were diagnosed with talon tubercle on dental examination were included in this study. The mean age of the patients, one female and four male, was 32+2. No systemic disease was found in the patients. Extraoral examination showed any no abnormality. Talon cusps were seen in one maxillary lateral incisor of three patients and in two maxillary lateral incisors of two patients during the intraoral examinations. It was revealed a 'V' shaped talon tubercle in the related to dental crowns during the radiographic examination. In the electrical pulp test applied to the teeth, the related teeth were determined as vital. Occlusion control with articulation paper showed premature contact with opposite teeth in two cases. These two patients were referred to the Department of Restorative Dental Treatment for the treatment of tubercle erosion to prevent occlusal trauma and subsequent pulpal and periodontal complications. Dentists should be careful towards to the dental anomalies encountered in clinical and radiographic examination. Be aware of complications and precautions to be taken due to these anomalies.

Keywords: anomaly, tooth, talon cusp

P-048

Am I looking in the mirror? A case of situs inversus totalis

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Objective: Situs inversus is a congenital positional anomaly characterized by transposition of the thoracic and abdominal viscera. When present with right sided heart (Dextrocardia) is termed as Situs inversus totalis. Situs inversus totalis is constitute a mirror image of the normal anatomy. It was first described by Matthew Baillie in the 16th century. The purpose of this study to review a case of situs inversus totalis with radiographic findings.

Methods: Radiological report and literature review.

Results: Situs inversus totalis was observed incidentally on computed tomography images of a 34-year-old woman. The heart was on the right side of the thoracic cavity and aortic arch was turns right. Liver and gallbladder were on left side while spleen was on the right side of the abdominal cavity. Fundus of stomach was on the right and the first part of the duodenum was lying to the left of the midline in the left hypochondrium.

Conclusion: The incidence of situs inversus totalis is 1 in every 8,000 to 25,000 births, and the condition is most often diagnosed by radiographic examination. The exact etiology of this congenital anomaly is still unknown. Situs inversus is usually diagnosed incidentally while researching for another disease. Nowadays, the use of imaging methods frequently increases the detectability of this anomaly.

Keywords: situs inversus totalis, dextrocardia, mirror image

P-049

Occipital artery and ascending pharyngeal artery variation: case report

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Here, we present a rare case of external carotid artery branching variation and discuss possible developmental and clinical aspects. Right external carotid artery variation was observed in a female cadaver during routine dissection at Istanbul School of Medicine. The skin, superficial fascia, platysma and the sternocleidomastoid muscle were dissected and the common carotid artery and its branches were exposed. The right externel carotid artery yielded 3 branches immediately after the bifurcation. Superior thyroid artery was the first branch of external carotid artery at the level of carotid bifurcation. The occipital and ascending pharyngeal arteries originated at the carotid bifurcation. The occipital artery originated from the anterior aspect while the ascending pharyngeal artery originated from the posterior aspect of the bifurcation. Usually, the occipital artery emerges from the posterior aspect of the external carotid at the level of facial artery. Although origin variations of the occipital artery are frequent in the literature, the course of the occipital artery close to the carotis bifurcation is rare. In our case, the occipital artery and its territory might be at more risk during carotid endoplasty (endarterectomy) or extra-intracranial arterial by-pass procedures due to its lower origin. This lower origin may also be confusing during radiologic evaluations. Therefore, knowledge of such variations gains importance for clinical practice.

Keywords: artery, ascending pharyngeal, occipital

P-050

Creating three dimensional dry bone model using photography

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Objective: Acquiring and preserving three dimensional models of dry bones which are widely used in student education and research.

Methods: A dry vertebra from Cukuruva School of Medicine Department of Anatomy was chosen for this study. This vertebra was then fixed into position on a rotatable mechanism. Artificial light source was focused on the subject. Serial photos were taken while rotating the bone 6 degrees in between shoots. The same method was repeated after positioning the bone upside down. A total of 120 photos were acquired after the shoot. These photos were transferred to computer and imported to 3D Zephyr Lite. This program analyzed the photos and reconstructed a 3 dimensional point cloud with point matching algorythms. After creating a polygon mesh from these point clouds, surface of the model was rendered with the mask created from photos as well.

Results: Reconstructed vertebra model we acquired from photographs presents superior quality in terms of surface properties and detail compared to commonly used radiological image segmentation reconstruction.

Conclusion: Method we used can be considered as a choice in transferring dry bones present in anatomy laboratories to a digital environment, therefore minimizing the loss in education and research caused by environmental effects, for a minimal cost.

Keywords: vertebra, 3D Zephyr Lite, model

P-051

Defining an effective zone of injections in piriformis muscle with reference to standard and reliable anatomical landmarks

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Objective: The treatment options for piriformis syndrome includes injections of local anesthetics, corticosteroids, and botulinum neurotoxin. The present ultrasound-guided injections rely on visualizing the piriformis muscle while performing internal/external rotation to hip when the hip and the knee is flexed. However, ideal positioning and performing these maneuvers in a patient with pain or obesity may not always be possible. This study was therefore performed to define an effective zone of injections in piriformis muscle with reference to standard and reliable anatomical landmarks regardless of the position of the hip.

Methods: For this purpose, 10 cadaveric lower limbs were dissected to define the relation of piriformis muscle to superior posterior iliac spine (SIPS) and tip of ischial tuberosity (IT). The motor nerve entry points of piriformis muscle were also defined. Then, measurements were performed on 60 coxa to define the relative position of the piriformis muscle.

Results: The mean distance between the SIPS and IT was 12.8 cm. The distance between the SIPS to upper edge of the piriformis muscle was 4.6 cm, and of the lower edge was 7.4 cm. It was determined that the nerve innervating the piriformis muscle was found at the upper edge of the piriformis muscle being a branch of superior gluteal nerve in 9 out of 10 cases. **Conclusion:** The majority of the piriformis muscle is innervated by superior gluteal nerve and the ideal site of injections in piriformis muscle was suggested to be the upper 1/3 of the line connecting the SIPS-IT.

Keywords: anatomical landmarks, botulinum, injection, piriformis syndrome

P-052

Morphometric study on sacrum

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Objective: Sacrum forms back and upper wall of the pelvic cavity. It occurs by the merging of 5 sacral vertebrae. Trans-sacral implants are often used in sacrum fractures. However, complex and highly variable sacral anatomy limits the use of implants. Sacrum morphometry is important to determine the dimensions of trans-sacral corridors. In this study, we aimed to assist the clinical studies as a result of morphometric analysis of sacrum.

Methods: 35 dry human sacrum at Department of Anatomy, School of Medicine, Akdeniz University with unknown age and sex were used. Deformed bones were excluded from study. All measurements were performed with digital caliper. Height of right and left facies auricularis, width of right and left facies auricularis, right and left pedicle height of 1st sacral vertebrae, right and left pedicle height of 2nd sacral vertebrae, width of the narrowest part of the sacrum at the 1st and 2nd sacral vertebrae levels was measured.

Results: Mean values and standard deviations were calculated. Right and left height of facies auricularis was 57.55±6.12 and 56.42±5.77, respectively; right and left width of facies auricularis was 31.99±7.5 and 30.78±5.25, respectively; right and left height of pedicle of the 1st sacral vertebrae was 21.02±2.97 and 21.97±6.42, respectively; right and left height of pedicle of the 2nd sacral vertebrae was 14±2.63 and 13.72±2.82, respectively, width of narrowest part of sacrum at the 1st and 2nd sacral vertebrae levels was measured as 106.85±6.87 and 89.27±6.67, respectively.

Conclusion: We think that knowing morphometry will contribute to the planning of surgical treatments.

Keywords: sacrum morphometry, trans-sacral implants, sacrum fractures

P-053

The effects of C2–C3 fusion on the dimensions of the intervertebral and transverse foramen

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Objective: C2 and C3 vertebrae fusion, a rarely encountered anomaly, may be congenital or acquired. C2–C3 fusion samples, their comparison with the vertebrae without fusion and whether the fusion cause vessel and nerve compressions are analyzed in this study.

Methods: A set of 43 C2 cervical vertebrae, 5 adult fixed cadaver and a digital caliper with a sensitivity of 0.01 mm are used. In the bone sets, intervertebral foramens and transverse foramens are measured in vertebrae having C2–3 fusions. Transverse foramens in dry bones without fusion and intervertebral foramens in cadavers are measured. Both of them are compared with dry bones having fusion.

Results: 2 units of C2–C3 fusion are observed within the analyzed 43 cervical dry vertebra set. Average height and width in the right and left sides were 5.80×6.28 mm and 5.76×5.85 mm for transverse foramen of vertebrae without fusion, but 7.7×7.25 mm, 6.55×6.45 mm for the transverse foramen with fusion. The average height and width of intervertebral foramen in the right and left sides were 9.0×8.48 mm and 9.9×8.36 mm in the cadaver dissections, but 7.1×6.9 mm and 6.8×8.35 mm in the case of the dry vertebra with fusion.

Conclusion: It is shown in this study that for the cases with C2-C3 fusion, the intervertebral foramen dimensions were significantly small ($p<0.01$). This may cause spinal nerve compression and related symptoms in cases having C2–C3 fusion. Furthermore the transverse foramen dimensions were evaluated to be wide in cases with fusion.

Keywords: cervical vertebrae, vertebral fusion, vertebral synostosis

P-054

A tendon variation of the first dorsal compartment

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Objective: The tendons are protected by a synovial sheath during their passage through osteofibrous compartments. Anatomic variations usually occur in the first compartment. The aim of this study was to analyze the anatomic variation, distal location and course of abductor pollicis longus (APL), and to investigate its relationship with extensor pollicis longus (EPL) and brevis (EPB).

Methods: 14 fixed cadaver wrists were examined in the Department of Anatomy, School of Medicine, Bahçeşehir University. The tendons of APL, EPL and EPB were measured via length, width and their relationship.

Results: Two out of 7 cadavers (28%) had APL tendon variations. Lateral was accepted as the main APL and medial as the accessory tendon. There were differences in the course of APL tendon. The lateral APL (0.2-0.3±0.07 mm ve 6.5±0.5 cm) inserted at the base of 1st metacarpal bone, medial APL tendon (0.5±0.07 mm ve 6±0.4 cm) inserted in the trapezius. The width and lengths of EPL and EPB were 0.6±0.07 mm, 5.7±0.3 cm ve 0.3±0.14 mm, 4.5±1.5 cm respectively. Lateral and medial APL were 0.3-0.4±0.07 mm 5.5±0.5 cm and 0.5±0.07 mm ve 5.4±0.4 cm, EPL and EPB were 0.6±0.07 mm ve 6.2±0.3 cm and 0.5±0.14 mm, 7.5±1.5 cm respectively in other cadaver.

Conclusion: Knowledge of tendon variations is required for accurate diagnosis of neurological diseases. Variations in APL tendon can cause arthrit of carpo-metacarpal joint and de quervain tenosynovit. APL muscle symptoms may remain asymptomatic. For the reconstruction of the EPL tendon rupture, the accessory APL tendon can be used as a graft material. Therefore,

tendon variations should be considered when planning the surgical treatment.

Keywords: variation ,abductor pollicis longus, anatomical snuffbox, extensor pollicis longus, extensor pollicis brevis, accessory tendon

P-055

The variation of distal humerus: supratrochlear foramen and clinical implications

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Objective: At the distal humerus a thin plate separates the coronoid fossa and olecranon fossa. After the 7th year of life it may degenerate due to mechanical stress and supratrochlear foramen may occur. Phylogenetically the supratrochlear foramen is one of the characteristic features that showed the close relationship between humans with other species. Mostly it is found on the left side and may be seen as oval, round, triangular and irregular in shapes. In the literature one case was reported about the passage of the median nerve through the foramen which was resulted with weakness and pain at the hand. The aim of this study was to identify the incidence of the supratrochlear foramen in the Turkish population.

Methods: The study was performed at Hacettepe University School of Medicine Department of Anatomy, Ankara on 120 dry humerus. Two of the bones which had been fractured from the distal portion were discarded and the remainder undamaged 118 specimen were examined. Presences of supratrochlear foramen were noted.

Results: Total 118, 63 right and 55 left, humerus were examined. STF was noted on the 20 (16.9%) of the 118 total dry humerus. 13 of them were left sided (23.6%) and 7 of them were right sided (11.1%).

Conclusion: Knowledge of the anatomy of this variation is important for radiologist and surgeons during the diagnosis and treatment of the pathologies of the distal humerus, especially in the differential diagnosis of the osteolytic or cystic lesions.

Keywords: supratrochlear foramen, anatomy, humerus

P-056

An anatomical view intended on closed interventions to the superior cervical ganglion

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Objective: The aim of this study is to identify the structures that may injured and cause complications in closed interventions to the superior cervical ganglion (SCG).

Methods: Two fresh-frozen head-neck specimens of human cadavers were used in this study. The specimens were kept at -80 °C for 48 hours, one in neutral and the other in 30° right rotation before sectioning. 0.8 cm thick transverse sections between C1-C6 vertebrae levels were obtained with a band saw. During the investigation the sections were kept in 2% formalin for one week. After surface cleaning the sections were examined macroscopically and under a dissection microscope (×2–×24) to define the structures and relational changes with rotation position particularly for closed interventions.

Results: Important contiguities of the SCG were identified in this examination. Especially, relations with a. carotis interna, v. jugularis interna and n. vagus were observed and described. Positional changes of the structures by head-neck rotation was described.

Conclusion: We focused on how to avoid possible complications by determining the structures which are at risk, especially in closed approaches to SCG. This part of our study is a preliminary examination and the findings will be supported by further dissections.

Keywords: sectional anatomy, superior cervical ganglion, sympathetic block

P-057

Investigation of morphometric properties of nervus mentalis in newborns

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Objective: The morphometric properties of the n. mentalis which provide sensory innervation to lower lip and jaw region, should be well known in the surgical procedures. We aimed to determine the morphometry of the branches of n. mentalis and their relationships with each other.

Methods: After dissections of the lower lip and jaw of 20 newborn cadavers, measurements were taken by using 9 criteria.

Results: Mean values for measurement criteria were determined as; rima oris width 20.6 mm, lower lip depth 8.4 mm, distance between for. mentale-symphysis menti 13.7 mm, main trunk length 2.8 mm, angular branch length 11.8 mm, inferior labial branch length 17.1 mm, mental branch length 10.1 mm, the distance between angular- inferior labial branch at the level of the lower lip 8.5 mm and the distance between the inferior labial branch and the midline at the level of the lower lip 5.6 mm. 'Morphometric measurement index' was established in order to compare our measurements with the results of similar studies using similar criteria or modify them to adult measurements. For this purpose, 'symphysis menti' was taken as predetermined bone structure and the distance between for. mentale and symphysis menti was determined as' index constant'.

Proportional evaluations were done between index constant and angular, inferior labial and mental branch lengths. The ratios were found to be '0.85', '1.23' and '0.75, respectively.

Conclusion: Dissection-based measurements and 'morphometric measurement index' are characteristic findings which may lead clinicians on surgical intervention in the distribution area of mental nerve branches, in the lower lip region and on mandible.

Keywords: newborn, mental nerve, morphometry

P-058

A preliminary study on the morphology of the fovea capitis femoris

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Objective: The fovea capitis femoris (FCF) serves as a landmark for hip arthroscopy and has anthropological importance. Number of studies on detailed FCF morphology, however is limited. Therefore, this study was aimed to investigate the morphology of FCF.

Methods: After obtaining ethical approval (number: 682; date: 06.05.2019) from Clinical Research Ethics Committee of Istanbul School of Medicine, 79 (38 right, 41 left) femora with no record regarding age or sex from the collection of Department of Anatomy were evaluated. FCF shape, location, and presence of perifoveal grooves, notches, or osteophytes were investigated.

Results: The shape of the FCF was circular, oval, triangular, and irregular in 39.2%, 39.2%, 15.1%, and 6.3% of cases, respectively. All FCF were located at the posteroinferior quadrant of the femoral head. More than half (56.1%) of the femora had a perifoveolar groove or notch and 30.3% had osteophytes around the fovea. FCF shape and presence of perifoveal groove/notch were not siginificantly different between right and left sides. Similarly, presence of perifoveal groove/notch was not siginificantly different among different FCF shapes.
Conclusion: Detailed preliminary observations were carried out on the morphology of the FCF in a Turkish population. Further investigations on the relationship between FCF morphology and femoral morphometry including femoral neck angle and femoral torsion angle are planned.

Keywords: fovea capitis femoris, morphology, perifoveolar groove, perifoveolar notch, osteophyte

P-059

Morphometric evaluation of radial recurrent artery

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Objective: Literature shows that most of the studies investigating the radial recurrent artery (RRA) seem to focus more on morphology of this artery. Accordingly, we aimed to evaluate the morphology and morphometry of RRA in detail and highlight its clinical relevance with the obtained data.

Methods: After obtaining ethical approval from the Clinical Research Ethics Committee of Istanbul School of Medicine (number: 1145; date: 18.10.2017), 40 upper limbs of human cadavers were studied. The morphology of the RRA was evaluated according to its origin. The perpendicular distance of the artery to the intercondylar line and diameter of the artery at specific reference points were measured.

Results: The origin of the artery was radial artery (Type A) on 47.5%, root of radial artery (Type B) on 32.5%, brachial artery (Type C) on 17.5%, and ulnar artery (Type D) on 2.5% of cases. The perpendicular distance of the artery to the intercondylar line was 32.2±6.8 mm. The diameter of the RRA at the origin and the diameter immediately after the first branch were 2.5±0.5 mm and 2.0±0.4 mm, respectively. The distance from the origin of the first branch of the RRA to the RRA origin was significantly different between both sexes (p=0.039). There were no significant differences between sexes and sides for the remaining morphometric variables.

Conclusion: The morphology and morphometry of the RRA may be a guide for surgeons performing free upper extremity flaps and interventional radiologists.

Keywords: radial recurrent artery, morphology, morphometry, elbow region, forearm flap

P-060

Determination of the degree of spine curvature by 3D scanning method in patients with adolescent idiopathic scoliosis

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Objective: In patients with idiopathic adolescent scoliosis, determining the degree of spine curvature is important in the follow-up of the disease and treatment processes. However, patients are exposed to radiation due to routine radio-graphic examination methods used in the clinic. The aim of our study was to compare the data obtained from the Cobb method, which is used in the measurement of spine curvature and caused radiation exposure, with the data obtained from the non-invasive three-dimensional scanning method.

Methods: Twenty-one patients with adolescents idiopathic scoliosis (7 males, 14 females) aged 9–16 years (mean±standard deviation, 14.5±1.9) were included in the study. The back of

the patients was scanned with a light-based three-dimensional scanner. Afterwards, the RMS values were calculated by overlapping the digital images with the mirror images obtained from these images. The correlation between RMS values and the Cobb angles was calculated.

Results: Mean Cobb angle value was calculated as 13.6°±5.8° and RMS as 3.9±2.1 mm. Significant correlation was found between RMS and Cobb angle values (r=0.64, p=0.002). Conclusion: We believe that the results obtained from our study will contribute to the development of new non-invasive methods to determine the degree of curvature of the spine.
Keywords: 3D scanning, adolescent idiopathic scoliosis, Cobb angle

P-061

Evaluation of facial motion during smiling in the mouth and cheek region: a pilot study

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Objective: Smiling has a special importance from social, psychological, and aesthetic points of view. Therefore, the determination of dynamic parameters in healthy individuals important for the understanding of facial biomechanics. The aim of our study is to determine and compare the range of motion, velocity and acceleration parameters of the specific landmark on both sides of the face during smiling.

Methods: During smiling, facial motion of 6 volunteers (3 male and 3 female) aged between 19 and 40 years (mean 26.8±8.7 years old) were obtained by opto-electronic motion analysis system. For data collection, four landmarks (mx=maxillar, chk=cheak, ch=chelion, nsl=nasolabial) were used on each side of the mouth and cheek area. Each volunteer repeated the movement five times and the mean value was obtained.

Results: Individual differences were observed in the dynamic parameters of each landmark on the both side of the face. However, we found that these differences had a significant high correlation between both sides (correlation coefficient range between 0.8 and 0.9, p<0.001). Mean values were determined for range of motion in the right and left side as 9.2 mm and 9.3 mm, for velocity as 33.8 mm/s and 26.9 mm/s and for acceleration as 235 mm/s^2 and 277 mm/s^2 respectively. No significant difference was observed when the both sides were compared (p>0.05).

Conclusion: The results of our study may contribute to the development of new quantitative and noninvasive methods to be used to evaluate the deterioration of movements of facial muscles caused by trauma or neurological diseases.

Keywords: facial expressions, facial motion analyze, facial symmetry

P-062

Three-dimensional morphological analysis of mouth region during smiling

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Objective: Smile is a sign of positive feelings and is often used in daily life. The impairment of smile due to neurological diseases or trauma may disrupt social communication. For this reason, to determine morphological changings in mouth region is important for neurologists, plastic and reconstructive surgeons, orthodontists and craniomaxillofacial surgeons. The aim of the present study is to determine the morphological parameters of the mouth region. Methods: Mouth region of twenty (10 male, 10 female) healthy subjects aged between 23 and 45 years were recorded and digitized in 3D during neutral and smiling face expressions. A mirrored image was generated from original digitized image. Then, the asymmetry value of the mouth was calculated by means of the root mean square formula (RMS) by superimposition of original and mirrored images. Additionally, the area of the region was calculated.

Results: A statistically significant difference was found between the mean asymmetry values (RMS) of mouth region between neutral (0.8±0.3 mm) and smiling face positions (1.7± 0.8 mm, p<0.05). The area of mouth region was significantly higher during smile expression (4683±812 mm^2) than neutral face position (3544±596 mm^2, p<0.05). Significant differences was observed in the area values between males (5145±626 mm^2) and females (4223±728 mm^2, p<0.05) during smiling

Conclusion: In the present study, we showed that the area and asymmetry of the mouth region was increased while smiling. We think that such increments need to be considered in clinical observation. Our results can help the clinicians as reference data in clinical assessment of facial functional or morphological deterioration.

Keywords: 3D, asymmetry, RMS, smile

P-063

Henry Gray's Anatomy

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Objective: In this presentation, we examine the biography of Henry Gray, who has little information about him in the literature.

Methods: "Henry Gray", "Henry Vandyke Carter", "Gray's Anatomy", "anatomy", and "biography" keywords were searched in PubMed, MedLine and Google Scholar databases and suitable articles were examined.

Results: Henry Gray spent most of his career, which began in 1852, at St George's Hospital, London, as a surgeon and lecturer

in anatomy. In the same year, he published two main papers in the journal Philosophical Transactions. Subsequently, he published the unique "Henry Gray's Anatomy, Descriptive and Surgical" book, now known as Gray's Anatomy, is still used by medical students. However little is known about Gray's Anatomy's author Henry Gray and even his colleague Henry Vandyke Carter, who played a vital role in the dissections and illustrations that led to the production of the first volume in 1859. Gray's talent for human anatomy was accepted early and he was elected to the Royal Society when he was only 25. Unfortunately in 1861 when Henry Gray died of smallpox and at the age of 34, he was working on the second edition of his book. By the end of his life, he had also begun to work on tumors and began to write great reviews on the subject. Unluckily, the manuscript was never found.

Conclusion: Despite being the author of the most renowned and detailed anatomy textbook, information regarding Henry Gray was very scarce. More research on this historic figüre should be encouraged.

Keywords: anatomy, biography, Henry Gray, Vandyke Carter

P-064

Today and Byzantine period skulls orbital index measurements

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Objective: In the present study, orbital index (OI) values were obtained for two different periods by performing linear measurements for orbit in the contemporary and periodskulls. Methods: The study was conducted on a total of 49 skulls belonging to 22 contemporary and 22 Byzantine periods. Using the Image J program on two-dimensional digital images in the skulls, the height and width measurements of the orbit were performed on the right and left orbits of the skulls of two periods. OI = (orbital height / orbital width) × 100 was calculated. Data were analyzed by independent samples t-test, and IBM SPSS Statistics 20 software was used.

Results: There was no statistically significant difference between OI results in both periods. When the right and left orbits of the skulls of the present and Byzantine periods were compared, no significant difference was found. In the literature, the orbita is divided into three grades according to the OI value. Accordingly, in the present study, both period orbits were identified as the Megaseme (OI>89) orbita which is seen in the yellow race.

Conclusion: In this study, the morphometric data of the orbit were obtained by examining the skulls of two different periods living in the same geographical region. The orbit is an important anatomical formation that protects the eyeball and its attachments, and the morphological data obtained from the orbit are valuable of many disciplines.

Keywords: orbital index, orbital, Byzantine skulls

P-065

Accessory muscle in the neck the cadaver

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Objective: Akdeniz University Medicine Faculty Department of Anatomy Labarotory in 2018–2019 education term, we detected muscle variation in the neck of a 59 years old male cadaver used during routine anatomy dissection. We aim to determine accessory muscle in left lateral neck region.

Methods: We detected muscle variation in the neck of a 59 years old male cadaver used during routine anatomy dissection. When Firstly we disectioned skin and than platisma and than fascia finally, we determend new accesuar muscle in the left lateral neck region.

Results: Distance from venter of m. scalenius medius to insertio of the muscle is 6 cm, from incisura scapulae to insertio of the muscle is 1.5 cm. This muscle is innervated by 3 branches from n. thoracicus longus.

Conclusion: This muscle between m. scalenius medius and m. scalenius posterior is in the depth of the m. omohyoideus. The muscle has two heads. First head starts from proc. transversus of the C4-C5 vertebra in front of the m. scalenius medius. It has a long and thin tendon. Secund head starts from the costae prima and costae secunda. It has a wide venter and it joins with the venter of the first head.

Keywords: clinical anatomy, accessory muscle, lateral neck region

P-066

Medical student and trainee authored publications in anatomical education research studies

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Objective: Authors' roles in scientific articles are well studied but there are no studies on student and trainee (ST) authored anatomy education articles. Investigating the prevalence of ST authors in an anatomical education journal and analyzing annual trends were aimed.

Methods: Articles published in Anatomical Sciences Education (ASE) between January 2008 and December 2018 were investigated retrospectively. Article types stated in journal's guidelines were noted and ST authored articles were determined. Differences in article types, annual trends, and average citations for ST and non-ST authored articles were evaluated.

Results: Out of 678 published articles, 591 met inclusion criteria. Medical students, trainees, and both were authors in 93 (15.7%), 47 (8%), and 9 (1.5%) articles, respectively. Among 2169 authors, 82 (3.8%) were trainees and 177 (8.1%) were medical students. Article

types were not significantly different (p=0.56) for ST and non-ST authored articles. Similarly, annual trends for ST authored articles were not different (p=0.24) within study period. Although average citations to ST authored articles were higher (mean:17.9 vs. mean:13.8), the difference was insignificant (p=0.14).

Conclusion: Annual number of ST authored articles published in ASE has not changed since 2008. Conversely, there is an increasing trend for ST authored articles in medical education journals over the years. In order to encourage medical students and trainees to conduct anatomical education research, investigating possible causes for this lack in ASE articles may be necessary. However, high number of citations to ST authored articles may imply that students were directed to higher quality research.

Keywords: anatomy education, student author, trainee author, research article

P-067

Morphometric evaluation of anterior tibial artery

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Objective: Previous studies related with the anatomy of anterior tibial artery have focused mainly on morphology. Number of studies examining arterial morphometry is limited. Consequently, we aimed to examine the morphology and morphometry of the artery in detail.

Methods: Ethical approval was obtained from the Clinical Research Ethical Committee (number: 1144; date: 17.10.2017). The study was carried out on colored silicone injected 30 lower limbs at the Department of Anatomy, Istanbul School of Medicine. Morphological features of anterior tibial and popliteal arteries were assessed. Morphometrical evaluation included the tibiofibular trunk length, diameters of popliteal, anterior tibial, posterior tibial, fibular, and dorsalis pedis arteries and the vertical distances between anterior tibial artery origin to fibula head and tibial tuberosity.

Results: Popliteal artery branching morphology was determined as Type 1A in 80%, Type 1B in 10%, Type 1C in 3%, Type 2 in 3.3%, and Type 3 in 3.3% of all cases. Mean length of the tibiofibular trunk was 32.0±9.9 mm. Mean diameters of popliteal, anterior tibial, posterior tibial, fibular and dorsalis pedis arteries were 5.8±1 mm, 4.1±0.6 mm, 3.5±0.6 mm, 3.7±0.7 mm and 2.8±0.4 mm, respectively. Anterior tibial artery origin was 38±10.2 mm and 23.6±8 mm away from the fibula head and tibial tuberosity, respectively.

Conclusion: Knowledge regarding anterior tibial artery anatomy and popliteal artery branching variations are essential for endovascular interventions around the knee, infrapopliteal bypass procedures planned for peripheral arterial disease, and orthopedic operations involving tibial plateau. We believe that our results will help orthopedic and vascular surgeons.

Keywords: popliteal artery, anterior tibial artery, branching patterns of lower limb arteries, tibiofibular trunk

P-068

Tendon variations of fibularis brevis, fibularis tertius, extensor hallucis longus and extensor digitorum longus: case report

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Objective: The aim of this study was to present the tendon variations of peroneus brevis, fibularis tertius, extensor hallucis longus and extensor digitorum longus.

Methods: During routine dissection for anatomy education, tendon variations were found on both feet of a 76-year-old male cadaver. The surrounding tissues were cleaned and accessory tendons were made visible.

Results: We observed a bilateral accessory tendons arising from the tendon of fibularis brevis, passing through the canal within the fibularis tertius tendons and ending in the extensor hood of fifth finger. We also observed bilateral accessory tendons originating from the tendon of extensor hallucis longus and ending on the dorsomedial side of the first metacarpophalangeal joint capsule. A pair of accessory tendons arising from the tendon of extensor digitorum longus and ending on the corpus of the fifth metatarsal bone were detected on the right side (unilateral). Also, bilateral double tendon was observed at the insertion of fibularis tertius, on fifth metatarsal bone's base.

Conclusion: Tendons of extensor hallucis longus are used for correction of hallux varus deformity and tendon of fibularis brevis is used for tendon transfer in Achilles tendon ruptures. Fibularis tertius and extensor digitorum longus tendons are used to fix the tendon of the transferred tibialis posterior to correct low foot deformity. Therefore, knowing the variations of these muscles will be beneficial to physicians in order to perform correct surgical procedures and prevent complications.

Keywords: variation, foot, extensor muscles, accessory, cadaver

P-069

Unusual multiple variations of upper limb arteries: case report

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Objective: Variations in branching of the axillary artery and subsequent branches have been described in many studies.

Methods: During routine dissection at the Department of Anatomy, Istanbul School of Medicine, we observed multiple

variations in upper limb arteries of a 64-year old embalmed male cadaver. Ethical approval was obtained from the Clinical Research Ethics Committee of Istanbul School of Medicine (date: 16.05.2019, number: 680).

Results: The first part of the axillary artery did not give any branches. The second part, after giving superior thoracic and thoraco-acromial arteries divided into deep and superficial brachial arteries. Superficial brachial artery gave lateral thoracic artery and continued into the arm. After giving anterior circumflex humeral artery, the deep brachial artery trifurcated into subscapular, posterior circumflex humeral, and profunda brachii arteries.

Conclusion: Understanding upper limb arterial variations are important for performing safer clinical procedures. Our case would present a challenge during harvesting medial and lateral upper arm flaps, or donor vessels for coronary by-pass surgery and would require detailed planning.

Keywords: arterial variations of the upper limb, axillary artery, superficial brachial artery, deep brachial artery

P-070

Prominent petrotympanic fissure in a patient with temporomandibular dysfunction

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Objective: Petrotympanic fissure (PTF) is a fissure in the temporal bone that runs from the temporomandibular joint (TMJ) to the tympanic cavity. PTF morphology variation has been reported in the literature as a possible cause of an otologic complication during TMJ arthroscopy. The aim of this case report is to evaluate the radiological findings of the prominent PTF in a patient with temporomandibular dysfunction (TMD).

Methods: 33-year-old female patient was admitted to our clinic with the complaint of pain in mouth opening in the last one year. The patient had no aural symptoms. Extraoral examination revealed that the mandible was deviated to the right side and there was no noise in the joint when opening the mouth.

Results: On the right side of the patient's CBCT image; there were sclerotic changes in the condyle trabeculation, narrowing in the posterior joint space, and marked PTF extending from the mandibular fossa to the tympanic space. At the left side of the mandibular condyle was observed flattening. In the open-mouth position, left condyle head was located at the anterior (hypermobile), right condyle head was located at the posterior of the articular eminence (hipomobile).

Conclusion: The patient didn't have any aural symptoms. However, it has also been suggested in the literature that calcification of petrotpanic fissures may be related to the presence/absence of otalgia in TMD patients. CBCT imaging provides a clear indication of the morphological features of the fine structure of PTF and may contribute to the prevention of complications when performing arthroscopic surgery.

Keywords: petrotympanic fissure, cone-beam computed tomography, temporomandibular dysfunction

P-071

Effect of special study module of entrapment neuropathy on learning: experimental study

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Objective: Akdeniz University School of Medicine uses different educational methods that contribute to the development of independent learning skills of its students. One of the applications among student-centered teaching methods is special study modules. In this study, it is aimed to test the permanence of knowledge in the entrapment neuropathies module which is applied with an active learning method.

Methods: Module of entrapment neuropathy was performed with the second year students (n=42). Pre-test, post-test and permanency test were applied to the students to perform experimental design model with control group. The control group was selected from volunteer students (n=21). The differences between the all tests were evaluated. Test scores were compared and analyzes were performed in SPSS program.

Results: At the beginning of the study, it was determined that the level of knowledge about entrapment neuropathies was similar between two groups ($p=0.11$, $p>0.05$). It was observed that the post-test knowledge levels of the experimental students were higher than the control group ($p=0.01$, $p<0.05$). It was determined that post-test knowledge levels of experimental group students were higher than pre-tests ($p=0.01$,$p<0.05$).It was determined that the knowledge levels of experimental group students improved significantly and this development level was maintained even 3 months after the application.

Conclusion: At the end of the module, it was determined that levels of knowledge of the students increased significantly compared to the control group and this development preserved even after 3 months. We think that interactive studies with small groups have a positive effect on knowledge level.

Keywords: anatomy, entrapment neuropathy, special study module

P-072

Morphology of C2 vertebra lamina and its surgical importance

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Objective: When there is instability in the atlantoaxial axis, various techniques for fixation have been described in the literature. C2 translaminar screw fixation is a new method used recently and it is known that the risk of injury to vertebral vessels is less than other methods. The complete knowledge of C2 lamina morphology is essential for the avoidance of complications during screw fixation.

Methods: This study was carried out with 33 C2 vertebrae at the Akdeniz University School of Medicine, Department of Anatomy. The shortest transverse diameters of the lamina and the lamina lengths were measured using digital caliper. Spinolaminar angle was determined by ImageJ program.

Results: The shortest transverse diameters of laminae was 5.34 ±1.09 mm (min: 3.18; max: 7.42) on the right and 5.67±1.23 mm (min: 2.15; max: 8.33) on the left. The length of laminae was 27.75±2.52 mm (min: 23.18; max: 33.61) on the right and 27.29± 2.63 mm (min: 23.05; max: 34.82) on the right. Spinolaminar angle was 50.57±3.91° (min: 44.54; max: 57.92) on the right and 49.40±3.91° (min 41.72; max 57.40) on the left.

Conclusion: 3.5 mm screws used in translaminar screw fixation surgeries are suitable for 93.9% of C2 vertebrae included in study. Lamina lengths and spinolaminar angle were measured for guidance in surgeries. Further studies with larger sample sizes are recommended to emphasize the clinical significance of this study.

Keywords: C2 vertebra, morphology, translaminar screw fixation

P-073

Piriform aperture, choana, nasal bone and zygomatic bone morphometry and these clinical importance: a preliminary study

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Objective: We aimed to reveal clinical significance of morphometric measurements of piriform aperture width, piriform aperture length, nasal bone height, bizygomatic width, choana length and choana width.

Methods: 23 skulls of unknown age and sex characteristics belonging to Çukurova University were used. Broken and deformed bones were not used. Morphometric measurements were performed by digital caliper. Piriform aperture width, piriform aperture length, nasal bone height, bizygomatic width, choana length and choana width parameters were measured in millimeters. SPSS Statistics 23 (IBM SPSS, Turkey) was used for statistical analyze programs. Suitability of variables to normal distribution was evaluated by Shapiro Wilks test, Q-Q graphs and histograms. In addition to descriptive statistical methods, paired sample t-test was used in evaluation of quantitative data without normal distribution. Significance was evaluated at $p<0.05$.

Results: Piriform aperture width, piriform aperture length, nasal bone height, bizygomatic width, choana width and choana length were 23.68±2.40 mm, 33.68±3.78 mm, 50.66± 2.74 mm, 124.23±9.40 mm, 15.78±2.94 mm and 24.48±2 is 37 mm respectively. Comparison of right and left Choana width and length parameters showed no statistically significant difference ($p>0.05$).

Conclusion: Our study will create a morphometric normative data for diagnosis and treatment planning of the Turkish population and help to reveal racial differences with more examples. Furthermore, we believe that data obtained from reproduction of samples may reveal detailed results that may contribute to the clinical work in rhinoplasty, congenital genetic identification and forensic cases. We plan to continue our study by increasing data number.

Keywords: piriform aperture, choana, nasal bone, zygomatic bone, morphometry

P-074

Estimation of maximum length of humerus from its segments' lengths

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Objective: Long limb bones and fragmentary portions such as humerus are commonly used and examined in forensic and archaeological investigations. The aim of the present study was to estimate the maximum length of humerus from measurements of their segments' lengths in Turkish population.

Methods: Right and left humeri of 100 dry adults from unknown gender were included in the study. The measurement points were named as H0, H1, H2, H3, H4, H5, H6 and H7 according to their specific anatomical markings and a total of 28 different segments were obtained from 8 different landmarks. The length of each segment was compared to maximum length of humerus. Measurements were taken with using 0.1 mm precision digital vernier caliper. Independent t, Pearson correlation test, Linear and Multiple regression analysis were performed for statistical analysis with using SPSS 21.0 software.

Results: The differences of the measurements on right and left side of humeri were not statistically significant ($p>0.005$). The lengths of all humerus segments indicated a high correlation when compared with the maximum humerus length. The highest correlation coefficients were found in the segments H2-6 r=0.974, H2-5 r=0.958, H3-6 r=0.976, H3-5 r=0.964, H2-7

r=0.987. Only a weak correlation was found in the H2-3 r=0.173 segment.

Conclusion: This study indicated that, humerus length can be estimated from humerus segments' lengths by using linear and multiple regression equations.

Keywords: humerus length, segment, regression equation

P-075

Morphometric analysis of acetabulum

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Objective: Acetabulum is the cavity that the femoral head locates on the outer face of os coxae. The size, shape and depth of the acetabulum are variable. The morphometric data of the acetabulum are a prerequisite for a thorough understanding of hip joint mechanics. In addition, this information is essential in clinical practice; for diagnosis of hip dysplasia, acetabular reconstruction, hip joint prosthesis and etiopathogenesis of diseases such as primary osteoarthritis.

Methods: The study was carried out on 20 dry coxae in Harran University Medical School Department of Anatomy. The 11 parameters of the acetabulum were measured in the Image J program. Statistical analyzes were performed in SPSS 20.0.

Results: The depth of acetabulum was 32.55±2.25 mm, the width of incisura acetabuli was 22.53±3.78 mm, the vertical diameter of acetabulum was 51.28±7.27 mm and the horizontal diameter of acetabulum was 54.94±6.38 mm found. Facies lunata area/fossa acetabuli area 0.97±0.45; vertical diameter of acetabulum/horizontal diameter of acetabulum 0.93±0.71; the vertical diameter of the fossa acetabuli / horizontal diameter of the fossa acetabuli was calculated as 1.09±1.14.

Conclusion: The distribution and mean values of morphometric measurements of acetabulum generally differ between individuals and populations. Safe procedures and estimated distances should be considered during surgical procedures to prevent complications. In this regard, orthopedic surgeons should be aware of the diversity of components in the acetabulum size.

Keywords: acetabulum, facies lunata, fossa acetabuli

P-076

Evaluation of the auricula morphology and estimating the appropriate ear shape

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Objective: Auricula is one of the organs that determine the shape of the face and it's very important in terms of facial appearance. The aim of this study is to evaluate the morphology of the auricula and develop regression formulas for estimating the ear morphometry.

Methods: The study was carried out on three dimensional (3D) cranial region computed tomography (CT) images of 50 (24 male, 26 female) obtained from Uludağ University School of Medicine, Department of Radiology. 29 parameters on the images of the hard tissue, transparent and soft tissue windows were measured using Image J program. SPSS 22.0 was used for statistical analysis.

Results: It was determined that 14 of the 29 parameters showed statistically significant difference between men and women. Regression formulas were developed to estimate the morphometric values of the external ear from bone tissue measurements. [Example regression formulas; External ear height= 38.58 - (2.46 × distance between processus mastoideus - posterior edge of porus acusticus externus) - (0.23 × distance between processus mastoideus - inion) + (0.76 × distance between upper edge line of porus acusticus externus - processus mastoideus) + (1.45 × distance between nasion - subnasale)].

Conclusion: External ear structure is unique to individual, such as fingerprints. External ear morphometry plays an important role in clinical diagnosis of congenital anomalies and syndromes, but also provides information about age and sex determination in forensic events. On the other hand, ear anatomy should be known in terms of ergonomic design of hearing aids.

Keywords: external ear, ear morphometry, ear shape

P-077

Ramus communicans cum nervo ulnari between ulnar nerve and median nerve in palmar region

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Objective: In anatomy textbooks the distribution of the median and ulnar nerves have been described as 3.5 and 1.5 digits (respectively) in the palmar region of the hand. Berretini, in 1741, described a connection between ulnar and median nerves in the palmar region of the hand. This connection has been reported in the literature as "Berrettini anastomosis". The communication of the nerves in the palmar region of the hand was named as 'ramus communicans cum nervo ulnari' in Terminologia Anatomica. However, in major text books this communication and its detail, hasn't been mentioned.

Methods: During the routine dissection of the right hand belonging 64 year old male cadaver, a communication between ulnar nerve and median nerve was observed.

Results: The distribution of the branches of those nerves was traced. It was noticed that the ulnar nerve was distributed to 1.5 digits, the median nerve distributed 2.5 digits and the common branch raised from the ulnar and median nerves distributed 0.5 of 4th and 0.5 3rd digits, unilaterally. This connection was not found in the left hand.

Conclusion: The frequency of the nerve originated from ulnar and median nerves was declared between 4% and 94% in literature. In the study of Tagıl et al. they found 60% incidence of this connection in Turkish population. On the rely of the frequency of that variation, some authors have been claimed that this connection should have taken place as a normal pattern of the ulnar and median nerve distribution in palmar region of the hand.

Keywords: median nerve, ulnar nerve, palmar region, Berrettini anastomosis

P-078

Variations of flexor digitorum superficialis, the accesory head of flexor digitorum profundus and Gantzer muscle: case report

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Objective: Forearms and hands are among the most common injury sites. It is important to know the variational muscles and tendons in surgical interventions to this region. Therefore, we aimed to present a case of variations of flexor digitorum superficialis, bilateral accessory heads of flexor digitorum profundus and flexor pollicis longus (Gantzer muscle).

Methods: During the routine dissection performed for anatomy education, in a 76-year-old male cadaver, flexor digitorum superficialis variation, the accessory head of the flexor digitorum profundus and the Gantzer muscle were found on the anterior side of the forearm. Results: The accessory head of the flexor pollicis longus (Gantzer muscle) was detected bilaterally, originating from the lower face of the flexor digitorum superficialis, inserting to flexor pollicis longus. On the right side, flexor digitorum superficialis was found to have two heads and one of the heads was digastric. The accessory head of the flexor digitorum profundus, which joins the tendon of the flexor digitorum profundus that goes the third finger, were observed bilaterally. This accessory head originates from the lower face of the flexor digitorum superficialis on the left side and originates from the intermediate tendon of the digastric belly of the flexor digitorum superficialis on the right side.

Conclusion: The accessory muscles and tendons presented in this case may cause entrapment neuropathies by compressing the median nerve. In forearm surgery, physicians can confuse variational muscles and tendons with important anatomical formations (nerves, vessels, etc.). Knowledge of these variational conditions will prevent iatrogenic injuries.

Keywords: Gantzer muscle, forearm, median nerve, tendon, neuropathy

P-079

Biochemical and histological investigation of the effects of melatonin and vitamin C on damage to rat bulbus olfactory after chronic cellulose thinner inhalation

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Objective: To investigate the effects of melatonin and vitamin C on the damage caused by rat bulbus olfactorius due to chronic inhalation of cellulosic thinner.

Methods: Research ventilation was performed in special glass cages at constant temperature and pressure. In this study, 30 young male Wistar rats of the Rattus norvegicus species weighing approximately 400–450 g were used. The rats were divided into 3 groups. Groups; control group and thinner group and thinner, melatonin and vitamin C group. Ten rats were included in each group and were allowed to use thinner inhalation in air-caged glass cages for 1 hour at 1 hour twice daily for 6 weeks. At the end of the experiment, the animals were sacrificed and the tissue was analyzed.

Results: At the end of the experiment, histology of bulbus olfactorius tissue: Hematoxylin-Eosin staining; control rooms bulbus olfactorius layers, Thinner inhaling group and Thinner +Melatonin+Cvitamin comparative layers were not analyzed Biochemical examination; Catalase Enzyme Activity, Glutathione Peroxidase Enzyme Activity, Superoxide Dismutase Activity were determined.

Conclusion: After thinner inhalation, damage to the bulbus olfactorius occurred and biochemical and histological levels of melatonin and vitamin C were prevented.

Keywords: thinner, bulbus olfactorius, inhalation

P-080

An investigation on the anatomy journals indexed in SCI and SCI-E

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Objective: The aim of this study was to investigate the anatomy journals within the scope of Science Citation Index (SCI) developed by The Institute for Scientific Information (ISI) and Science Citation Index-Expanded.

Methods: In accordance with this purpose, anatomy journals within this scope were determined by the search engines on the websites where the indexes were represented. Reaching the journal websites, the impact factors, the organizations that these

journals are attached, goals and objectives, subject scope, origin and history, publication frequency, predominantly in which subdiscipline they published articles and the papers from Turkey in last 5 years were analyzed. The acquired data was recorded using Microsoft Excel. The data obtained and processed into excel program were arranged with tables and graphics.

Results: It was analyzed within the context of the short histories of anatomy journals, which pioneered publishing scientific papers and played an important role in scientific publishing history. Variations of the names of journals, SCI indexed journal distribution according to countries, preferences about the anatomy journals carried out the analysis of the examined anatomical sciences scientific publishing. It was determined that some important and pioneering anatomy journals had no contribition by means of articles from our country, but clusters formed around certain journals.

Conclusion: Since the publications and citations received in Science Citation Index and Science Citation Index journals constitute an important parameter in academic evaluation, reviews, promotion and academic awards in our country and in the world, we think that our study will contribute to the subject.

Keywords: anatomy journals, academic publishing, ISI

P-081

Morphological investigate of bulbus oculi on MR images

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Objective: The visceral organ that develops as a protrusion of the brain during the embryonic period consists of the bulcus oculi located in the bone pit called the orbita. Eye formation shows rapid morphological and functional improvements in weeks and months. These changes in the eye allow the physician to intervene in pathological conditions by distinguishing between normal and abnormal eyes. In this regard, certain development criteria should be revised. The aim of this study was to investigate the transverse and sagittal diameters of bulbus oculi according to age and gender. It is also to calculate the bulcus oculi volume from these diameter lengths.

Methods: In this study, MR images of Erciyes University School of Medicine Department of Radiology were used. MR images of 10 male, 10 female patients in each age range of 10–20, 20–30 and 30–40 were examined. Transverse and sagittal lengths of bulbus oculi were calculated on MR images. Volumes were calculated using ImageJ program.

Results: The right bulbus oculi transverse length was 23.04 mm and the left bulbus oculi transverse length was 23.74 mm in men aged 10–20 years. Bulbus oculi volumes in the same age group were measured as 6.30 cm^3 in the right 6.38 cm^3 in the right and 6.45 cm^3 in the left 6.33 cm in the females.

Conclusion: There was no significant difference in transverse, sagittal length and bulbus oculi volume according to age and gender.

Keywords: bulbus oculi, MR imaging, transverse diameter, sagittal diameter, volume

P-082

A rare variation of humerus: supracondylar process

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Objective: Supracondylar process is located between generally distal part and anteromedial side of humerus, 5–7 cm proksimal to medial epicondyl. Length of it changes between 2 to 20 mm and it can be seen unilateral or bilateral. Ligament of Struther is one of the associated structure with supracondylar spure. This ligament originates from supracondylar process and inserts to medial epicondyle. Some nerurovascular structures might go under, deep to the Ligament of Struther and be pressed by this ligament and give clinical results. The aim of this study was to identify the incidence of Supracondylar process and define morphometric properties about that.

Methods: Incidence of Supracondylar process was evaluated with 118 dry humerus. We measured the distance between Supracondylar process' proksimal and distal part to medial and lateral epicondyl, the length of Supracondylar process and it's distance to shaft of humerus.

Results: Supracondylar process was identified at one of all dry humerus. Distance between Supracondylar process' proksimal part to medial epicondyl and lateral epicondyl was 8.5 cm, 9 cm respecticely. Distance between Supracondylar process' distal part to medial epicondyl and lateral epicondyl was 6.5 cm, 7 cm respectively. Length of Supracondylar process was 17 mm. Distance between Supracondylar process and shaft of femur was 5 mm and supracondylar process was located medial side of shaft.

Conclusion: Patients associated with upper extremity neurovascular structures and their impingement symptoms, should be examined with simple radiography or in need take advance observation with computed tomography or magnetic resonance imagination for diagnosis and treatment of this variation.

Keywords: supracondylar process, humerus, ligament of Struther

P-083

Morphological examination of vertebral canal in lumbar region

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Objective: Low back pain is a common condition in our society and causes loss of labor. In clinical studies, it is seen that the cause of low back pain is caused by intervertebral disc pathologies around 39%. Especially lumbar disc hernia and degenerative disc disease are prominent in low back pain. The aim of this study was to determine the sagittal, transverse lengths and areas of the vertebral canal at different levels in the lumbar region.

Methods: In our study, MR images of the spine were examined and the upper edges of the vertebral bodies were based on level. Sagittal, transver lengths and areas of the vertebral canal were measured. The java-based program ImageJ was used for the measurements.

Results: In our study, MR images of 60 patients aged 10–50 years were examined. The mean sagittal length of the vertebral canal at L1 level was 16.03 mm and 9.4 mm at L5 level in women aged 10–20 years. Sagittal length of vertebral canal was measured as 16.22 mm at L1 level and 14.12 mm at L5 level in men aged 10–20 years. The mean sagittal length of the vertebral canal in men aged 40–50 years was 14.46 mm at L1 level and 10.52 mm at L5 level. In the same age range, L1 level was 16.08 mm and L5 level was 12.73 mm in women.

Conclusion: The results obtained in this study, we examined the length, width and area of the vertebral canal and how it changes according to age and gender.

Keywords: lumbar vertebra, vertebral canal, ImageJ

P-084

The effect of chitosan in the treatment of tendon

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Objective: Chitosan is one of the new treatment modalities used for tendon healing. It also plays an important role in the wound healing process, such as fibroblast activation, cytokine production and stimulation of collagen synthesis. In this study, we aimed to determine the effect of chitosan on tenascin-C and type III collagen expression by immunohistochemistry and the effect of electron microscopic microscopic changes on fibrous tissue densities and ultrastructural structure of organelles.

Methods: In our study, 48 male Wistar albino rats were used. Kessler method was applied to the tendons with transverse incision. The control and chitosan treatment groups were sacrificed in groups at 2,4 and 6. weeks. Tissues were examined under immunohistochemical and electron microscopic evaluations.

Results: Type 3 collagen and tenascin-C immunohistochemistry were performed on the tendon sections of all experimental groups. Tenascin-C and Type 3 collagen expressions were more frequent in the sacrified group at the end of the second week. In the transverse and longitudinal sections of the group treated with chitosan for 6 weeks after the injury, an increase in the number of tenocytes with euchromatic nucleus and granular endoplasmic reticulum spread was detected.

Conclusion: We found that chitosan used for tendon healing was effective in increasing tenascin-C and type III collagen expression after 6 weeks. The presence of thicker and smoother collagen fibers also promotes healing. Reflection of our findings to the clinic, we think that similar patient groups in both orthopedics and physical therapy and rehabilitation clinics can contribute positively to the treatment processes.

Keywords: Achilles tendon, chitosan, tenascin-C, Type III collagen

P-085

Examination of facial convexity and concavity values with reference to porus acusticus externus

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Objective: The correlation of bone measurements with soft tissue structures on radiological images makes reconstruction studies more meaningful. In this study, we aimed to evaluate the relationship between bone and soft tissue with reference to porus acusticus externus.

Methods: The study was carried out on three dimensional cranial region computed tomography (CT) images of 50 (24 male, 26 female) obtained from Uludağ University School of Medicine Department of Radiology. The distance between some anthropometric points was measured with Image J program. SPSS 22.0 was used for statistical analysis.

Results: It was determined that the majority of the parameters differed between male and female individuals. While high correlation was found between horizontal measurements, did not exist in vertical measurements. The highest regression value was determined that the distance between prosthion- labiale superior and regression formulas were created. For women; Labiale supe-

rior distance=6.997+1.065* prosthion distance, R2=0.981; For men; Labiale superior distance=11.17+0.992* prosthion distance R2= 0.967.

Conclusion: In our study, measurements were taken to determine the shape of the face by referencing porus acusticus externus on the temporal bone. There is no study in the literature using porus acusticus externus, we believe that the formulas produced in line with the results will contribute greatly to the studies aimed at determining the face shape.

Keywords: porus acusticus externus, face, forensic medicine, facial reconstruction

P-086

Clinical importance of the relation between the parietal foramen variations with sagittal sutura

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Objective: Parietal foramen is an important anatomical structure located on both sides of the sagittal sutura through which parietal emissary vein passes. We aimed to determine the parietal foramen' prevalence, number, and localization compared to sagittal sutura.

Methods: Thirty skulls of unknown age and sex characteristics belonging to Çukurova University were used. Morphometric measurements were performed by digital caliper. Presence, number, localization and distance from sagittal sutura of parietal foramen were evaluated. SPSS Statistics 22 for statistical analysis (SPSS IBM, Turkey) programs was utilized in evaluation. Significance was evaluated at $p<0.05$.

Results: 1, 2 and 3 parietal foraminawere found in 58.8%, 35.3% and 5.9% of 58 skulls with parietal foramen, respectively. Furthermore, unilateral and bilateral were observed in 58.8% and 41.2%. Of these skulls with parietal foramen respectively. 50% and 41.2% of the unilateral parietal foramen were found on the right and left side. There was no statistically significant difference between the unilateral and bilateral parietal foramina regarding their distance from sagittal sutura ($p>0.05$). There was no statistically significant difference in distance between bilateral parietal foramina and sagittal sutura as regards being the right and left ($p>0.05$).

Conclusion: Knowing parietal foramen location, number and relationship with sagittal sutura helps to understand the relationship between dural venous sinuses and scalp veins. Knowledge of variations may be helpful in detecting congenital anomalies. We think that results of our study will constitute an important morphometric data for anatomists and clinicians.

Keywords: parietal foramen, sagittal sutura, morphometry, variation

P-087

The terms called "Turk" in the literature

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Objective: A common scientific language and terminology is necessary to follow developments and progress in science. As the same language and terms are used, difficulties such as country and language differences disappear and scientific studies become easier. Accordingly, the terms used in the literature are accepted and adopted worldwide. The aim of this study is to determine the terms in which the words that refer to the word Turk such as Turcica or Turcicum entered in the literature.

Methods: For determine these terms, the words Turcica and Turcicum were searched in Google Scholar and PubMed online databases. Many terms belonging to different sciences such as medical, botany and entomology were found.

Results: In the literature, 28 term as aethionema turcicum, bogidiella turcica, borrelia turcica, botanophila turcica, centaurea turcica, cobitis turcica, colchicum turcicum, createagus turcica, deroceras turcicum, drechslera turcica, eurythoe turcica, exserohilum turcicum, heart turcica, hersiliola turcica, laffitteina turcica, linaria turcica, loftusia turcica, minuartia turcica, muscari turcicum, onopordum turcicum, paonia turcica, polygala turcica, porphyria turcica, prangos turcica, sella turcica, setosphaeria turcica, thermopsis turcica and valerianella were found.

Conclusion: Some of the terms found in the literature are named because of historical and mythological figures, similarities or places, while others take the surnames or the names of the people who first found or identified the term. The words Turcica and Turcicum are one of them. Knowing these terms, which are referred to the word Turk within its name, is also important in terms of understanding the contributions of Turks to science.

Keywords: turcica, turcicum, term

P-088

Disease of the future: Alzheimer's and nervous system anatomical structures

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Objective: Alzheimer Disease (AD) is the most common type of dementia. It is characterized with deficits in memory, anguage, problem solving and other cognitive functions. The number of

people living with dementia,most of them are related to Alzheimer's disease,worldwide is estimated at 35.6 million in 2010 and set to almost double by every twenty years. Neuropsychologic assessment is important to evaluate cognitive impairments with age as well as disease only.We aim to investigate Alzheimer's disease,which increase every year by double, how to affect anatomical structures which are in the nervous system.

Methods: We searched Alzheimer's disease how to influence anatomical structures and organs of nervous system by scanning literature review which in the recent five years.

Results: Decreased glucose metabolism in the initial part of precuneus dexter, which is part of the lobus parietal dexter on the medial surface of hemispherium cerebri, is thought to be a symptom in the early diagnosis of memory impairment and memory loss in AD. It is found that declines in activation of the temporal and prefrontal lobes: left temporal pole, eft triangular part of the inferior frontal gyrus, bilateral hippocampus; and occipital (and anterior limbic) lobe(s): right lingual gyrus (visual cortex), left middle occipital gyrus with related to Alzheimer's disease memory impairment. Alzheimer patients have reduced gray matter volumes of structures in the anterior medial temporal lobe and the results suggest that structural change in the left hippocampus is.

Conclusion: It is identified that recent researches concentrate more in temporal lobe, frontal lobe and hippocampus of nervous system in Alzheimer's disease.

Keywords: anatomy, Alzheimer's Disease, hippocampus, lobus temporalis, lobus frontalis, neuropsychiatric evaluation

P-089

Anatomical structures of nervous system associated with depression

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Objective: According to WHO research; more than 300 million people suffer from depression in the world. Especially when long-lasting and with moderate or severe intensity,depression may become a serious health condition.We aim to investigate depression,which is the one of the most important mental disorder, how to affect anatomical structures which are in the nervous system.

Methods: We searched depression how to influence anatomical structures of nervous system or organs by scanning literature review which in the recent years.

Results: Corpus amygdaloideum, Hippocampus, ventromedial and mediodorsalis sections of Cortex prefrontale, subgenual, rostral / pregenual and dorsal sections of Cortex cingulate anterior plays act in emotional regulation. Hippocampus volume, cortex thickness in the rostral part of the gyrus frontalis medialis, orbitofrontal and dosolateral sections of the cortex prefrontale, Gyrus temporalis inferior, functional connections of the cortical structures, anterior and posterior of the cortex cingulate anterior, Corpus amygdaloideum and in subcortical brain areas, such as the hippocampus and Striatum ventral, changes are seen in patients with Major Depressive Disorder. In addition, Cortex prefrontale areas receiving data from areas such as Corpus amygdaloideum and Nucleus accumbens and structural changes in Hippocampus are associated with a lack of neuroplasticity. Functional connectivity analysis shows a significant increase in functional connectivity between the subgenual portion of the cortex cingulate anterior, the Corpus amygdaloideum dexter, and the sinister and Hippocampus in patients with Major Depressive.

Conclusion: It is found that scientific researches continue to investigate and there is no absolutely clear knowledge about depression how to affect anatomical structures of nervous system.

Keywords: anatomy, depression, nervous system, neuropsychiatry

P-090

Important landmarks in fossa cranii media surgery

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Objective: Surgical operations regarding to middle cranial fossa are challenging and reliable anatomical landmarks are required. There is a lack of knowledge on anatomical variations in this region. The aim of this study was to determine the safe surgical reference landmarks for middle cranial fossa surgery.

Methods: In this study, 23 adult dry skulls were evaluated: the age and sex of the specimens were unknown. All measurements were taken from norma basalis by using digital calipers accurate to 0.01 mm. In right and left sides; the distances between the external acoustic meatus (EAM) and the following anatomical landmarks were measured: end point of styloidprocess (SP); midpoint of pterygo maxillary fissure (PMF); midpoint of foramen ovale (FO); midpoint of foramen spinosum (FS); midpoint of carotid canal (CC); articular tubercle (AT); anterior border of squamous suture (ASS); posterior border of squamous suture (PSS) and superior border of squamous suture (SSS).

Results: The distances of the external acoustic meatus to the anatomical structures on the right and left sides were: EAM-SP; 24.24±3.19 mm, 23.16±3.17 mm; EAM-PMF; 46.56±4.51 mm, 46.25±3.96 mm; EAM-FO; 27.57±2.87 mm, 28.70±2.85 mm; EAM-FS; 22.53±3.19 mm, 22.72±3.47 mm; EAM-CC; 17.35±3.56 mm, 17.19±3.39 mm; EAM-AT; 19.31±3.79 mm, 18.95±3.42 mm; EAM-ASS; 43.14±4.80 mm, 46.82±4.61 mm; EAM-SSA; 36.15±4.24 mm, 35.39±4.25 mm ve EAM-SSS; 49.17±4.74 mm, 48.83±3.34 mm respectively.

Conclusion: We think that the findings obtained from this study related to external acoustic meatus can be an important reference for surgical procedures in middle cranial fossa.

Keywords: external acoustic meatus, middle cranial fossa, middle cranial fossa surgery, surgical anatomy.

P-091

Morphometric evaluation of the face: proximity to the golden ratio

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Objective: The face is the most important region affecting the physical appearance of a person. The golden ratio (1,618) which is accepted as the threshold value of beauty, is used to evaluate the aesthetic appearance of the face. The aim of the study was to evaluate the proximity to gold ratio by making linear measurements on the faces of males and females in different age groups.

Methods: In this study, 24 adults (12 females, 12 males) over the age of 30 and 16 individuals (8 females, 8 males) representing the 18–24 age group were included. A total of 33 linear distance measurements were performed on 2D digital photograph images of 40 individuals. Measurements were performed with Image J program. SPSS 22.0 was used for statistical analysis.

Results: All measurements were found to be different in male and female (p=0.001). The rates between chilion-pronasale and chilion-pogonion (chi-prn /chi-pg) were found to be close to the gold ratio in all groups except adult males. In addition, the ratio between the right-left medial canthus distance and the right-left chilion distance (en-en/chi-chi) was found to be similar to the golden ratio in male subjects aged 18–24 years (p=0.053), but not in female.

Conclusion: Facial proportion assessments in relation to the golden proportion showed that statistically significant difference was observed between gender groups. In addiction our study revealed that there were differences between males and females in different ages for both groups and that the face was generally symmetrical.

Keywords: face, morphometry, linear regression, golden ratio

P-092

Branch variations of renal artery: case report

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Objective: Renal arteries are, which is involved in feeding the kidneys of on the right and left, located visceral branches of the abdominal aorta. They arising from the lumbar 1–2 level from the lateral of the aorta. The types and incidence of renal artery variations are widely reported in both anatomical and radiological examinations. The most common anomaly is wide range of vessels. In the literature and classical books, described are extra, aberrant, accessory, supernumerary and supplementary

Methods: Artery renalis branch variation was found in a 53-year-old male patient in the archives of the department of radiology of Meram Medical Faculty of Necmettin Erbakan University.

Results: An accessory renal artery was observed on the left side of the L2 level of the abdominal aorta. On the right side, there was only one renal artery. The diameters of the branches on the left side were 0.48 cm and 0.39 cm, respectively. The root diameter of the right arterial renal artery was measured as 0.49 cm. Arteria renalis branch variations have been reported in the literature as 19–40%. The incidence of unilateral accessory renal artery cases is reported as 2.3%–8.6%.

Conclusion: For clinicians and radiologists who apply invasive techniques, the importance of knowing branch variations of the arteria renalis, which is importance increasing day by day. Especially in kidney transplantation, it is very impoplanning stage of the operation in order to prevent the complications that may occur during the operation and increase the success of transplantation.

Keywords: anatomy, arteria renalis, branch variation

P-093

Anatomy and morphometry of the hypoglossal canal

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Objective: The aim of this study is to determine the localization and the shape of hypoglossal canal (HC) on skulls and to find out the distances between this area and anatomic landmarks.

Methods: This study was performed on the craniums of 50 (100 sides) adult West Anatolian People. Eight morphometric measurements of the distances between parts were taken of the skulls using a Vernier caliper accurate 0.01 mm. The results were evaluated statistically with SPSS 15.0.

Results: HC was found as a separated canal on 23 sides. The lenght of the HC, the width of the occipital condyl, the distance between of the entrance of the HC and crista occipitalis externa, the distance between of the anterior point of the right and the left occipital condyl, the distance between of the posterior point of the right and the left occipital condyl and the thickness of the occipital condyl were found on the right and the left sides 9.28 mm and 8.77 mm; 11.76 mm, and 12.12 mm;

23.28 mm and 22.89 mm; 28.81 mm and 29.30 mm; 19.03 mm; 33.82 mm; 9.30 mm, 8.90 mm, respectively.

Conclusion: The localization of HC and the distances between this canal and anatomic landmarks may be useful for screw replacement during the operation of the transcondylar and the supracondylar approach of the neurosurgery.

Keywords: hypoglossal canal, transcondylar approach, morphometry

P-094

Investigation of the relationship between the upper extremity composition and functions in individuals: with different hand preference

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Objective: Side preference demonstrates asymmetric use of the limbs. Hand is the most widely examined structure in the evaluation of side preference. The aim of this study is to evaluate hand and finger grip strength and segmental body composition of upper extremity in order to reveal the functional and morphological differences between dominant and non-dominant sides in individuals with different hand preferences.

Methods: Hand preferences of 172 (68 left-handed, 104 right-handed) individuals were determined with Edinburgh Handedness Inventory. Hand grip strength (JamarHydraulic HandDynamometer) and finger grip strength (BaselinePinch Meter) of each individual were measured three times for each hand. Morphological parameters were determined by bioelectrical impedance analysis (TANITA-BC418). For comparison of the independent groups, independent samples t test and Mann-Whitney U test were used for the normally and non-normally distributed variables, respectively. Spearman's correlation analysis was used for the correlation between continuous variables.

Results: Hand grip strength, key pinch and the tip pinch were found to decline as the fat percentage in the arm rises and vice versa. There was a significant difference between the dominant and nondominant hands of the right-hander in terms of tip pinch strength ($p<0.05$), whereas there were no significant differences between the remaining structural and functional parameters ($p>0.05$). There were no significant differences between dominant and nondominant hands in terms of morphological and functional parameters ($p>0.05$) of left-handers.

Conclusion: It is predicted that results presented will contribute to the evaluation of morphological and functional differences of right and left sides in relation to side preference.

Keywords: body composition, hand grip, key pinch, tip pinch, upper extremity

P-095

Duodenum histometry in experimental diabetes-induced rats and effects of melatonin

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Objective: Hyperglycemia causes damage to all tissues, organs due to production of excess reactive oxygen species. Whole gastrointestinal tract is affected by diabetes, from the oral cavity to the esophagus, from the stomach to the small-large intestines. We aimed to investigate powerful antioxidant melatonin effects on the duodenum.

Methods: 16 weeks old male Wistar rats were used. Each group consists of eight animal; control group (K), diabetes-group (D), melatonin group (M) and melatonin-treated-diabetes-group (DM). Diabetes induce 60 mg/kg/i.p. streptozotocin injection in D and DM. Subsequently, 10mg/kg/i.p./day melatonin was administered to DM and M for 6 weeks. Weight change, blood glucose levels were recorded weekly. At the end of work, duodenum samples were embedded in paraffin and 5 µm sections were stained with hematoxylin&eosin. The length-width of the villi, crypt depth, duodenum, artery-vein diameters, tunica muscularis thickness were measured on 10 sections with AnalySIS LS Starter program. Differences between groups in parametric data were evaluated with OneWay ANOVA, non-parametric data with Kruskal-Wallis test.

Results: Blood glucose levels were higher in the D and DM, whereas the change in body weight was low ($p<0.05$). Villus length, tunica muscularis thickness and goblet cell count were lower in D ($p<0.05$). Crypta depth was higher in D than M. Arterial diameter was not different between the groups, whereas the diameter of the vein was higher in the D and DM, and the diameter of the duodenum was higher in the D ($p<0.05$).
Conclusion: Melatonin have positive effects on duodenal morphology, its combination with blood glucose homeostasis agents in diabetics may be effective against oxidative stress.

Keywords: diabetes mellitus, duodenum histometry, melatonin

P-096

Assessment of the confusion in determining the level of conus medullaris

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Objective: Level of conus medullaris was determined according to relationship between the vertebral body and intervertebral disc in the literature. How of the relationship between the anatomic curvature of vertebral column in the lumbar region and level of the conus medullaris is not clearly defined in the most articles.

So, if the same case is examined by different study groups, we predict that conus medullaris may be reported at different levels. The aim of this study was to evaluate the possibility of detecting different levels of conus medullaris due to lack of explicit expression of the method.

Methods: A detailed literature review was made on articles that determine the level of conus medullaris. In these articles, methods of evaluating the relationship between conus medullaris and spine were examined.

Results: The vertebral body is frequently divided into three equal parts and the level of conus medullaris has been evaluated according to the vertebrae and intervertebral disc at the examined by the in determining of level of the conus medullaris relative to the corpus vertebrae and intervertebral disc. It is not clear whether the line drawn is determined according to the transverse plane or the lower and upper faces of the vertebral body. Since these two lines will not be parallel in normal lordosis, it is thought that similar cases may be detected at different levels between studies.

Conclusion: We proposed the method is clearly defined because of arcuate of vertebral body's upper and lower faces and transvers axis is not always parallel to these faces.

Keywords: conus medullaris, vertebral body, magnetic resonance imaging

P-097

Evaluation of lumbar intervertebral discs by magnetic resonance imaging: a retrospective study

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Objective: Discus intervertebralis are the formations extending from the axis to the os sacrum and located between the corpus vertebralis. Their shape is similar to the corpus of the vertebrae. They consist of anulus fibrosus nucleus pulposus. Discus intervertebralis away from normal anatomic structure causes low back and back pain. Therefore, it is a very important region for orthopedic specialists. The aim of this study is to perform morphometric evaluation of lumbar intervertebral discs using magnetic resonance imaging.

Methods: In this study, 60 radiological images of Yüreğir State Hospital Radiology Department were used. Images were obtained by magnetic resonance imaging technique. Anterior intervertebral disc height, medial intervertebral disc height, posterior intervertebral disc height and anterior-posterior intervertebral disc length of lumbar intervertebral discs were measured. Mean±standard deviation values were calculated.

Results: The mean±standard deviation values of intervertebral discs were L1/L2, L2/L3, L3/L4, L4/L5 and L5/S1 respectively; Anterior intervertebral disc height: 1.04±0.15 cm, 1.21±0.17 cm, 1.4±0.19 cm, 1.43±0.22 cm, 1.48±0.28 cm, Medial intervertebral disc height: 1.11±0.17 cm, 1.27±0.18 cm, 1.43±0.20 cm, 1.15± 0.21 cm, 1.12±0.27 cm, Posterior intervertebral disc height: 0.75± 0.14 cm, 0.89±0.14 cm, 0.83±0.16 cm, 0.94±0.16 cm, 0.74±0.17 cm, Anterior-posterior intervertebral disc length: 3.58±0.32 cm, 3.67±0.32 cm, 3.65±0.29 cm, 3.85±0.32 cm, 3.51±0.34 cm were found in the study.

Conclusion: Knowing the intervertebral disc distances will help in the diagnosis of the patients and we think that this will be beneficial for the orthopedists in terms of surgery. In addition, the results of the study will contribute to the database of Turkish society.

Keywords: lumbar intervertebral disc, magnetic resonance imaging, measurement, morphometry

P-098

Anthropometric evaluation of MS patients

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Objective: Multiple Sclerosis (MS) is a chronic, inflammatory, demyelinating disease of the central nervous system (CNS). The pathological process and its consequences in MS cause progressive disability. The anthropometric parameters such as height, weight, waist and hip circumference and their ratio, waist /height ratio, extremity measurements that can be used to morphologically evaluate the body. These measurements are also important in morbidity and mortality of individuals. In many studies, anthropometric measurements of different patient groups but no previous studies have been found in MS patients. Therefore, we aimed to compare the anthropometric measurements of MS and control groups.

Methods: In the study, anthropometric measurements were performed in 40 MS patients who have EDSS score less than 5, aged between 18–55 years and 41 controls with similar demographic and physical characteristics. Socio-demographic parameters and age, height, weight, body mass index of the patient were recorded.

Results: The mean chest circumference of MS patients was higher than the mean chest circumference of the control group ($p<0.05$). The anthropometric measurement values of the control group and patients with an EDSS score of 2.5 or less were significantly higher than those of MS patients with an EDSS score of 2.5 or higher ($p<0.05$).

Conclusion: We deduce that the difference between the chest circumference of the MS and the control group may be due to changes in the posture and pulmonary functions of the MS patients. In addition to the medical treatment of MS patients, complementary therapies to preserve body composition should not be ignored.

Keywords: multiple sclerosis, morphology, anthropometry

P-099

Three-dimensional evaluation of facial expressions

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Objective: The facial movements are very complex. Therefore, there is a need for more sophisticated methods to evaluate pre- and post-treatment changes in these movements caused by trauma and stroke. The aim of our study is to develop a three-dimensional, dynamic, objective and reliable method for the evaluation of facial movements.

Methods: A total of 20 healthy subjects (10 males and 10 females) were included in the study. The faces of the subjects were recorded by means of optoelectronic cameras during the expressions of surprise, angry and sad. Mean displacement values of the face were calculated.

Results: The mean displacement values were 2±1.6 mm/sec, 2.3±2.1 mm/sec, 2.5±1.8 mm/sec, during surprise, angry and sad expressions, respectively.

Conclusion: When the results of our study are examined, it is clear that each emotional expression has its own dynamic parameters. The results of our study showed that it is possible to collect data successfully from the face area by our methodology.

Keywords: facial expression, 3D motion analysis, facial biomechanics

P-100

Double renal artery: case report

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Objective: Renal artery is a pair of arteries located on the right and left, located at level 1–2 of lumbar vertebrae. Although it basically goes to each kidney an renal artery, branch variations of renal artery are quite common. It is important to know the variations of renal artery in terms of kidney transplantation, renal artery embolization, vascular reconstruction, urological and vascular operations.

Methods: Necmettin Erbakan University Meram Medical Faculty Department of Radiology in the archive of the file scan was found a 43 year-old male patient who has arteria renalis branch variation.

Results: In addition to the renal artery that is located on normal level, it was observed a pair of renal arteries located on right and left at the level of L1–2 discus intervertabralis of aorta abdominalis. Both of these arteries originate from the upper levels of the main renal artery. Root diameters of the main renal arteries originating from the abdominal aorta were measured 0.51 cm. The root diameter of the right and left accessory renal artery was 0.38 cm and 0.36 cm, respectively. There are renal artery variations in the literature in the range of 19–40%. Bilateral renal artery cases are defined in the range of 2.6–15%.

Conclusion: Knowing the branch variations of renal artery is significant and the importance is increasing day by day for interventional and diagnostic radiologists. In addition, it is especially important for surgeons in terms of preventing complications that may occur during the operation in the area concerned.

Keywords: anatomy, renal artery, branch variation

P-101

Absence of incisura scapulae: case report

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Objective: The scapula (shoulder blade) is a triangular flat bone that lies on the posterolateral aspect of the thorax, overlying the 2nd to 7th ribs. The thinnest and shortest edge of the margo superior. Suprascapular notch located on the superior border of the scapula and just medial to the base of the coracoid process. This notch is covered by superior transverse scapular ligament and is turned into a foramen. About of suprascapular notch is bands, calcification, and partial or complete ossification include variations.

Methods: Necmettin Erbakan University Meram Medical Faculty Department of Radiology Archives of the file scanning suprascapular notch absence was founda patient whos is 71 year old.

Results: In the literature, suprascapular notch is generally defined as divided into 6 types. These types are type 1: absence of incisura scapula, type 2: wide V type, type 3: symmetrical U type, type 4: narrow V type, type 5: partial ossification, type 6: complete ossification. Our case conforms to type 1 of these typologies. The incidence of incisura scapula absence in the literature is between 8% and 22%.

Conclusion: In this study, it was reported that suprascapular notch absence is one of the risk factors to nerve compression of nervus suprascapularis. This anatomical information can be very useful for better understanding of clinical and surgical applications. It may help to prevent iatrogenic suprascapular nerve injury in arthroscopic procedures.

Keywords: absence, suprascapular notch, variation, typing

P-102

An investigation on the anatomical journals not indexed in SCI and SCI-E

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Objective: Journals indexed in Scopus, Index Copernicus and Index Medicus were aimed to be examined by means of the journal content, publishing frequency, the journal of the origins of the magazine distribution and concerned by country Turkey aimed to identify issues such as the relevance of addressing the publication.

Methods: Scopus, Index Copernicus and Index Medicus were selected from the indexes other than Science Citation Index and Science Citation Index-Expanded. The anatomy journals indexed by the search engines on the web sites of these indexes were determined for examination. The web pages of the anatomy journals were collected and the data about the journals were collected and recorded with the help of Microsoft Office Excel program. The data are summarized in graphs and tables.

Results: Scopus, Index Copernicus and indexed in Index Medicus index anatomy under the spotlight last 5 years in Turkey based on publications of the journals, a pattern on the interest of scientific articles in the field were studied anatomy to be determined.

Conclusion: We think that our study will contribute to the literature as the publications in the anatomy journals covered by Scopus, Index Copernicus and Index Medicus constitute a certain parameter in academic evaluation, appointment, promotion and academic rewarding.

Keywords: scopus, index medicus, Index Copernicus

P-103

Ossification of the superior transverse scapular ligament

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Objective: Suprascapular notch, is located on the inner side of the root of coracoid process in margo superior of scapula. This notch is closed from the top by superior transverse scapular ligament and turned into a hole. Under the this ligament suprascapular nerve, from above it suprascapular artery and vein are pass together. One of the reason of suprascapular entrapment neuropathy is suprascapular nerve is press when it pass from suprascapular notch. Since the anatomical features of suprascapular notch may be one of the preparatory factors for suprascapular entrapment neuropathy, it is important for understanding the etiology of the patients presenting to the clinic with shoulder and back pain and for surgical invertions to be performed.

Methods: The ossification of the superior transverse scapular ligament was found 63 years old male patient in the archives of the department of radiology of Meram Medical Faculty of Necmettin Erbakan University.

Results: Suprascapular notch is divided into 6 types in the literature. These types are type 1: absence of suprascapular notch, type 2: wide V type, type 3: symmetrical U type, type 4: narrow V type, type 5: partial ossification, type 6: complete ossification. In our case, this type of type 6 is compatible with. The incidence of ossification of the superior transverse scapular ligament has been described in the litarature in the range of %1,93-%10.

Conclusion: Looking at the current case report, we can say knowing ossification of the superior transverse scapular ligament will help clinicians in the diagnosis and treatment of suprascapular nerve compression.

Keywords: suprascapular notch, variation, ossification

P-104

Variations of inferior phrenic artery: case report

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Objective: Inferior phrenic arteries are a pair of small left and right arteries feeding the diaphragma and the origin of which is highly variable. These arteries arise from just above the celiac trunk and separate from the anterior surface of the abdominal aorta. These arteries extend diagonally to the sides of the diaphragm by crossing the cruses of the diaphragm. Near the posterior part of the central tendon of diaphragm, the artery of both sides is divided into medial and lateral branches. In addition, the left artery gives spleen and the right artery gives small branches to the liver.

Methods: Variation of inferior phrenic artery was found in the file scan in the archives of the Department of Radiology of the Medical Faculty of Necmettin Erbakan University.

Results: Inferior phrenic arteries, which normally separates from the anterior aspect of the abdominal aorta, left and right, emerged separately from truncus coeliacus in our case. Right inferior phrenic artery was measured as 0.53 cm and left inferior phrenic artery was measured as 0.58 cm. Separation of inferior phrenic arteries from the celiac trunk has been reported in the literature between 5.62% and 37%.

Conclusion: Knowledge of inferior phrenic artery outlet and branch variations is very important for clinicians interested in regional surgery. In order to avoid complications, clinicians need to consider these variations. In addition, we think that our study will contribute to the literature.

Keywords: inferior phrenic artery, variation, computed tomography

P-105

Branch variations of coeliac trunk

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Objective: Coeliac trunk is a short and thick root that emerges from the anterior face of abdominal aorta just below aortic hiatus on the twelfth thoracic vertebra level. The term "Tripus Coeliacus" is used because its three branches are left gastric artery, splenic artery, and common hepatic artery. Inferior phrenic artery is a pair of small left and right arteries that feed to diaphragm and show multiple variations in origin. Just above coeliac trunk, they exit separately from the front face of abdominal aorta. These arteries cross the crus's of diaphragm, extending on the lower face to the sides.

Methods: Necmettin Erbakan University Meram Medical Faculty Department of Radiology in the archive of the file scan was found a 42 year-old male patient who has coeliac trunk variation.

Results: Normally, the left-handed ınferior phrenic artery's from the front of abdominal aorta were separated from the coeliac trunk as a single root. It has measured the common root diameter of the ınferior phrenic artery was 1.2 cm, the right ınferior phrenic artery's were dextra 0.74 cm, and the left ınferior phrenic artery was 0.79 cm. Therefore, the normal branching pattern of coeliac trunk was altered. This branching form, which is the origin of ınferior phrenic artery 's, is reported as 2.41%–20% in the literature.

Conclusion: The knowledge of coeliac trunk and branch variations is very important for regional surgeons. Clinicians should consider these variations in order to prevent complications that may occur.

Keywords: coeliac trunk, Inferior phrenic artery, Variation

P-106

Bilateral high origin of the radial artery: case report

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Objective: The aim of our study is to present the anatomic variation of the high-originated radial artery.

Methods: During routine dissection in our laboratory, the high origins of the radial arteries were observed in the arms of a 45 years old male cadaver preserved in formaldehyde solution, bilaterally.

Results: The radial arteries arose from the brachial arteries at the level of proximal 1/3 of the humeri and were on the medial side of the median nerves at the level of the proximal and the middle parts of the the humeri. Radial arteries crossed superficially to median nerves at the level of the distal 1/3 of the arms and located laterally. The radial arteries continued in the usual course in the forearms.

Conclusion: We consider that the knowledge of this variation might be beneficial in diagnostic purposes, cardiac catheterization, arterial grafting and angiographic procedures for radiologists, surgeons and other clinicians.

Keywords: brachial artery, anatomic variation, radial artery, dissection

P-107

Common trunk of the dorsal scapular artery and the suprascapular artery originated from the subclavian artery: case report

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Objective: In the anatomy textbooks, it is stated that the suprascapular artery is originated from the thyrocervical trunk. The deep branch of the transvers cervical artery is named as the dorsal scapular artery in case it is originated from the subclavian artery. The aim of this study is to present a rare case of the both suprascapulary artery and dorsal scapular artery originated from subclavian artery as a common trunk.

Methods: In the routine dissection of a 64-year-old male cadaver, when the branches of the thyrocervical trunk were examined.

Results: It was noticed that the suprascapular artery and the deep branch of the cervical transverse artery (dorsal scapular artery) were absent. As the result of the examination, it was found that these two arteries were originated from the subclavian artery as a common trunk. The arteries originated as a single trunk were separated in the dorsal region of the scapula and the dorsal scapular artery was directed towards the medial side of the scapula and the suprascapular artery was directed towards the scapular notch.

Conclusion: According to the study of Varenne et al., the dorsal scapular artery was originated from subclavian artery with the incidence of 71%. According to the study of Pyrgakis et al., the suprascapular artery was separated from subclavian artery by 1.6% incidence. However, it is not mentioned that those two arteries are originated from the subclavian artery as a com-

mon trunk. We believe that this rare variation will be beneficial for anatomists, orthopedists and surgeons.

Keywords: subclavian artery, dorsal scapular artery, subscapular artery

P-108

Possible effects of caffeic acid phenethyl ester and thymoquinone against toluene brain injury

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Objective: The aim of this study was to investigate the protective effects of caffeic_acid phenethyl ester (CAPE) and thymoquinone(TQ) against brain tissue damage caused by toluene injection.

Methods: Seven groups of male Wistar albino rats were formed. Group I was given 0.1 ml/10g/day corn oil intraperitoneally. Group II was given the same dose of corn oil and 2 ml/kg/day of 10% ethanol. Group III was given TQ at a dose of 20 mg/kg/day in corn oil given in the same dose, and Group IV was given 10 µmol CAPE in 10% ethanol given in 2 ml/kg/day. Group V was injected with toluene 500 mg/kg/day intraperitoneally. Group VI received TQ with toluene and Group VII received CAPE with toluene. At the end of the 15-day experimental period, the brain tissues of rats were removed. The inflammation and apoptosis markers such as tumor necrosis factor alpha (TNF-α), bcl-2-associated X protein (BAX), interleukin-1-beta (IL1,), glial fibrillary acidic protein (GFAP) and caspase-3 levels were evaluated in regards to gene expression using realtime PCR.

Results: TNF-α, BAX, IL1,, GFAP and caspase-3 levels were significantly increased in toluene-treated rats when compared with both control groups. It was observed that TNF-α levels were decreased significantly in the rats treated with toluene and TQ, while the decreases in other parameter levels were statistically insignificant. There was a statistically insignificant decrease in all parameters measured in toluene and CAPE group.

Conclusion: Toluene was found to cause significant damage to brain tissue due to inflammation and apoptosis. TQ and CAPE had no effect on these changes in the brain.

Keywords: toluene, CAPE, TQ, brain, inflammation, apoptosis

P-109

Investigation of the subthalamic nucleus with ultra-high magnetic resonance imaging

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Objective: Subthalamic nucleus, a small lenticular nucleus, is located at the border between diencephalon and mesencephalon. Magnetic resonance imaging is a commonly used method for preoperative targeting of the subthalamic nucleus deep brain stimulation, which is a surgical treatment for advanced Parkinson's patients. Therefore, accurate description of the anatomy of the subthalamicus nucleus has a great importance and it becomes an anatomical structure that the researchers are interested in intensively. For this reason, in this study, it was aimed to investigate subthalamic nucleus with ultra-high field magnetic resonance imaging. Methods: This study was conducted at Maastrıcht University Medical Center. Nine healthy controls (3F, 6M; mean age 61.44±6.02) were participated to the study. Subthalamic nucleus absolute volumes were calculated on ITK-SNAP version 3.4.0 beta software. The boundaries of these nuclei were delineated by manual segmentation.

Results: The mean absolute volumes of subthalamic nucleus were 143.042±41.863 mm^3 on the right and 151.972±40.861 mm^3 on the left in healthy individuals. The mean normalized volumes of healthy individuals were found as 0.00933±0.00284% on the right and 0.00983±0.002328% on the left.

Conclusion: Seven Tesla magnetic resonance imaging devices make it possible to distinguish subthalamic nucleus from substantia nigra where conventional magnetic resonance imaging devices are not sufficient. Obtaining clear images of the subthalamic nucleus is expected to increase the success of surgical procedures of this nucleus.

Keywords: subthalamic nucleus, magnetic resonance, 7T, volume

P-110

Morphometric analysis of the external ear in young adult populations individuals in Turkey

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Objective: The aim of this study was to determine the average values of different morphometric measurements on individuals by gender in young adults in the population of Turkey on the right and left auricle.

Methods: This study was conducted on a total of 80 young adult auricle, 40 females and 40 males, aged 18 to 25 years with no history of external ear trauma, plastic and reconstructive surgery or congenital anomalies.After obtaining the written consent of the participants, auricle photographs were obtained from the right and left sides of the face using a macro lens with an aperture of f/1.8 and a Canon EOS 70D camera with a resolution of 20.9 megapixels. The obtained images were evaluated on a computer using ImageJ version1.47. The points described in the literature were used in these measurements and evaluations. From these points, the total height and width of the cocncha, ear nipple and auricula were measured from the superior-inferior distance of the autobasion.

Results: The results obtained from the participants were statistically evaluated and when compared by gender, all values were higher in males (total height $p<0.05$) and autobasion superior-inferior distance $p=0.00$). When the values obtained for right and left sides were compared, mean values of lobular width, total height, total width, conchal width, lobular height and autobasion superior-inferior distance were found to be higher on the right side, while the mean value of conchal height was higher on the left side.

Conclusion: This study provides information on the measurements of each outer ear in young adults by gender of individuals in the population of Turkey. These results are important since they contribute morphologically to the reconstruction of congenital or acquired anomalies related to the external ear.

Keywords: external ear, auricle, morphometry, young adult

P-111

A case of hyperosteosis frontalis interna in a male cadaver

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Objective: Hyperosteosis frontalis interna (HFI) is a pathology first described by Morgagni, characterized by thickening of the facies interna of the Os frontale. It is mostly seen in postmenopausal women. Although it has been associated with many clinical conditions. It's etiology has not yet been established.

Methods: In the education dissection of 10% formalin-fixed cadavers in Ege University Anatomy Department, HFI was found by removal of calvaria. Detected in Os frontale and bone and soft tissue were examined.

Results: In a male cadaver, thickening was observed towards the endocranium, starting from the sinus frontalis and covering 50% of the os frontale. It was close to 3 cm. Our case was found to be in accordance with Type D HFI in the classification which was put forward by Hershkovitz in 2011. In addition, narrowing of the sinuses was remarkable as a result of significant thickening of the inner wall of the two sinus frontalis. Soft tissue showed thinning of the falx cerebri. Cross section was taken from the compression region. Cortical cell change investigated. There were depressions in the area. The anterior part of the Falx cerebri was visible from the outside.

Conclusion: HFI, which is often attributed to postmenopausal hormonal causes, is also rare in male patients. In our case, it was suggested that chronic sinusitis may be the etiology of narrowing of sinus frontalis. Investigation of HFI in patients presenting with psychiatric or neurological findings of unknown etiology is of vital importance to prevent possible wrong treatment protocols.

Keywords: chronic sinusitis, hyperosteosis frontalis interna, sinus frontalis

P-112

Investigation of morphological and biomechanical properties of scapula for shoulder joint

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Objective: Scapula is a bone located at the back of the chest wall, joining the shoulder joint, and varies widely according to race and gender. Morphometric information of the scapula is important to understand and treat scapula and shoulder joint disorders.

Methods: The study was carried out on 34 dry scapulae in the Laboratory of the Department of Anatomy, School of Medicine, Uludağ University. Sliding caliper was used for measurements on dry bones and Image J program was used for measurements on photographs taken. A total of 31 parameters were evaluated in the study. Statistical analyzes were performed in SPSS 22.0.

Results: As a result of statistical analysis, descriptive statistics of 31 parameters belonging to scapula were given. As a result of correlation analysis, the highest correlation value was found to be as 0.957 Pearson correlation coefficient the distance between inferior angle of scapula and infraglenoid tubercle and the distance between the inferior angle of the scapula and supraglenoid tubercle. According to the statistical data obtained, regression formulas were developed as; Estimated value of the gleno-polar angle=115.589 - (6.401 × the distance between the coracoid process and supraglenoid tubercle) - (0.368 × α2 angle) R=0.834, Adjusted R2=0.667, Standard Error of the estimate= 2.77.

Conclusion: Knowing the osteometric values of the scapula will help physicians in the identification of different shoulder joint disorders, in the treatment of injuries caused by sports injuries and designers in the shoulder prosthesis industry in the design of the implant for the shoulder joint.

Keywords: scapula, glenoid cavity, inclination angle, gleno-polar angle

P-113

Michelangelo and anatomy

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Objective: During the Renaissance, developments in the fields of art and science in Europe were also important for the science of anatomy. The dissections performed in Florence with the support of the Medici family gave the opportunity to many artists and scientists, especially Leonardo da Vinci, Rafaello and Michelangelo to know the human body in detail. With Gutenberg's use of the printing press, the desire of artists and physicians in this region to book and publish the information obtained from dissections made important contributions to today's knowledge.

Methods: While Andreas Vesalius's work "De Humani Corporis Fabrica" was the basis of modern anatomy, the work done by many geniuses of the time, especially Da Vinci, was not recorded as a medical work. Michelangelo, one of the famous sculptors of the Renaissance period, had the opportunity to participate in anatomy dissections and study human anatomy in Florence, where he came from a young age and used the information he obtained in his sculptures (David etc.) and other works (frescoes, monumental tombs).

Results: Michelangelo was in constant contact with his physician Realdo Colombo because of his health problems, and while he was thinking of writing an Anatomy book, he could not spend time due to health problems and workload. Colombo published the book without Michelangelo's drawings after Andreas Vesalius's work.

Conclusion: As a result, the anatomical drawings of a prominent artist like Michelangelo have been destroyed before being published by him. The reflection of such a situation in history remains a remarkable point.

Keywords: Michelangelo, anatomy, Renaissance

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Relationship between left anterior cerebral artery (ACA) infarction and apathy: neuroanatomical / functional correlation

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Objective: Apathy is conceptualized as motivational deterioration in targeted behaviors. It is a common syndrome that occurs clinically in a number of neurological and psychiatric disorders. Although apathy has been strongly associated with disruption of the dorsal anterior cingulate cortex, ventral striatum, and connected brain regions, we still lack knowledge about the possible subtypes and clinical relevance. The anterior cerebral artery (ACA) irrigat these structures partially. The manifestations of ACA infarcts are rare but they are good model for apathy. In this report, we aimed to review the neuroanatomic / functional relationship of ACA infarction and apathy through clinical and neuropsychoşümetrics properties and long-term follow-up of a patient with left ACA infarction.

Methods: The results, with a follow approximately during 10 years, of a 75 year old woman who has developed a severe apathy after left ACA infarction are presented. Neuroanatomic lesion localization of the patient was demonstrated by MRI images. The clinical picture was evaluated by neuropsychometric tests in the early period and after 10 years. Moreover, pharmacological approaches are documented.

Results: Initially apathy, as well as impaired executive functions and memory were detected. However, in time, both apathy disappeared and cognitive disorders improved to a great extent. The improvement is particularly noticeable in memory.

Conclusion: We discussed the possible neuroanatomic / functional relationship of apathy over a long-term follow-up of a left ACA infarction case.

Keywords: apathy, anterior cerebral artery, neuropsychometry

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A case of isolated vestibular cystic dilation

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Objectives: Cystic dilation is formed by the fusion of the structures that make up this area, and its is one of the anomalies of the inner ear. Apart from the anomalies identified in the literature, cochlea is normal in our case and isolated vestibular cystic dilation is seldom described. We aimed to present the anatomical structure of isolated vestibular cystic dilation seen in this case, its relation with other structures, radiological features.

Case: 42-year-old female patient's right temporal bone computed tomography images were examined at Selcuk University Medical Faculty. In case, cystic dilation was determined by losing the normal anatomical structures of vestibulum and lateral semicircular canal, with its axial size measured at about 6x6 mm. The right side cochlea, anterior and posterior semicircular canals were observed to be normal.

Conclusion: A series of bone labyrinth anomalies occur as the inner ear stops at different stages of development of the bone segment. Usually, vestibular malformations are associated with cochlear malformations in these anomalies, however in our case isolated vestibulum and lateral semicircular canal were participated. The anomaly is often bilaterally, but in case seen unilaterally. We think this rare anomaly will benefit anatomists, radiologists and clinicians.

Keywords: computed tomography, lateral semicircular canal, isolated vestibular cystic dilation

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A case of Klippel-Feil syndrome

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Objective: Klippel-Feil syndrome is a syndrome that includes fusion in the vertebrae due to the absence of normal segmentation of the cervical structures. We aimed to describe this rare syndrome in our case, to show its findings in imaging methods and to emphasize its importance.

Case: On the cervical magnetic resonance imaging (MRI) of a 41-year-old female patient presented to our faculty hospital with the complaint of neck pain, appearance was detected compatible with fusion between the body of the 2., 3. and 4. cervical vertebrae on sagittal sections, and a reduction in anteroposterior diameter with fusion between the same vertebral arch.

Conclusion: Cadaver studies and radiological methods are used to identify variations and anomalies of cervical vertebrae. Although computed tomography is used more frequently in the evaluation of vertebrae, MRI is used for the evaluation of adjacent soft tissue structures and symptoms related to vertebrae pathologies. These imaging methods, which are used to evaluate the findings of Klippel-Feil syndrome, associated anomalies and risk factors, are necessary and useful for anatomist, radiologist, neurosurgeon and orthopedists for proper diagnosis, follow-up and treatment.

Keywords: Klippel-Feil syndrome, vertebrae, fusion, magnetic resonance imaging

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Congenital lobar hyperinflation: a case report

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Objective: Congenital lobar hyperinflation (CLH) is the hyperinflation of a lung lobe, a segmental bronchi, or the bronchi of multiple lung lobes without pressure from the inside or outside. We aimed to present this rare case with general symptoms of respiratory diseases of pulmonary malformation which may require surgical intervention.

Case: A 5-month-old male patient presented to faculty hospital with complaints of respiratory distress, and sighing breathing. A significant increase in volume and aeration in the upper lobe of the left lung was detected in contrast-enhanced thorax computed tomography (CT) examination and evaluated in favor of congenital lobar hyperinflation. The thymus was seen to be pushed to the right side of the mediastinum and no pathology was observed in other mediastinum formations.

Conclusion: In patients with signs and symptoms of respiratory diseases, anamnesis and chest radiography are requested after physical examination. In the early stages of life, definitive diagnoses of respiratory diseases, especially congenital anomalies, diagnosis and more thorough investigations such as contrast-enhanced thoracic CT are required. With these tests, rare malformations such as CLH can be diagnosed. In conclusion, thoracic CT is also necessary for the planning of treatment and follow-up of the patient in the future. Rarely, CLH is a malformation that should be considered in the differential diagnosis especially in patients with respiratory pathology in the neonatal period.

Keywords: lobar hyperinflation, lung malformations, thorax computed tomography

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A rare case: bilateral atresia of external acoustic meatus

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Objective: Atresia of external acoustic meatus, which is one of the developmental ear anomalies, is rarely seen bilaterally. We aimed to describe the computed tomography findings of this congenital anomaly case and to emphasize the importance of its findings for treatment options.

Case: Bilateral atresia of external acoustic meatus was detected in coronal and axial sections on computed tomography image of an 8-year-old male patient applied to our faculty hospital due to hearing loss. No congenital anomaly was detected in middle and inner ear structures.

Conclusion: Congenital bilateral atresia of the external acoustic meatus be detected in the early stages is very important. Speech retardation due to hearing loss and additional anomalies may also occur. Computed tomography is the most appropriate method for the diagnosis, classification of meatus acusticus externus atresia, identification of additional ear anomalies and determination of surgical treatment methods.

Keywords: external acoustic meatus, ear anomaly, computed tomography

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Os trigonum syndrome: findings of MRI and DR

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Objective: Os trigonum is the second most common accessory bone of the foot, usually seen as one-piece and separated, behind the lateral protrusion of the talus. Secondary ossification center occurs on the posterolateral of the talus and is usually combined to the talus. When no possible combination occurs, the condition characterized by pain in the posterior ankle is called posterior impingement syndrome due to os trigonum. The aim of this study is to evaluate the magnetic resonance imaging (MRI) and Direct Radiography (DR) findings of os trigonum syndrome.

Case: Sagittal, axial and coronal sections of a 15-year-old male patient applying to Selçuk University School of Medicine with the complaint of pain and swelling on his right foot were evaluated with the finding of MRI and DR. Bone marrow edema was found in the posterior part of the talus and os trigonum in the right ankle. In addition, the images of fat-saturated proton density-weighted sequences around os trigonum is consistent with the findings of posterior impingement syndrome.

Result: Os trigonum syndrome occurs as a result of the frequent occurrence in those who perform difficult plantar flexion movement in ankle; in ankle injuries, being squeezed between calcaneus and talus or injured due to tension of ligamentum talofibulare posterius may cause os trigonum syndrome. Today, os trigonum syndrome diagnosed by MRI is defined as: the presence of degenerative changes in the synchondrosis joint between os trigonum and talus, the presence of flexor hallucis longus tenosynovitis, the posterior tibiotalar impingement and the coexistence of loose bodies. In the definition of this variation, we think that it would be beneficial for the surgeons in the clinic with the knowledge that it is not invasive procedure first, but it can respond to conservative treatment by eliminating the exposure.

Keywords: os trigonum, variation, magnetic resonance imaging

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Nutcracker syndrome; case report

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Objective: Left renal vein (LRV) passes just below the starting part of the superior mesenteric artery (SMA), sometimes from the anterior side of the abdominal aortae, and sometimes from the posterior side. It opens into inferior vena cava. Compression of LRV between abdominal aortae and SMA is called nutcracker syndrome. There is stricture in the LRV, depending on the external press. Prior to this segment, dilation occurs due to increased pressure. The purpose of this case presentation is to identify and understand the importance of nutcracker syndrome, which can lead to serious clinical statements.

Case: Anterior type nutcracker syndrome was detected in renal ultrasound and abdominal computed tomography of a 15 years old male patient in the Radiology Department of Selcuk University Hospital due to protein leakage in the urine. In radiological images of the case, it has been observed that LRV are trapped between SMA and abdominal aortae. The angle between the abdominal aortae and the SMA was measured at 14°, the distance 2.5 mm; the diameter of the LRV before the jam was 8.7 mm, and the diameter after the jam was 2.6 mm.

Result: Nutcracker syndrome is a very rare variation. It can lead to a variety of clinical tables, including abdominal pain, hematuria, varicocele, and ovarian vein syndrome. It can cause long term renal vein thrombosis and kidney damage. Therefore, early recognition and necessary treatments should be made. Radiological investigations are very important in early diagnosis.

Keywords: left renal vein, nutcracker syndrome, computed tomography

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