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Conferences

(C-01 — C-18)

C-01

Interventional radiology

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Interventional radiological procedures are defined to cure a lesion or prevent the development of a lesion or acquire the pathological diagnosis under the guidance of imaging modalities. Interventional procedures can roughly be divided into two parts as vascular and non-vascular interventional radiology. Non-vascular procedures are carried out for the lesions located in abdominal cavity, thoracic cavity, respiratory system, biliary system, urinary tract, gastrointestinal system or musculoskeletal system. These procedures protect the patient from the risks of surgery and general anesthesia. Success rates of the interventional procedures are the same with the results of surgical operations. Complication rates due to interventional procedures are generally lower than the surgical rates. The patients do have shorter hospital stay because of the lower complication rates as large surgical incisions and general anesthesia are not applied during the procedures. Interventional radiological procedures, unlike other treatment methods, can be repeated if the one applied is not sufficient to treat the lesion. Most procedures of the interventional radiology have already become the first alternative among the treatment options in the treatment of most of the patients.

Key words: Interventional radiology.

C-02

Peer review and "Anatomy"

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Peer review is an important component in a larger filtering and feedback system in the publication process to look for "good quality" of scientific information. It can be defined as the critical scrutiny for dishing out prizes, for selecting of a manuscript, a research project or grant application, or any kind of scientific text to be published, and made by third party, who as an internal or external reviewer is a peer and not the person making the final decision. Although regarding the evidence-based arguments there are some problems with peer review and many of researches assume that peer review is not perfect, never has been and never will be. It is still valuable requirement and essential on scientific literature. Since 18th century, the first peer reviewed publication by the Royal Society of Edinburgh in 1731, the peer review has been challenged. The past few decades have seen

many proposed changes to peer review, with blinding, unmasking, and open review being the most prominent. The editorship format has also been modified in this continuum. Despite the fact that the editorial function was being perceived as accepting only manuscripts agreed by two referees a few decades ago; today, it has become a coaching mechanism by gaining an amendatory feature through some leading comments and revision suggestions offered for authors in accordance with reviewers' recommendations. Within this context, the main aspects of the peer review systems will be discussed and presented particularly from the perspectives of the experiences on our growing official journal 'Anatomy' in this conference.

Key words: Peer review, editorship, reviewer.

C-03

Impact of neuroanatomy education and training in clinical micro-neurosurgery

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Although many new technological improvements are achieved in neurological surgery recently, the most important factor for operational success depends on individual talent and technique of the surgeon. This ability comes forward especially in the regions, which are hard to reach, or the operation of the lesions located on the critical zones. The anatomical localization of the lesion and the anatomy of its surrounding neighborhood have been continued the most decisive factor in this situations. Nowadays nearly forgotten importance of the topographic gross anatomy knowledge, the contributions of anatomy to the neurological surgery as a pre-clinical science and its great role in resident education should be emphasized with all possible clinical cases.

Key words: Neuroanatomy education.

C-04

Akademic attitude

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The first university founded by Platon established in the olive groves "Academos" in Greece was called "Akademia". This university is the basis of the term "academy". In Platon's school ideas were openly and freely argued. This convention was significantly important in the development of science. Today, the importance of "Academic Freedom" still remains to be a vital value in universities. Nonetheless, the stand of an academician is just as important as a free working environment. The principled stand of an academician is significant in the development of knowledge and society. Successful scholar's have set a model in the world of science for their achievements and their stands. From past to present, from the east to the west, different scholars from different periods and different societies like Socrates, Ahmed İbn-I Hanbel, İmam-I Malik, İmam-I Azam, Giordano Bruno, Max Planck, Galileo Galilei, E. K. Kantorowicz, Bertrand Russel, Jonathan R. Cole are only some examples of scholars who were both scientifically successful and morally well-standed.

Key words: Akademic stand.

C-05

History of Cyprus

Bozkurt İ

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Cyprus at crossroads between East and West dominated by Assyrians, Egyptians, Persians, Romans, Byzantium, Louzinias in centuries and conquered by the Ottoman Turks in 1571. The Ottomans applied the millet system to Cyprus, which allowed religious authorities to govern their own non-Muslim minorities. This system reinforced the position of the Orthodox Church and the cohesion of the ethnic Greek population. The control of Cyprus (although not sovereignty) was ceded to Great Britain in 1878. The island was annexed formally by the United Kingdom in 1914 and became a crown colony in 1925. In 1955 first an anti-British and than an anti-Turkish campaign by the Greek Cypriot EOKA (National Organization of Cypriot Fighters), a terrorist group that desired political union (ENOSİS) with Greece. Turkish Cypriots, leading by TMT (The Turkish Cypriot Resistance Organisation), opposed and straggled against EOKA and ENOSİS. Cyprus gained its independence from the United Kingdom in 1960, after Zurich and London Agreements signed between Turkey, Greece and United Kingdom. Shortly after the founding of the republic, serious differences arose between the two peoples. In November 1963, President Makarios advanced a series of constitutional amendments designed to eliminate some of these special provisions. The Turkish Cypriots opposed such changes. In December 1963, Greek Cypriots attacked (The Akritas Plan) to the Turkish Cypriots. Turks, lead by TMT, defensed themselves. But many Turkish Cypriots living in mixed or small vil-

lages moved into enclaved villages or areas. UN peacekeepers were deployed on the island in 1964. Following another attack outbreak to Kophinou and Bogaziçi willages, in 15 December 1967, The Turkish Cypriot Provisional Administration was formed. In July 1974, the military junta in Athens sponsored a coup against President Makarios. Turkey, citing the 1960 Treaty of Guarantee, intervened militarily to protect Turkish Cypriots. In 1983, the Turkish Cypriots declared the independent Turkish Republic of Northern Cyprus ("TRNC"). Only Turkey recognizes the "TRNC". The first UN-sponsored negotiations to develop institutional arrangements acceptable to both communities began in 1968; several sets of negotiations and other initiatives followed until today. On April 24, Turkish and Greek Cypriots went to the polls in parallel and simultaneous referenda. Turkish Cypriots voted by a large majority "yes," Greek Cypriots by larger majority "no." The so- called Cyprus Repuplic entered the European Union on May 1, 2004. Nowadays Cyprus divided between two states.

Key words: Cyprus, history.

C-06

Histological effects of environmental estrogens on the reproductive organs of male and female laboratory animals

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Bisphenol A (BPA) is an environmental estrogen. It is widely used in polycarbonate plastics and in the lacquer lining of metal food cans. BPA has been shown to leach from these materials. In our studies, the development of embryo, given BPA in embryonal period, and their reproductive organs in adult are examined by histological methods in male and female fowls. Our studies showed that high dose BPA caused increased mortality in chicken embryo and developmental malformations in animals. High dose of BPA can induce estrogen-like effects in the hens. This effects which diminished laying capacity in hens.In male animals, in ovo administration of BPA at high dose caused the left gonad to form an ovotestis, and the dose was titrated upward negative effect being emerge for the seminiferous tubule of testis. We can report that administration of BPA at high dose affects embryo development in a negative way and this adverse effect was seen less in adult period.

Key words: Environmental estrogens, reproductive organs, laboratory animals.

C-07

Sectional anatomy of the thorax and radiological approach

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Computed tomography (CT) is the first choice of cross- sectional imaging modality for thorax. It is used in the diagnosis and evaluation of many thoracic diseases. Chest CT can be obtained for evaluation of abnormalities discovered on chest X-rays or evaluation of clinically suspected thoracic pathology even if chest radiography is normal. It is used in staging and follow-up of lung and other primary thoracic malignancies and in detection of metastatic disease. CT is an excellent imaging modality for analysis of solitary pulmonary nodule detected on chest X-ray. It can be used for evaluation and follow-up of pulmonary parenchymal and airway disease, for diagnosis of vascular disease, chest wall and pleural disease. Other indications of chest CT are: evaluation of trauma, evaluation of postoperative patients and surgical complications, treatment planning for radiation therapy. In addition, CT is used as guidance in chest interventions such as biopsy and drainage of pleural effusions. With the development of multidetector CT scanners with increasing number of detector rows, narrow section thickness, increasing scanner speed, ability for electrocardiogram gating, CT can also assess the coronary arteries and veins and can evaluate cardiac function. For evaluation of thorax, multidetector CT provides very fast imaging in one breath hold. It is obtained after administration of intravenous contrast material for mediastinal, hilar and pleural disease. Contrast material is not needed for evaluation of parenchymal disease. Routine thorax CT is displayed in 5 mm thick slices. 2- D and 3- D reformates can be obtained from thinner slices. For evaluation of diffuse parenchymal disease, high- resolution CT with thin (1- 1.5 mm) slices is useful.

Key words: Thorax, radiological approach.

C-08

Radiology as an educational tool in anatomy learning

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Learning anatomy is essential in medical sciences. For many years illustrative schemes and models or cadavers has been used

to learn the anatomical terms and structures. Memorization was the dominant method in education. However, medicine in our world is much more technology dependent in both diagnosis and treatment and new methods are needed to utilize our knowledge of human anatomy and physiology. Medical imaging technologies and highly developed informatics in this area offered a great opportunity to learn and teach the anatomy. The aim of this presentation is to underline the importance of radiology in basic anatomy learning and to give some examples from our practice. Some new methods and tools that can be used in teaching and assessment will also be discussed.

Key words: Radiology, educational tool, anatomy learning.

C-09

Cross-sectional anatomy of extremities and radiologic approach

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Imaging of the joints and other parts of extremities presents considerable challenges because of the complex anatomy and diverse pathology of them. Magnetic resonance imaging (MRI) provides multiplanar imaging of all extremity structures with unprecedented soft tissue contrast and high spatial resolution. Therefore MRI is the method of choice for imaging bone, cartilage, synovium, tendons, tendon sheaths, ligaments, entheses and muscles. Detalied knowledge of the normal cross sectional anatomy is fundamental prerequisite for accurate diagnosis of extremity pathologies. This presentation focuses on cross sectional anatomy of extremities on axial, coronal, and sagittal MR images and corresponding anatomical slices. .

Key words: Cross-sectional anatomy, extremities, radiologic approach.

C-10

Plastination

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A process at the interface of the medical discipline of anatomy and modern polymer chemistry, plastination makes it possible to preserve individual tissues and organs that have been removed from the body of the deceased as well as the entire body itself. By removing water and fats from the tissue and replacing these with polymers, the plastination process deprives bacteria of what they need to survive. In the initial fluid exchange step, water in the tissues and fatty tissues are replaced with acetone. In the second step, the acetone is replaced with a polymer solution. A specimen is placed in a vacuum chamber and the pressure is reduced to the point where the solvent boils. The acetone is suctioned out of the tissue at the moment it vaporizes, and the resulting vacuum in the specimen causes the polymer solution to permeate the tissue. For this purpose, "reactive polymers" are used, i.e., polymers that cure (polymerize) under specific conditions, such as the presence of light, heat, or certain gases. Their viscosity must be low, i.e., they have to be very thin liquids; they must be able to resist yellowing; and, of course, they must be compatible with human tissue. The polymer selected determines the look and feel of the finished specimen. (Institute for Plastination).

Key words: Plastination, polymers.

C-11

Sectional anatomy of the head and neck and radiological approach

Karaali K

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Head and neck region involves many important structures that includes sensory, motor, salivatory and aerodigestive functions. As well as the organs, various spaces covered with fascias are present, along with the major vascular structures. Sectional anatomy of these organs, spaces an fascias are important in the evaluation of tumoral and inflammatory disorders of the region and for the evaluation of the spread of the pathologic condition. Radiological evaluation of the head and neck region is usually performed by CT and MRI. In this presentation, sectional MRI and CT anatomy of the region will be given with some examples of pathologic conditions. As well, advantages and disadvantages of the two imaging techniques will be discussed.

Key words: Sectional anatomy, head and neck, radiological approach.

C-12

Cross-sectional anatomy of the abdomen and radiologic approach

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Advanced radiologic imaging modalities particularly Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) clearly delineate the anatomy and diseases of the abdominal structures by means of virtual laparotomy. Precise knowledge of the normal anatomy and variants is a prerequisite for correct diagnosis and localization of the disease processes. As imaging modalities become more available, physicians are likely to encounter more radiologic images in daily practice. Therefore they should be familiar with the radiologic anatomy of the body, and patterns of common diseases. Ultrasonography, CT and MRI are commonly employed in the investigation of suspected abdominal diseases. In this presentation, an overview of normal and variant radiologic anatomy of the abdomen will be discussed along with examples of common diseases, and key points of image interpretation.

Key words: Cross-sectional anatomy, abdomen, radiologic approach.

C-13

The use of CT technology in dentomaxillofacial imaging

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Understanding the anatomy of maxillofacial region is crucial for treatment planning regarding this region's pathologies which involves gathering as much information as possible. Key tools to successful treatment planning are the appropriate radiographic techniques, allowing visualization of a site in all three dimensional aspect with less ionizing radiation as possible. In this presentation, based on the literature and own experience, an overview is given of the current potential of CT in maxillofacial imaging. This presentation seeks to demonstrate some of the clinical advantages of the tomography system through our experiences as well as the potential advantages of the system when combined with much of the newly developed maxillofacial imaging software.

Key words: CT Technology, dentomaxillofacial imaging.

C-14

Programmed cell death and diabetes

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Programmed cell death or apoptosis is essential for normal development and homeostasis of multicellular organisms. Excessive apoptosis in beta-cell plays an important role in the diabetes. Various therapeutic strategies are being developed that target beta-cell to restore its function by promoting beta-cell neogenesis or by preventing its apoptosis. Exendin-4 enhances the expression of PDX-1 gene in islets and duct cells, increases beta-cell replication, neogenesis, and beta-cell mass. An important target organ in diabetes is the kidney. Incresed expression of nuclear-clusterin and TGF-,1 in glomerular mesangial cells, apoptotic cell death in tubul cells and podocytes are seen in diabetic nephropathy. ACE inhibitors and angiotensin receptor blockers suppressing RAS provide renal hemodinamic control and block apoptosis,proteinuri and angiotensin-II-mediated TGF-,1 expression. Detailed analysis of targets and regulators of apoptosis may reveal novel therapeutic options for the management and treatment of diabetes and its complications.

Key words: Programmed cell death, diabetes.

C-15

Microanatomy of the liver

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The liver is the largest organ of the body. It is located between the portal and the general circulation, between the organs of the gastrointestinal tract and the heart. The liver has a little ecosystem like other systems or viscera. In this system, cellular elements and extracellular matrix have a key role establishing the main structure and function. The liver is not only an important power and sewage treatment plant of the body. In fact, the liver is probably the best example for a cheap recycling system. Both parenchymal and nonparenchymal liver cells participate in the clearance activities. Among the nonparenchymal cells Kupffer cells, sinusoidal endothelial cells, Ito and Pit cells exert cellular defense functions for the whole body but also for the liver itself. Furthermore, each cell type of the liver, including the hepato-

cytes, possesses its own defense apparatus. Histologically, the liver is divided into lobules, which are usually polyhedrons, centered on a draining central vein. The lobules have portal tracts at each corner which contain portal venules, arterioles, and bile ductules. Hepatocytes are organized into unicellular plates within the lobule. Sinusoids are small capillaries coursing through the space of Disse that lack a basement membrane but have a fenestrated epithelial lining. The fenestrated lining facilitates exchange of materials between the circulation and the space of Disse, where the materials have access to the hepatocytes. Hepatocytes comprise 70% of liver mass. Zone I cells are presinusoidal, zone III cells are postsinusoidal, and zone II cells are located between zones I and III. The zonal classification of cells reflects differences in both structural and functional characteristics of the constituent cells. Zonal differences have been observed in many major hepatocyte functions, including oxidative and carbohydrate metabolism, amino acid and ammonia metabolism, xenobiotic biotransformations, plasma protein synthesis, lipid metabolism, and cytoprotective functions.

Key words: Microanatomy, liver.

C-16

Micro-computed tomography (MicroCT) applications in preclinical scientific researches

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In recent years, the number of multicentric and multidisciplinner preclinical researches have been increased. Radiological tools like MicroCT and MicroMRI are propellent factors of the most of the animal model studies. MicroCT is a really powerful and suitable device for preclinical animal models with 6-30Ìm pixel resolution, short scanning and reconstruction time, desktop configuration, minimal radiation and non-destructive detailed ultrastructural information mostly better than histological specimens. There are several application fields for MicroCT like biomedical studies, tissue engineering, electronics, material sciences, geology, building materials etc. One of the most important features of MicroCT is cone-beam reconstruction technology simply based on a 2-dimensional x-ray detector (camera) and an electronic x-ray source, creating projection images that later will be used to reconstruct the image cross-sections. This feature is highly supreme than conventional CT's fan beam technology. With adequate software support, you can create 3D anatomical models in all planes and make volume calculations from 2D reconstruction slices produced by scanner. It is possible to use new in-vivo MicroCT models for prospective animal model studies without spoiling animals. We believe that in near future most of the research institution will include MicroCT ranging from basic in-vitro desktop machine to the combined MicroCT/PET device to their machine park.

Key words: Micro-computed tomography, research.

C-17

Anatometabolic imaging

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Early diagnosis of diseases is important both for the initiation of appropriate therapy and for the final outcome. Anatomic imaging methods such as x-ray CT and USG is commonly used for the diagnosis of diseases but they traditionally lacks sensitivity as anatomic changes in lesions and effected organs occurs much more after metabolic changes in tissues. Metabolic imaging with positron emission tomography (PET) and single photon emission computed tomography (SPECT) is normally performed as a tomographic techniques designed to trace a specific biological process with a process-specific radiotracer. However, PET and SPECT imaging devices can not display metabolic information in an anatomically correct context because the visualization of normal anatomy is substantially limited. Thus, the ability to perform diagnostic imaging is compromised by the lack of anatomic correlative data. Introduction of hybrid imaging devices in 2000's and the clinical use of PET/CT and SPECT/CT equipments which gives both metabolic and anatomic information in a single image starts a new era in medicine which is called "anatometabolic" imaging.

Key words: Anatometabolic imaging.

C-18

Implementation of modern polymer technology, plastination in medical teaching

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In 2004, New York University's College of Dentistry, the largest dental school in the U.S and second largest in the

world, became the first American university to introduce a 100% non-dissection anatomy curriculum using plastinated specimens exclusively for teaching. Initially reluctant, both teachers and students came to appreciate the didactic value of the plastinated specimens. Unexpectedly, the transparent and stained body slices, rather than silicone specimens, garnered more attention. 93% of students ranked the plastinated slices as either good or excellent, compared to 88% for silicon specimens. In 2006, the University of Heidelberg-Mannheim's Department of Anatomy also introduced plastinates as its primary instructional resource. It rated the use of plastinates and models as successful, and in several aspects superior to teaching anatomy through dissection alone. After a short introduction of plastinates as a primary teaching resource, the improvement of student performance on nationwide exams in both institutions will be presented in detail, followed by the latest advances in anatomy-oriented polymer technology. The presentation will end with a demonstration of recent developments, such as the latest high quality plastinated slices (opaque and transparent), sturdy blood vessel configurations with or without bones, and the use of polymer casts of hearts and skeletons that perfectly mirror the thickness of the heart chambers or that of the cortical bone in astonishing detail.

Key words: Plastination, medical teaching.

Oral Presentations

(O-01 — O-34)

O-01

Modified Stoppa approach: redefinition and visualization of four windows

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Objective: The aim of this study was to describe the details and procedural sequences of modified Stoppa approach which has considerably high morbidity and mortality in the treatment of pelvic and acetabular fractures.

Methods: The study was performed on 20 formaldehyde fixed cadavers. Three windows were described with reference to the iliac vessels and ductus deferens, which must be preserved during the operation and a fourth window was described that enabled the iliac fossa being accessed from the iliac crest.

Results: While the parietal peritoneum with its content was being retracted to the medial side, ductus deferens, which crosses the iliac vessels superiorly, separates the region which is left in the medial part of the these vessels into two. When penetrated from the inferomedial side of this structure, the top stem of the pubis (pubic window); and when penetrated from the superolateral side of this structure, the quadrilateral plate were easily reached (quadrilateral window). From the third window (sacroiliac window) that appears when iliac vessels were retracted to the medial side, the sacroiliac joint and lateral sacral ala were accessed. Corona mortis, in pubic window; obturatory vessels and nerve, in quadrilateral window and obturatory nerve and lumbosacral trunk in sacroiliac window were the main structures at risk during surgery.

Conclusion: Although modified Stoppa approach provides an excellent exposure of the pelvis, it has some tricks and potential dangers. Surgeons should patiently execute the necessary steps using the descriptions in this study as a guideline.

Key words: Stoppa approach, pelvis, fracture, surgery.

O-02

Comparison of prostate volume measured by transrectal ultrasonography and physical sections with the actual prostate volume measured after radical prostatectomy

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This study was carried out to measure the volume of the prostate in urology outpatient clinic with complaints of prostate dissease who undergone radical prostatectomy. For this purpose we used three different methods (TRUS, real volume and Cavalieri) of prostate volume determination. Transrectal ultrasonography (TRUS) prostate volumes were calculated using the ellipsoid volume formula before surgical operation. After radical prostatectomy, prostate volume was measured by real and Cavalieri methods. We compared the prostate volumes measured with the Cavalieri method and TRUS with on actual surgical specimen volume. Mean prostate volume by TRUS was 42.86±21.87cm3. Mean prostate volume by fluid displacement, namely actual volume, for the before-formalin fixation was 52.84±21.49 cm3 and the after-formalin fixation was 50.4±20.91 cm3. Mean prostate volume by the Cavalieri principle, namely point–counting and planimetry, was 47.79±19.33 cm3, 49.06±20.52 cm3, respectively. There was a 21.39% underestimation of prostate volume as measured by TRUS compared to the actual volume. An excellent agreement was found between actual and point counting volumetric techniques. According to our study, the classic ellipsoid formula is inadequate for determining the prostate volume.

Key words: Prostate volume, real volume, transrectal ultrasound (TRUS), physical sectioning, stereology.

O-03

Morphologic features and numbers of posterior rootlets in spinal cord cervical segments

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Objective: Dorsal rootlets, Lissauer's tractus, and posterior horn of the spinal cord are termed DREZ (dorsal root entry zone). In this study morphologic features and numbers of posterior rootlets in cervical spinal cord segments were investigated in fixed cadavera.

Methods: One male, one female cadaver were used. Dura mater was cut longitudinally after laminectomy. Posterior rootlets were visualized by dissecting of arachnoid and the vessels. Cervical spinal nerves were distinguished, and the number of posterior rootlets was counted and morphologic features were determined. The length between the most cranial and caudal rootlets for every spinal nerve was measured.

Results: Diameters of the posterior rootlets were variable in two of cadavera. There was no symmetry in numbers and shapes of posterior rootlets. In the male cadaver the mean number of the posterior rootlet were found 8.4 in right, 9 in left for each cervical segment (max-min:12-5). The mean length of entering zone of dorsal rootlets for a spinal nerve was determined 1.1 cm in both sides. In the female cadaver the mean number of the posterior rootlet were found 8.6 (right), 9.5 (left) (max-min:10-7). The mean length of entering zone of dorsal rootlets for a spinal nerve was determined 1.3 cm in right, and 1.2 cm in left sides.

Conclusion: This study was showed that dorsal rootlets of cervical spinal nerves have variable number and morphologic features. Describing the anatomical variations, morphology, and number of posterior rootlets by using more cadaveric study is going to be helpful for DREZ operations.

Key words: Dorsal rootlet, fila radicularia posterior, DREZ.

O-04

Inevitable misery of learning anatomy

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Objective: The aim of this study was to get data about student beliefs and thoughts about anatomy education by using a different technique which has not been used in this field so far.

Methods: 174 Phase II medical students were asked to complete the following statement with a metaphor; "Learning anatomy is like… because…". Students' metaphors were analyzed in the light of social psychological approach which would show "how these metaphors reveal the underlying conceptualization of the words these students inhabit". For classification of the data from students' statements, all metaphors were listed and metaphors that appeared to be semantically related were grouped together under 8 categories.

Results: The most frequently produced metaphors were collected in two categories (85 metaphors, 49%), namely 'being lost/unknown situation' and 'hopeless struggle'. These were the positions in which students feel themselves desperate, confused and lost or they consider their efforts to learn anatomy as ineffectual and hopeless activity. Only three categories (46 metaphors, 26%) had positive connotation.

Conclusion: Metaphoric models have become increasingly popular as means of examining the nature of teaching and learning. By constructing metaphors, we believe that students had the chance to express their thoughts more clearly or at least in a different way. The metaphors acquired here reflect the distress in anatomy learning. These results would direct the educators to revise educational methods and instruments to provide more efficient anatomy education.

Key words: Medical education, metaphor, anatomy, curriculum reform.

O-05

E-learning as a functional extension of "hands on" practical courses in clinical anatomy

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The multimedia educational centre for teaching of topographic and clinical anatomy, endoscopy and microsurgery was developed. We use a Thiel´s method of impregnation to allow use of cadavers in interventional medicine (endoscopic and microsurgery). We converted one room into an operating theatre with full equipment for miniinvasive techniques – rigid and flexible endoscopic towers with instruments, operative table, operative microscope, X-ray C-arm, etc. All rooms are interconnected by an audio-video network with a wireless connection to the Internet. E-learning module project started in 2008. In e-learning modules can be found topics of the "hands on" courses organized in the Centre - arthroscopy (hip, knee, wrist, ankle, shoulder, wrist, small joints of the hand), bronchoscopy, gastroscopy, interventional radiography, FESS, axial skeleton traumatology. The physicians can use e-learning materials in advance to their enrollment to the selected practical course. E-

learning modules seem to be a functional extension to the practical cadaver courses in clinical anatomy education and surgical skills improvement. Supported by RP MSMT 14/71/6B/B.

Key words: E-learning, practical courses, clinical anatomy.

O-06

Insula, taste and language after medial cerebral artery aneurysms

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Data obtained from functional magnetic resonance imaging (fMRI) and lesion studies indicate that the insular cortex plays a role in the control and regulation of many cerebral functions. Anatomical and functional studies in humans and non-human primates showed that insula is involved in social-emotional (by integrating perceptions, emotions, thoughts, and decisions), sensorimotor, olfaction/taste, and cognitive functions and that these functions are localized to different regions of insula. The objective of the present study was to determine whether there were significant changes in gustatory and language functions, to examine the extent of insular damage, if any, in patients who were operated for medial cerebral artery aneurysm and to investigate whether these changes were correlated. Using voxel-based morphometry and statistical parametric mapping, we compared the MR images of the insula of the patients and age- and sex-matched controls and analysed the correlations between structural changes and taste and language functions.

Key words: Functional magnetic resonance imaging, insula, taste, language, cerebral artery aneurysms

O-07

Surgical view of the lumbar arteries and their branches: an anatomical study with potential clinical application

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Objective: Although injury to the lumbar arteries during anterior spinal approaches is often encountered, there is no published article regarding the relationship between the lumbar arteries and spinal cord ischemia. As it is important to avoid injury to these structures, the following study was performed.
Methods: With the aid of a surgical microscope, eighty lumbar arteries in ten formalin fixed male cadavers were studied. Measurements of these structures were made and relationships were observed.

Results: The spinal artery was usually the first branch of the lumbar artery. The greatest lumbar artery diameter was at L4 and had a mean diameter of 3.25 mm; the smallest diameter was identified at L2 and had a mean diameter of 2.05 mm. The largest spinal artery diameter was at the L3 and the smallest at L1. The largest anastomotic artery diameter was at L4 and the smallest, at L1. For right and left sides, the mean greatest distance between the origin of the lumbar artery and the tendinous arch was at L4 and the least at L1. The mean of the greatest distance between the anastomotic branch and the base of the transverse process of the lumbar vertebrae was at L4 and the smallest, at L1.

Conclusion: These anatomical findings of the lumbar segmental arteries would be useful for elucidating the mechanisms of spinal cord injury.

Key words: Anatomy, cadaver, lumbar segmental artery, spinal cord injury.

O-08

The biomechanical effect of angiotensin II type 1 receptor blocker on rats femur in diabetes

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Objective: In order to investigate the effects of angiotensin II type 1 receptor (AT1) blocker on femur biomechanics in diabetic (type 1) rats.

Methods: In this study, sixty female rats were used. These animals were separated into four groups. Control group (K), Losartan treatment group (K-LOS), diabetes group (D) and diabetes treatment group (D-LOS). Diabetes group (D) and D-

LOS group were injected STZ (50 mg/kg) by a single intraperitoneal injection. Only rats with blood glucose levels > 300 mg/dl were enrolled in the study. Diabetic rats were separated into two groups. Losartan (5 mg/kg/day) as AT1 blocker was dissolved in water and administered via oral gavage and repeated for 12 weeks (K-LOS and D-LOS). The same amount of vehicle was administered for the same period to the age-matched control via oral gavage (K and D). All animals were sacrificed by overdose of urethane anesthesia (2 g/kg) at the end of 12th week and all femurs were used biomechanical analysis.

Results: In our results, the ultimate tensile strength, stiffness, Young's modulus and energy absorption capacity (EAC) values of K was higher than D group and tensile strength values of D-LOS group was higher than D group.

Conclusion: Diabetes causes many complications such as nephropaty, neuropaty and retinopaty. Osteopenia is also another complication of diabetes. In conclusion, Losartan increased femur strength according to tensile tests in osteopenia.

Key words: Biomechanics, femur, diabetes, angiotensin.

O-09

The design of multiple choice questions for anatomy based on National Qualifications Framework and Bloom's taxonomy

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Objective: In this presentation, it is aimed to review the level descriptors in National Qualifications Framework and Bloom's Taxonomy, to compare these classifications, and to design a well constructed multiple choice question for anatomy on the basis of the learning outcomes.

Methods: The level descriptors in National Qualifications Framework were built on the common learning outcomes: a) knowledge and understanding, b) applying knowledge and understanding c) making judgements, d) learning skills and e) communication skills. Bloom's Taxonomy divides educational objectives (learning outcomes) into three "domains": a) cognitive b) affective and c) psychomotor. Within the taxonomy, cognitive objectives are divided into subdivisions ranging from the simplest behaviour to the most complex. Learning at higher levels is dependent on having attained prerequisite knowledge and skills at lower levels.

Results: The main difference between these two classifications is that the emphasis has shifted from instructional objectives which describe what instructors do, to student learning outcomes which describe what students can do as a result of their educational experiences. Multiple choice questions for anatomy can be designed according to the range of learning objectives: Recall basic knowledge, comprehension, transfer of theoretical and practical knowledge in diagnosis of anatomical cases, gather and interpret relevant data in the field of anatomy, develop strategic and creative responses in the solutions to well defined concrete and abstract problems.

Conclusion: Multiple choice questions can be developed to test higher order learning outcomes. Thus, this assessment method may help teachers to develop the course or programme of anatomy.

Key words: Multiple choice questions, National Qualifications Framework, Bloom's taxonomy.

O-10

The innervation pattern of the plantaris muscle: can it be used a direct donor to restore function of the deep fibular nerve?

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Objective: In cases of high sciatic nerve injuries are usually a pattern of complete or incomplete recovery of the function of the tibial division of the nerve and no recovery of its fibular division. The plantaris muscle (PM) is often dismissed as a small, vestigial muscle. The PM has been given little attention in the reviewed literature. Because of the fewness of information regarding the PM, the anatomical and functional understanding of this muscle is limited. The purpose of this study is to determine detailed anatomical data about the PM and its innervation pattern to hold a view that it is suitable for reinnervation of the deep fibular nerve or not.

Methods: 18 cadaveric lower limbs (14 formaline-fixed and 4 fresh frozen) were investigated in this study.

Results: The morphometry of the PM was investigated. The nerve of the PM originated from the nerve of the soleus muscle in 6 legs (%33.3) and directly tibial nerve in remain 12 legs (%66.6). The diameter of these nerves and the diameter of the deep fibular nerve were measured to evaluate the anatomical feasibility for reinnervation. The mean diameter of the nerve to the PM was measured 1.02 mm and the mean diameter of the deep fibular division of the common peroneal nerve was measured 1.36 mm. Width and thickness of the PM were measured 20.72 mm and 5.88 mm respectively.

Conclusion: In the light of our results, we think that the nerve of the PM is convenient for neurotization of the deep fibular nerve in anatomical aspect.

Key words: Plantaris muscle, neurotization, deep fibular nerve.

O-11

Investigation of toxic and teratogenic effects of three different antiemetics on rat embryonic development using in vitro culture method

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Objective: In this study we aimed to investigate and compare the direct toxic and teratogenic effects of metoclopramide, dimenhydrinate and trimethobenzamide HCl, antiemetic drugs on embryonic growth and development in cultured rat embryos.

Methods: 9,5 day embryos were dissected and cultured for 48 hours. Whole rat serum was used as a culture medium for the control group while different concentrations of metoclopramide (10-50µg/ml), dimenhydrinate (2,5-20µg/ml) and trimethobenzamide HCl (25-100µg/ml) were added to serum for the experimental groups. At least 10 embryos were used for each concentration. Dose-dependent effects of antiemetics on embryonic developmental parameters such as total morphological score, yolk sac diameter, crown-rump length and somit number were compared using morphological method. Embryos were evaluated for the presence of any malformations.

Results: When compared with the control embryos, the antiemetics significantly decreased all growth and developmental parameters dose dependently. While trimethobenzamide HCl was found to cause more developmental toxicity than metoclopramide and dimenhydrinate. Dimenhydrinate also caused haematoma, microcephaly, abnormal tail torsion, oedema, and middle brain deformity most frequently, while trimethobenzamide HCl caused haematoma, maxillary deformity, open neural tube, abnormal tail torsion and vertebral deformity at significant level.

Conclusion: In this study, dose-dependent developmental toxicity of three different antiemetics on rat embryos was determined. Trimethobenzamide HCl was found to be more toxic compared with metoclopramide and dimenhydrinate on embryonic developmental parameters. It was also determined to have more teratogenicity potential. This project was supported by Scientific Research Project Commission of Selçuk University.

Key words: Antiemetics, toxicity, teratogenicity, rat embryos, in vitro culture method.

O-12

The topographic anatomy of the right and left phrenic arteries

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Objective: The topographic anatomy of the inferior phrenic arteries (IPA), has not been described in detail in most anatomy textbooks, atlases and previous reports. In this study, we aimed to define the origin variations, branches and distribution of the IPA.

Methods: We studied 26 embalmed cadavers bilaterally at the İstanbul Faculty of Medicine Department of Anatomy.

Results: The right and left IPA's originated as a common trunk in 5 cadavers; 3 (%11.6) from abdominal aorta and 2 (%7.6) from coeliac trunk. The right IPA originated from abdominal aorta in 13 sides (%25), renal artery in 2 sides (%3.8), coeliac trunk in 1 side (%1.9) and left gastric artery in 1 side (%1.9). The left IPA originated from abdominal aorta in 9 sides (%17.4) and coeliac trunk in 6 sides (%11.5). In 6 cadavers, regarding 4 right and 6 left sides, we observed that the ascending and posterior branches of the left IPA had different source of origins. We observed; ascending, posterior, superior suprarenal, middle suprarenal, inferior vena caval and oesophageal branches of the IPA.

Conclusion: As both IPA's represent the half of all extrahepatic arterial collaterals to hepatocellular carcinomas, their

anatomy gains importance not only for anatomists but surgeons and interventional radiologists as well.

Key words: Inferior phrenic, variation, branching pattern, topography.

O-13

Effect of fibroblast growth factor-2 (FGF-2) on the functional recovery after facial nerve injury

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Objective: After facial nerve transection and suture (FFA) activated astrogliocytes reversibly displace perisomatic synaptic terminals from the motoneuronal surface. Hence, the amount of GFAP-expressing astroglia provides indirect information about recovering input to axotomized motoneurons. To elucidate the molecular correlates of functional recovery after facial nerve injury, we proved the role of FGF-2.

Methods: Following FFA, we studied (i) recovery of vibrissal motor performance and (ii) total amount of activated astrocytes (intensity of fluorescence after immunostaining for glial fibrillary acidic protein, GFAP) in the facial nucleus of 6 homozygous adult mice constitutively deficient in the expression of FGF-2. Six wildtype (WT) littermates were used as controls.

Results: Two months after FFA the amplitude of vibrissae whisking in WT-mice was reduced to 49% (25±3°) of the value measured in intact WT-mice (51±8°). In the FGF-2-/- mice the amplitude was further reduced to 27% (16±4° vs. 59±7° in intact), i.e. recovery in FGF-2-/- mice was poorer. There was no difference in the amount of GFAP-Cy3-fluorescence (pixel number within a gray value range of 17-103) between intact WT animals (21.18±3.71x106) and FGF-2-/--mice (21.21±2.72x106). No differences was detected also after FFA: the total fluorescence in WT animals was 40.61±3.17x106 and 43.88±1.70x106 in FGF-2-/- -mice.

Conclusion: FGF-2 may not be necessary for the activation of astroglia in the lesioned nucleus of origin. The amount of astrogliosis may not be directly correlated with the recovery of motor function.

Key words: Facial nerve, FGF-2, astrosit, functional recovery.

O-14

Arterial vascularization of splenium of the corpus callosum: an anatomical study

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Objective: Splenium of the corpus callosum is situated in the common region of the supply areas of the anterior cerebral artery (ACA) and posterior cerebral artery. Commonly it was accepted that this region was supplied by the posterior pericallosal artery (PPA) branch from the P4 part of the posterior cerebral artery (PCA).

Methods: This study was performed in the surgical neuroanatomy dissection laboratory of the Ankara University Faculty of Medicine, Department of Anatomy. Twenty human cadaveric brains were included for the study. Brain arteries were filled with colored latex. Microdissections were performed using surgical microscope.

Results: Dissections of our study revealed that the splenium of the corpus callosum was supplied by PPA (branch of the PCA), by accessory PPA and by the branches of the pericallosal artery (ACA). Branches supplying splenium arising from pericallosal artery (ACA) were present in 40% of the specimens with a mean diameter of 0.5 mm. PPA was present in 90% of the specimens and the number of these branches were changing between 0-3. Mean diameter of these arteries was 0.7 mm. 24 of these branches were branches of parietooccipital artery (60%), 9 of the branches were arising from medial posterior choroidal artery (22.5%), 4 were from calcarine artery (10%) while 3 were from temporo-occipital artery (7.5%). Accessory PPA supplying splenium were present in 50% of the specimens. 12 of them were branches of parietooccipital artery (30%), 6 of them (15%) from medial posterior choroidal artery and 2 (5%) of them from lateral posterior choroidal artery. Mean diameter was calculated as 0.3 mm.

Conclusion: Arterial supply of the splenium of the corpus callosum varied and can be nourished both from anterior and posterior circulations of the brain. The anatomical information about arteries supplying splenium of the corpus callosum is extremely useful during surgical operations to the splenium and also during operations to the pathologies in this region. With increasing the knowledge about these arteries more safe and successful interventions can be performed to this region.

Key words: Anatomy, cadaver, corpus callosum, splenium, anterior cerebral artery, posterior cerebral artery.

O-15

Comparison of two techniques used in fabricating implant: stereolithography (SL) and fused deposition modeling (FDM)

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Objective: The purpose of this study was to assess the accuracy of physical models of parenchymal tissue fabricated from cryosections using SL and FDM techniques.

Methods: The Visible Human Dataset (VHD) was used as the input imaging data. These images were processed in 3D-Doctor software for creating three-dimensional surface of Computer Aided Design (CAD) model of the thyroid gland by using snake technique. These surface data were then converted to a CAD (Computer Aided Design): CAM (Computer Aided Manufacturing) file format, which is used to guide the stereolithographicand the fused deposition modeling. Related models were fabricated in rapid prototyping machine of SL and FDM. The accuracy of SL and FDM models was determined by comparing distances between key landmarks on the virtual model and corresponding SLmodel and virtual model and corresponding FDM model.

Results: An excellent agreement was found in comparing the maximal dimensions of the CAD model of the thyroid gland and the corresponding stereolithographic model and fused deposition modeling model. SL and FDM models were exactly as identical as virtual model. Spearman correlation test revealed perfect correlation between the measurements on the models.

Conclusion: Both SL and FDM techniques could be effectively and reliably used for manufacturing 3-D solid implants from serial sections of the anatomical structures interchangeably.

Key words: Stereolithography, fused deposition modeling, thyroid.

O-16

Opinions of a group of anatomy instructors on cadavers and using cadavers in teaching anatomy

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Objective: The aim of this study was to evaluate the cognition of Anatomy Instructors on cadavers and how they adopt an approach on the issue and predict a connection in student-cadaver relations.

Methods: In order to evaluate the opinions of Turkish Anatomy Instructors, a data collection form consisting of 18 statements were asked to answer by using a web basis questionnaire. Data were evaluated by proportions and mean values and group comparisons were done by using Mann Whitney U and Kruskal-Wallis tests. Data were analysed using the statistical package SPSS v.11.5 for Windows. The p values less than 0,05 were regarded as significant.

Results: The participants were 80 instructors from 35 different medical faculties. Of 80 instructors, 88.8% declared that they studied on cadavers during the undergraduate and 98.8% during the postgraduate period and 83.8% of instructors declared that they teach anatomy by using cadavers. The most adopted common view of participants was that the human body is substantial and respectable. The least adopted view of the participants was that 3D modelling and studying on models are superior to studying on cadavers in anatomy teaching. Organizing a ceremony to bury the cadaver is a general accepted view, but it is more adopted by male participants (p=0.016). The view that studying on cadavers will eliminate the negative prejudice of students on the thought of death and studying on dead human body was more adopted by associate professors (p=0.009). The view that studying on cadavers will contribute to the development of professional identity of students was adopted more by older participants (p=0.022).

Conclusion: Participants emphasize the role of cadavers, respect them and think that it has utmost importance in learning anatomy and gaining a professional identity by students.

Key words: Cadaver, teaching anatomy, ethic.

O-17

Variations of celiac trunk and its branches: an angiographic study

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Objective: A detailed knowledge on the anatomical variations of celiac trunk and its branches is without doubt of importance not only for surgical approaches, but for planning the proce-

dure in the field of interventional radiology. Celiac trunk is the first ventral branch arising from abdominal aorta just beneath aortic hiatus. Its main branches are left gastric, common hepatic and lineal arteries. However its branching pattern may show numerous variations.

Methods: In the present study these variations were evaluated on the angiographic images of 46 male and 20 female, a total of 66 patients attended to Department of Radiology in Başkent University Faculty of Medicine in 2009 from January to December. Variations in the anatomical structure of celiac trunk and its branches were classified into eight types, and their incidences were evaluated in the population.

Results: In 80.3% of the sample the classical type of celiac trunk with its three main branches (Type I) was observed. In 7.6% of the sample a hepatic artery was observed arising from superior mesenteric artery (Type II). In 9.1% of them a hepatic artery was arising from left gastric artery (Type III), and lineal artery was observed arising from abdominal aorta in 3.0% of the patients.

Conclusion: Detailed information on the branching pattern of celiac trunk will prevent the clinician causing a vascular injury during catheterization in radiological interventions or surgical approaches.

Key words: Celiac trunk, variation, liver transplantation, angiography

O-18

The protective effects of omega-3 fatty acid against toluene-induced neurotoxicity in prefrontal cortex of rats

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Objective: Toluene is used as an organic solvent, and it has neurotoxic effects. Omega-3 is an essential fatty acid. It is required for brain development. The aim of this study was to investigate the protective effects of omega-3 fatty acid against toluene-induced neurotoxicity in prefrontal cortex of rats.

Methods: Twenty-one male Wistar rats were divided into three groups with seven rats in each. Rats in the group I were the controls. Toluene was intraperitoneally injected to the rats of group II with a dose of 250 mg/kg. Rats in the group III were received omega-3 fatty acid with a dose of 0.4 g/kg/day while exposed to toluene. After 14 days, all of the rats were killed by decapitation. Enzymatic activities of superoxide-dismutase (SOD) and glutathione peroxidase (GSH-Px) and the level of malondialdehyde (MDA) were studied in the prefrontal cortex of rats, spectrophotometrically.

Results: Enzymatic activities of the SOD and GSH-Px were decreased, and MDA levels were significantly increased in rats treated with toluene compared to the controls. However, the increased SOD and decreased GSH-Px enzymatic activities and MDA levels were detected in the rats administered omega-3 fatty acid while exposed to toluene.

Conclusion: The results of this experimental study indicate that omega-3 fatty acid treatment can prevent toluene-induced neuronal damage in the prefrontal cortex of rats.

Key words: Omega-3 fatty acid, toluene, prefrontal cortex, rat

O-19

The effect of Interleukin-12, as an antiangiogenic factor, on endothelial cells obtained from umblical cord

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Objective: Angiogenesis depended on balance between angiogenic and antiangiogenic factors. Previous studies reported that Interleukin-12 (IL-12) has antiangiogenic effect on vessel development. The aim of this study was to investigate the in vitro effects of the different doses of IL-12 on in vitro endothelial cell proliferation.

Methods: Human umbilical cord obtained at Caesarean sections from Erciyes University hospital. After washing PBS, the cord vein lumen was filled with PBS containing 10mg/ml collagenase after 10 minute incubation at 37 °C. The contents of the vein were gently flushed out with an equal volume of 30ml medium collected in a conical centrifuge tube then centrifugated at 1000 rpm for 10 minute yielded a small white pellet which was resuspended in culture medium. The cells were plated in 2ml of medium at T-25 plastic flasks. The endothelial cells were passaged when confluent density was approached. After

obtaining enough cells, the cells were counted by Thoma slide. Then cells were divided into control and experimental groups. 0.1-0.5-1.0-5.0 and 10.0 ng/ml IL-12 were added to medium of each experimental group (n=16). After 48 hours culture period, the effects of IL-12 were determined by cell counting.

Results: While the mean cell number of control group was 79.00x105 (±25.79), experiment groups were 35.60x105 (±11.44), 15.20x105 (±6.12), 13.20x105 (±4.94), 12.80x105 (±4.67) and 11.60x105 (±5.33) respectively. There was a reduction on cell number in experimental groups when compared to the control. This reduction was statistically significant ($p<0.05$).

Conclusion: IL-12 could prevent the vessel formation by decreasing endothelial cell growth.

Key words: Interleukin-12, endothelial cell, umblical cord.

O-20

Ectopic sella turcica and long infundibulum with empty sella syndrome - case report

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Objective: "Empty sella syndrome" is a syndrome due to the herniation of cerebrospinal fluid within the sella turcica and the pressure on hypophysis. The purpose of this study is to report the case about empty sella syndrome that accompanies with ectopic sella turcica and long infundibulum which is very rare anatomical variation.

Methods: Magnetic resonance imaging (MRI) was scanned in sagittal plane flair sequence in a 28-days old male infant with morphological malformations such as flat nasal bridge, hypertelorism, cleft lip and palate.

Results: In the MRI of this case, empty sella syndrome which accompanied with ectopic sella turcica and long infundibulum was detected. We observed that ectopic sella turcica is above comparatively back part of the hard palate.

Conclusion: Ectopic sella turcica and long infundibulum that accompany with empty sella syndrome are very rare anatomical variations. The variations originate during embryological development. It is clinically significant for clinicians to know for surgical operations to anterior skull base, palatal, nasal and nasopharyngeal regions.

Key words: Empty sella, ectopic sella, long infundibulum, hypophysis, variation.

O-21

Cross-sectional and radiologic anatomy in medical education

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Objective: Cross-sectional anatomy and radiologic anatomy are getting increasingly important in the modern anatomy education. Within this context, our purpose is to share our experience in cross-sectional and radiologic anatomy education in the Hacettepe University, Faculty of Medicine, Department of Anatomy with our colleagues, and to bring the subject into discussion.

Methods: We contacted with the dean's office and the phase coordinators, and asked for inserting cross-sectional and radiologic anatomy courses into the curriculum of each and every subject committees. With their positive answer and support, Department of Anatomy and Department of Radiology were charged to collaboratively implement the cross-sectional and radiologic anatomy courses. In that, one hour of cross-sectional and one hour of radiologic anatomy lectures were added to the curriculum of each subject committee. In addition, selected images from Visible Human Project Male Dataset were labeled and large posters were prepared for the use of the students during the laboratory courses, with the intention to get them practice the information given in the theoretical courses. These posters were also used in the practical exams.

Results: Most of the students attendedto these lectures. In these theoretical and practical lectures, the students were inquiring and they were willing to learn the new subjects with great excitement. Additionally, by encouraging the students to thinking and cross-examining, their abilities to clinical solutions were improved. In the sectional anatomy lectures, the students had the chance of evaluating their anatomy knowledge which they have learned during the subject committees.

Conclusion: By the help of the sectional and radiologic anatomy lectures, the students feel themselves closer to their future medical profession. Another advantage of these lectures was the direct attendance of the students to the lectures and by this way, a peer education model was constituted. Because of the contributions of sectional and radiologic anatomy lecture, to the education of Anatomy, they can be named as irresistible education models and they add self-confidence to the students for their future clinical training periods.

Key words: Medical education, cross-sectional anatomy, radiologic anatomy.

O-22

A review of periorbital anatomy as it relates to aesthetic procedures

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Objective: Minimally invasive techniques such as botulinum toxin injections for rejuvenation of the periorbital area are among the most commonly performed outpatient procedures. Our aim is to provide the clinician with a clinically relevant guide to the location and orientation of these muscles with regard to topographic landmarks.

Methods: 20 cadaveric heads fixed in 10% formaline solution were studied. Meticulous dissection was carried out using an operating microscope. Digital calipers were used for all the measurements. Measurements of the clinically important structures in relation to topographic landmarks were made.

Results: The distance between the lowermost point of nasal suture and the origin of procerus muscle, d1 ranged from 0 to 10 mm with a mean of 5.95 mm. The distance between the nasion and the origin of procerus muscle, d2 ranged from 6.2 to 33.1 mm with a mean value of 17.1 mm. The distance between the nasion and the origin of the corrugator supercilli muscle, d3 ranged from 0 to 9.4 mm with a mean of 5.1 mm. The distance between frontonasal suture and the origin of the corrugator supercilli muscle, d4 ranged from 0 to 6.1 mm with a mean of 3.2 mm.

Conclusion: Detailed knowledge of the muscular anatomy is essential for the chemical treatment of dynamic frown lines of the face. We think that our study will aid the physician while interpreting the elongation of corrugator supercilii and procerus muscles in an effort to customize the treatment for each patient.

Key words: Periorbital anatomy, aesthetic procedures.

O-23

Percutaneous ilioinguinal-iliohypogastric nerve block versus step-by-step local infiltration anesthesia for inguinal hernia repair: what cadaveric dissection says?

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Objective: Percutaneous ilioinguinal-iliohypogastric nerve blockage and step-by-step infiltration technique are used during surgical procedures in inguinal region for ilioinguinal and iliohypogastric nerve block. In this study, we aimed to see how far two procedures diffuse when the same volume of agent is given to display the difference between the methods regarding femoral nerve palsy.

Methods: The study was performed on a formaline fixed adult male cadaver. At the right side, 10 ml diluted dye solution was injected between the internal oblique and transverse abdominal muscles, by checking the needle tip from inside the abdominal wall. At the left side, a transvers skin incision was made and the subcutaneous tissues were opened to see external oblique aponeurosis. The tip of the needle was inserted under the aponeurosis and the same dye solution was given superficial to internal oblique muscles. Following the injections, stained areas were investigated superficially and within the deeper tissues.

Results: There was a complete superficial staining covering the iliohypogastric and ilioinguinal nerves in the inguinal floor at both sides. At right side, intraabdominal observation showed a wide and intense peritoneal staining, while almost no staining was seen at left side. The dye solution also infiltrated the area of the femoral nerve prominently at right side. On the contrary, a very limited staining was seen at left side.

Conclusion: Previous reports and the present finding suggest that step-by-step infiltration technique under direct surgical vision is safer than percutaneous inguinal block for patients undergo inguinal hernia repair.

Key words: Ilioinguinal nerve block, iliohypogastric nerve block, inguinal hernia repair.

O-24

Gene expression in the spinal cord: Implications in spinal cord anatomy and research

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Objective: Gene expression studies make an important contribution to spinal cord research and anatomy. This study is mainly on the recently completed Allen Spinal Cord Project.
Methods: This is an interactive atlas database of gene expression mapped in the mouse across all anatomic segments of the cord at postnatal days 4 (P4) and 56 (P56). The indexed set of

images for the entire genome is based on RNA ISH data, and is searchable and sortable by gene, age, expression, and spinal cord segments. For this project, we have prepared reference atlases of the P4 and P56 C57Bl/6J male mouse on the Nissl sections (Allen Spinal Cord Reference Atlas, Kayalioglu and Watson, 2009), identifying over 80 structures in the spinal cord.

Results: Scientists from the spinal cord community including us further analyzed the sets of 1250 interesting genes annotated by insitute experts, to identify putative cell types, new markers for cell types, novel boundaries defined by gene expression, differences between P4 and P56, and regionally-restricted patterns along the dorsoventral and rostrocaudal axes. Additionally, all the genes expressed in the dorsal root ganglion neurons of the entire P4 data set were analyzed. The cytoarchitectonic localization of genes and their specific expression in the spinal cord contributes to our understanding of their function in the context of the circuitry of the dorsal horn.

Conclusion: This open access resource, available at www.brainmap.org, represents an unprecedented platform for exploring the spinal cord at the cellular and molecular levels.

Key words: Spinal cord, gene expression, atlas, in situ hybridisation.

O-25

Toluene induced apoptosis and protective effect of melatonin on the liver of rats

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Objective: This study was undertaken to investigate the protective effects of melatonin against toluene-induced apoptosis in the liver of rats using by tunel assay.

Methods: In the study, 21 adult male Wistar-albino rats (200-220 g) were used, which were randomly divided into one of three experimental groups. Animals in group I were used as control group. The rats in group II were exposed toluene (3000 ppm/1hour/day) for 4 weeks, while the rats in group III treated with melatonin (10 mg/kg/day, ip) plus toluene inhalation. At the end of 4-weeks experimental period, all rats were killed by decapitation. Then the liver tissues of rats were removed. For light microscopic examination, tissue specimens were embedded in paraffin blocks following routine histological procedures. Section obtained from paraffin blocks stained with TUNEL assay for the determination of apoptosis.

Results: In light microscopic examination TUNEL+ cells were present in the liver of rats that inhaled toluene and melatonin treatment decreased the number of apoptotic cells.
Conclusion: In conclusion, this immunohistochemical study revealed that melatonin can be used as a protective agent against toluene toxicity conditions.

Key words: Toluene, melatonin, liver, tunel assay.

O-26

Histopathological investigation of systemic effects of nicotine and alcohol administered to the pregnant rats on their fetuses

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Objective: Our aim is histopathological investigation of systemic effects of nicotine and alcohol administered to the pregnant rats on their fetuses.

Methods: Forty-two wistar albino adult female rats weighing 180-200 gr were utilized in the study. Female rats were breeded under control and pregnancy was confirmed. Pregnant rats were assigned into 3 experimental groups as nicotine, alcohol and nicotine+alcohol and 3 control groups. Experimental group rats were exposed to nicotine (2 mg/ kg/ day, two doses intraperitoneal (i.p)), alcohol (6 g/kg/day ethyl alcohol orally) and nicotine+alcohol (2 mg/kg/day, two doses nicotine i.p. and 6 g/kg/day ethyl alcohol orally) and given only saline via the same dose and route from the 14 th day to 21st day. Specimens were taken from brain, heart, lungs, liver, kidneys, spleen, pancreas, stomach, eyes and ears. Routine follow up procedures were applied to the tissue specimens, and then evaluated under microscopy histopathologically.

Results: Nicotine group; dilatation and congestion in sinusoids, decrease in hepatocytes, degeneration in cellular borders

and structures in liver cells, congestion in alveoli of lungs were found. Narrowing in intercellular spaces of especially basal cells and vacuolizations in fibroblasts of lens in eyes were observed. Nicotine+alcohol group; dilatation in sinusoids of liver cells, and narrowing in intercellular spaces, tight connection of cells and intense degeneration in fibroblasts of lens in eyes were observed. Dilatation in alveoli, marked slimming in septa of alveoli of lungs were determined. No changes was found in control groups.

Conclusion: Exposure to alcohol and nicotine during pregnancy may cause severe damage in the rat fetuses, thus nicotine and alcohol should not be used during this period.

Key words: Alcohol, nicotine, rat, histopathology.

O-27

Investigation of peripheral lesion-induced structural plasticity capacity of somatosensory cortex in prenatally stressed rats

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Objective: The aim of this study was to investigate the peripheral-lesion induced structural changes in somatosensory cortex and underlying possible mechanisms.

Methods: Six pregnant rats were exposed to immobilization stress corresponding to trigeminal neurogenesis period (E12-E17), for 3 hours. One group of animals from control and stressed group were anesthetized by hypothermia and the center row whisker follicles were electro-cauterized at postnatal day 1. Following development of cortical maps, two pups from each mother were perfused at postnatal day 10 and their flattened cortical sections were stained histochemically. Other pups were sacrificed by cervical dislocation and tissues from ipsilateral and contralateral somatosensory cortex were frozen in liquid nitrogen. Neurotrophic factor (BDNF and NT-3) levels in homogenates were measured with ELISA kit and protein concentrations were determined by Bradford method.

Results: Although stress protocol used in this study significantly increased the adrenal/body weight ratios, total barrel volumes were not found different. After cauterization of the middle row whiskers (C), a compensatory increase occurred in the volume of barrels representing the neighboring whiskers (D). However, C/D ratio was significantly higher in prenatally stressed rats in comparison to the control rats. Neurotrophic factor levels were found significantly lower in the contralateral cortex of prenatally stressed rats [BDNF=217,86±19,9pg/µg protein ($p<0,05$); NT–3= 179,03±27,2 pg/µg protein ($p<0,01$)]. There was no significant difference in the ipsilateral side.

Conclusion: Prenatal stress exposure causes negative effects on the capacity of structural plasticity. It seems likely that reduced levels of BDNF, the most common neurotrophic factor in the brain, and NT-3, particularly increasing arborization in the trigeminal axons, play role in formation of these effects. (Supported by TUBİTAK grant # 109S027).

Key words: Prenatal stress, barrel, trigeminal system, plasticity, neurotrophins.

O-28

The compliance of the results of the two basic radiologic bone age determination methods with real age during puberty in Turkey and in the world

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Objective: To compare the results of the most used radiologic methods of bone age determination with the chronological age (CA), and to evaluate the situation in our country and other countries.

Methods: The study was conducted in 149 subjects (100 M / 49 F) aged between 12 and 19 years. Postero-anterior radiographies of left hand-wrists of the subjects were obtained, and bone ages were determined by using the Greulich-Pyle (GP) and the Tanner-Whitehouse (TW) methods. Bone ages were compared with CA's, and findings were evaluated with the results in other countries. Results were assessed by Pearson Correlation Test and Paired Sample t Test.

Results: The GP age was bigger than CA in males (1.08 months; $p>0.05$) and females (2.04 months; $p>0.05$), and there were very strong correlations ($r>0.75$) between them. The TW ages were bigger than CA in males (1.08 months; $p>0.05$) and females (7.56 months; $p<0.05$), and there were strong correlations ($0.50<r<0.75$) between them. After the literature screening, it was found that GP and TW methods could produce different (close or far) results to CA in different populations and ethnic groups.

Conclusion: The GP method can be used in 12-19 years of age in both sexes; the TW method can be used in males, but one should remember the statistically significant difference when using it in females. To determine the compliance of these bone age determination methods to Turkish population, larger studies should be conducted with more subjects and more parameters.

Key words: Bone age, bone development, puberty, radiology, anatomy.

O-29

Investigation of morphologic and morphometric features of ischiadic nerve in rat

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Objective: Our study was performed in order to obtain comprehensive data related to the ischiadic nerve of rat which was lacking in classical textbooks and literature so as to provide basic information to the experimental studies.

Methods: Fifty adult (25 males and 25 females) wistar albino rats 200-230 gr in weight were used in the study.

Results: Thickness of the nerves were measured with ocular micrometer at L4, L5, L6 root levels, abdomino-pelvic and gluteal regions under light microscope and the axons were counted. Statistical analyses were made with Spearman's rho test in SPSS 15.0 software, $p<0,05$ and $p<0,01$ were accepted as significant. The ischiadic nerve was found to be formed mostly by the combination of L4, L5, L6 (60%), contribution from L3 to L4, L5, L6 (30%), sacral contribution to L4, L5, L6 (3%) and less frequently contribution from other levels. The diameter of nerve roots participated in the formation of ischiadic nerve ranged between 0.38 mm and 1.3 mm and the number of axons at the root level was counted between 114 to 863.

Conclusion: In conclusion, the formation of ischiadic nerve was determined to be mostly from L4,L5,L6 roots and significant correlation was found between the extremity measurements and morphometric data on the ischiadic nerve. The detailed data on the ischiadic nerve of rats will be a valuable source for us and other investigators in future studies on that subject.

Key words: Ischiadic nerve, morphometry, variation, rat.

O-30

Morphometry of plantaris muscle in human fetuses

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Objective: Plantaris arises from the lower part of the lateral supracondylar line and the oblique popliteal ligament. Its small fusiform belly is 7–10 cm long and ends in a long slender tendon which crosses obliquely, in an inferomedial direction, between gastrocnemius and soleus, then runs distally along the medial border of the calcaneal tendon and inserts on to the calcaneus just medial to the calcaneal tendon. Occasionally it ends by fusing with the tendon. The muscle is sometimes double, and is absent in approximately 10% of cases. Occasionally, its tendon merges with the flexor retinaculum or with the fascia of the leg.

Methods: Present cadaver study is carried out on 24 human fetuses aged 17-40 weeks of gestation with no external pathology or anomaly. We measured the length and width of the tendinous portion and muscular belly of the plantaris muscle in human fetuses.

Results: The plantaris muscles were absent on a unilateral leg in 1 fetus. Most fetuses had a typical plantaris muscle and tendon shape. Mean length and width of the tendons were 36.35 and 0.43 mm, respectively, in second trimester and, 65.39 and 0.95 mm in third trimester, respectively. Mean length and width of the muscular belly were 7.48 and 2.96 mm, respectively, in second trimester and, 17.58 and 5.82 mm in third trimester, respectively.

Conclusion: This detailed fetal study in relationship to the plantaris muscle would be useful for educational anatomy dissections and surgical interventions for relevant clinical procedures.

Key words: Plantaris muscle, agenesis, variations tendon, morphologic evaluation.

O-31

Branches of the ulnar artery in the forearm: a study of fetal

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Objective: Arteria ulnaris is dominant artery of the forearm. The collateral branches of the ulnar artery are anastomosed

with branches from different sources. Collateral branches will contribute to feed structures in places far from the source. In addition, in the higher levels, ulnar artery separated from brachial artery watch as superficial, and this artery may be confused with veins intravenous injection. Therefore, branches and course of the ulnar artery were investigated.

Methods: The twenty-four fetuses were selected for this study and were dissected under a stereomicroscope. Firstly, the level divided of the ulnar artery was investigated. After, outlets of the branches from ulnar artery and watching together with which structures were examinated. These branches were investigated anastomosed with which of arteries.

Results: The ulnar artery was mainly divided from brachial artery at the level neck of the radius. So, the ulnar artery watching superficial was never found. Most of the fetuses examined, the anterior and posterior branches of the ulnar recurrent artery were got a common root, then divided into two branches. The remaining fetuses was coming as apart. The levels of separation of the branches from common interosseous artery varied. But, in front of interosseous membrane of forearm was watching anterior interosseous artery, behind the posterior interosseous artery.

Conclusion: The fixed ulnar artery watching in superficial fascia is important. In such a variation, an injection at the level in the elbow, the drugs are injected into the artery by mistake. In such cases, total or partial loss of the hand can be seen depending gangrenous. Also, the output level of branches participating in cubital anastomosis and anastomoses is important. Among the last of the muscles that artery and nerve should have in mind entrapment neuropathies.

Key words: Ulnar artery, common interosseous artery, anastomoses, fetuses.

O-32

Can analyzing the movements of tongue be used for predicting difficult intubation?

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Objective: Mortality rate of 30% occurs during induction and intubation in anesthetic procedures. This ratio shows the importance of intubation for an anesthetist. The causes of difficult intubation can be determined by evaluating the patient carefully and the anesthetist can be in preparation for difficult intubation. The angular evaluation of the tongue movements is very difficult. The purpose of this study is to investigate the movements of the tongue and study the relationship between these movements and difficult intubation.

Methods: 260 patients were included in the study. Horizontal lines passing through the mid points of the upper lip and mandible, vertical lines passing through the right and left infraorbital were constituted on each subject. Each subjects were asked for elevation, depression and left-right abduction movements of tip of tongue. The scores corresponding with the movements of tongue were compared with the difficult intubation.

Results: Difficult tracheal intubation was found in 28 (10.8%) patients. The elevation of the tip of tongue ($p<0.001$) was significantly associated with the difficult intubation.

Conclusion: In this study a new method was proposed by determining the movements of the tongue which the angular evaluation of these was very difficult. We conclude that the findings of this study will be immensely valuable for the anesthetists in predicting difficult intubation and will be a guide in using alternative methods for predicting difficult intubation. The Mallampati and Cormack – Lehane tests demand personal experience and knowledge, this newly proposed method can be easily combined with these tests.

Key words: Tongue, difficult intubation, mallampati.

O-33

The role of MDCT in anatomy education and anatomical studies

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Objective: The multidetector computed tomography (MDCT) is a new, powerful, safe and noninvasive imaging technique to demonstrate the vasculature and provides unique anatomical details. The aim of this study is to review the role of MDCT in anatomy education and anatomical studies.

Methods: It is the retrospective study which included the 700 patients whose MDCT was scanned with the suspicion of any clinical pathology. All MDCT examinations were performed with a 64-channel MDCT scanner (Somatom Sensation 64,

Siemens, Germany). All images were retrieved to the Leonardo workstation (Siemens Medical Solutions), and then were created with 3D reconstruction.

Results: The technique demonstrated the variations, dimensions and the relationships with each other of the vascular and bony structures in body parts such as head, neck, thorax, abdomen and extremities.

Conclusion: MDCT angiography is the gold standard technique to demonstrate the vasculature and bony structures of the whole body. MDCT will provide excellent opportunities for advancement not only in clinical applications but also in anatomy education and anatomical studies. .

Key words: MDCT, vascular structure, bony structure, anatomy, education.

O-34

The effects of grape seed extract on learning and memory in neonatal hypoxic ischemic rats

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Objective: It has been shown previously that neonatal hypoxic ischemic encephalopathy results in neuronal damage, learning and memory impairments. The aim of this study is to examine the effects of grape seed extract (GSE, as an antioxidant) on learning and memory impairments in hypoxic ischemic (modified Levine model) neonatal rats.

Methods: For this purpose thirty male, twelve-days-old Wistar albino rat pups were divided into four groups. Treatments were given during three days after the hypoxic ischemia operation. Distribution of rats and procedures: group 1 (n:5): sham operated; group 2 (n:6): hypoxic ischemic and received %0.9 saline (1 ml/day; intraperitoneally); group 3 (n:9): received 50 mg/kg/day GSE (intraperitoneally); group 4 (n:10): hypoxic ischemic and received 50 mg/kg/day GSE (intraperitoneally). GSE was dissolved in 1 ml %0.9 NaCl. Water maze and eight arm radial maze tests were performed respectively eight weeks after hypoxic ischemic brain injury to test learning and memory.

Results: In water maze test, time to reach the platform (Escape Latency) was increased in group 4 according to groups 1 and 3 ($p<0.05$). Path length to reach the platform was increased in group 4 according to group 3 ($p<0.05$). The swimming speed (velocity) of rats was not different between groups ($p>0.05$). In eight arm radial maze test, correct choices were decreased in group 2 according to group 1 ($p<0.05$). The number of errors in choosing arms and total errors were increased in group 2 according to group 1 ($p<0.05$). Running time of rats was not different between groups ($p>0.05$).

Conclusion: Hypoxic ischemic encephalopathy led to impairments in eight arm radial maze test in rats. Treatment with grape seed extract showed positive effects on the impairments in eight arm radial maze test but these results were not statistically significant ($p>0.05$). This study was supported by TUBITAK (SBAG-3994. 108S157) and Pamukkale University Research Grant (2008TPF005).

Key words: Grape seed extract, hypoxic ischemia, neonatal rat, learning, memory.

Poster Presentations

(P-01 — P-120)

P-01

The investigation of intracranial part and histology of the optic nerve

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Objective: Optic nerve (Cr2) mediates sense of vision and has a large number of fibers and also it has important relationships. Due to many problems resulting from the Cr2 itself or related structures, this nerve or the related structures may be frequently operated. That is why the knowledge of the Cr2 is essential.

Methods: In our study intracranial parts of 40 Cr2's and also optic chiasmas (CO) from 20 forensic autopsy cadavers were taken and examined and also tissue samples were obtained. The intracranial course of Cr2's and CO's were carefully noted. Variations were investigated. Then tissue samples were stained with H&E for histological investigation.

Results: Macroscopically, Atrophic or hypoplasic Cr2's were not found in the examined cadavers. The measurements revealed that the intracranial length of Cr2 was 11.1±1.02 mm right and 9.9±0.92 mm left. CO's were in close relation with internal carotid arteries on each side. We found that the width, anteroposterior length and the height of CO were 12.68±0.95 mm, 8.75±1.05 mm and 4.32±0.25 mm respectively. Microscopically, intrapial width and intrapial height of the Cr2's were measured as 3.69±0.27 mm and 2.85±0.19 mm, respectively. The intrapial width of CO's was found to be 11.67±0.92 mm. The intrapial height in the median line of CO2's was 2.62±0.17 mm.

Conclusion: We believe that the results obtained by the examination of the intracranial part of the Cr2 and by the histological investigations will contribute to the demography of our country. These data will help the clinicians and contribute to the researchers who will study in this field.

Key words: Optic nerve, optic chiasm, anatomy, histology.

P-02

Variations of circle of Willis

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Objective: Circles of Willis (CW) is formed by the branches of internal carotid artery (ACI) and basilar artery and the anastomoses between these in the interpedincular cistern. There are one pair of anterior cerebral artery (ACA), posterior cerebral artery (PCA) and posterior communicating artery (PComA) each on the right and left sides. Anterior communicating artery (AComA) is single. The aim of our study was to investigate the variations of CW and their localizations and frequencies.

Methods: In our study, 50 CW belonging to autopsy bodies were examined. Prior to autopsy gender, age, height, and weight were recorded as demographic information. Variations in CW were examined, noted and photographed.

Results: In the study, 9 were females (18%) and 41 were males (82%) of the cases. The mean age was 37.5±5.63 for females and 45.4±9.21 years for males. During autopsy examinations, numerous variations were detected in 42 cases (84%). In two cases (4%) hypoplasticity of precommunicating part of ACA; in 11 cases (22%) AComA fenestration and in two cases (4%) oblique course of AComA were seen. Variations of PComA were as follows: 24% hypoplasticity, 20% absence, 6% duplication and 4% wider than normal type (fetal type). It was observed that PCA originated from ACI in 3 cases (6%).

Conclusion: Rate of CW variations was 87%. These variations were mainly in PComA. We think that our findings will contribute to the clinical sciences and demographics of our country if the number of cases is increased.

Key words: Circle of Willis, variation.

P-03

Morphometric and morphologic examination of optic nerve in rat

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Objective: Optic nerve attracts attention due to its function and is an important area of research. Novel studies are planned related to eye and optic nerve. However, adequate data related to this subject could not be found in the literature. This study was planned to obtain basic data for experimental studies.

Methods: Twenty adult wistar albino rats (10 males and 10 females) weighing 230-250 gr were utilized. Morphometric measurements including length, diameter and axonal count of intraorbital, intracanaliculary and intracranial parts were performed in a total of 40 optic nerves.

Results: Optic nerve leaves the optic bulb from its nasal side and runs obliquely in the orbit, traverses the optic canal in a short distance and enters into the cranium. The intracranial part of both optic nerves approach each other and run backwards parallelly at the base of the brain and then cross each other making the optic chiasm. According to the measurements performed, intracranial length was 5.15±0.41mm on the right, 5.46±0.49 mm on the left, intracanaliculary length 1.66±0.44 mm on the right, 1.69±0.45 mm on the left, and intraorbital length was 5.46±0.76 mm and 5.45±0.78 mm on the right and left, respectively. The mean diameter of the optic nerve was measured as 0.30-0.50 mm.

Conclusion: We think that the results of such a study on the optic nerves of the rat will be a valuable source for the literature and investigators planning future research on the optic nerve.

Key words: Optic nerve, morphometry, rat.

P-04

The heart anomaly of parapagus diprosopus dibrachius dipus twins with craniorachischisis totalis: a case report

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Objective: Parapagus (laterally fused) Diprosopus (two faces) Dibrachius (two arms) Dipus (two legs) conjoined twins are extremely rare and the coexistence of anencephaly with craniorachischisis totalis makes it more extreme.

Methods: There was present such a case diagnosed by the aid of 3D ultrasonography (US) at the 12th week of the gestation of a gravida 2, para 1, 22 year old woman. The family decided to terminate the pregnancy.

Results: In post-abortal anatomic fine dissection of the thoracic cavity, two separate lungs, filling the posterior mediastinum with close approximate to each other were observed. In cardiac examination a membranous type ventricular septal defect and four anomalous great vessels arising from common posterior wall of ventricles at septal defect level were observed. The rightmost vessel was seen to branch into right and left branches, and then left branch divided to the right and left common carotid arteries of the right face; and the right branch has gone forward as right subclavian artery. The second vessel arising from inferior part of first vessel was seen to give two branches to the right lung. The third vessel arising from the left part of these vessels was seen to divide into right and left branches before forming the right and left common carotid arteries of the left face.

The fourth vessel arising from near side was seen to turn left (aorta) and give two branches to the left lung. The fine dissection of the parts below the diaphragm is still going on.

Key words: Conjoined twins, craniorachischisis totalis, parapagus diprosopus.

P-05

A variation of brachial plexus characterized by absence of superior trunk bilaterally: a case report

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Objective: The pathologic conditions of brachial plexus are seen frequently because its location is vulnerable easily and the relationships between plexus and its neighbours are tightly.

Methods: The variations in both brachial plexus of a male cadaver that was 55 years old were discovered during the study of dissection that has been made in laboratory of Anatomy Department of Dokuz Eylül Medical Faculty.

Results: The superior trunk was not formed and there was a thick branch from medial trunk to medial fascicle at the right brachial plexus. The superior trunk and the lateral fascicle were

not formed and there were two branches from medial trunk to the roots of median nerve that one of them to take part in medial root and the other branch to take part in lateral root, at the left brachial plexus.

Conclusion: The variations of brachial plexus may change symptoms of some clinical conditions. The definition of these variations is important for clinicians to make true decisions in diagnosis and treatment.

Key words: Plexus brachialis, variations.

P-06

Antioxidant and oxidant status of aqueous solutions of fresh and stored grape seed extracts

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Objective: Grape seeds exhibit antioxidant activity due to the high content of fenolic constituents in their composition. The purpose of this present study is to investigate the antioxidant and oxidant status of aqueous solutions of fresh and stored grape seed extracts.

Methods: Grape seeds (Vitis vinifera L.), by products of grape molasses production, were ground, and aqueous ethanolic extracts of grape seeds were freeze-dried to obtain grape seed extract (GSE). Total antioxidant and oxidant status of fresh or stored GSE (15 or 30 days at 4 °C) were determined at three different dilutions (1/20, 1/50 and 1/100).

Results: Antioxidant activity (FRAP) and total phenol contents of GSE were previously determined. Total oxidant status of fresh GSE was lower than stored GSE of all dilutions. Differences were statistically significant for fresh versus stored solutions (30 and 15 days respectively) in 1/20 dilution p=0.000, p=0.000; in 1/50 p=0.039, p=0.001; 1/100: p=0.031, p=0.002). Oxidant stress index of fresh GSE solution was lower than stored solutions of GSE at 1/20 and 1/50 dilutions. Differences were statistically significant (1/20: for two group p=0.00, 1/50: p=0.009, p=0.001).

Conclusion: Results indicated that storing GSE at 4 °C for either 15 or 30 days increased total oxidant status and oxidant stress indices of solutions in comparison to fresh GSE solutions. Future studies should be focused on the mechanisms of this property of GSE. This study was supported by TUBITAK (SBAG-3994. 108S157) and Pamukkale University Research Grant (2008TPF005).

Key words: Vitis vinifera, total antioksidant status, oksidant status, extract.

P-07

Obturator venous ring encompassing the inferior vesical artery originated from obturator artery

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Objective: The aim of this paper was to report this rare and localized in a surgically important area variation about pelvic vessels.

Methods: The dissection of pelvic region was performed on a 25-year-old male cadaver whose cause of death was head trauma result of a traffic accident. There was no trauma or surgical intervention on his pelvic region.

Results: During routine dissection of a 25-year-old male cadaver, we observed a venous ring formed by the right obturator vein. The inferior vesical artery also originated from obturator artery bilaterally and the right inferior vesical artery traveled through the venous ring described above. **Conclusion:** Pelvic vessels are also generally accepted more variable. Internal iliac artery and vein variations are not rare. And knowledge of such variation may be important during surgery of the pelvis and interpretation of pelvic imaging. To our knowledge, the variatons described herein have not been previously published.

Key words: Inferior vesical artery, obturator vein, pelvic vessels, variation.

P-08

Anatomical consideration of the blood supply of the talus

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Objective: Fractures of the talar neck and body are serious injuries usually encountered in multiply injured and polytrau-

matised patients. The vast majority of the fractures are either intraarticular or indirectly lead to an intra-articular incongruity through a dislocation at the talar neck and present a great risk for avascular necrosis. Avascular necrosis of the talus has always been a surgical challenge because the talus is hidden by its anatomic location and has a precarious and ill defined blood supply. For that reason we aimed to conduct an anatomical study evaluating the blood supply of the talus in details.

Methods: Eighteen lower extremities of 9 cadaveric legs were injected with colored latex. All the arteries and their branches supplying the talus have been dissected and documented. The distance of exit point of these branches to the medial and lateral malleoli was measured.

Results: In all specimens we have observed a "tarsal canal artery" running in the tarsal canal. This artery was a branch of anterior tibial artery in 13 and of posterior tibial artery in 5 specimens. The distance of this artery was 32.72 mm (mean) medial and 28.72 mm (mean) distal to medial malleolus and 37.04 mm (mean) distal to lateral malleolus. We have noticed additional branches from the anterior tibial artery supplying the head of the talus. The mean number of these arteries was 3.5. However, the anterolateral surface of the talar body and the posterior tubercles of the talus were relatively avascular.

Conclusion: We hope that a detailed knowledge of the blood supply of the talus in the light of the results of our study will help in better understanding the etiology of the avascular necrosis of the talar head and will be of use to the surgeons for localization of the arteries during operations directed to talar fractures.

Key words: Talus, blood supply of talus, avascular necrosis.

P-09

Hypoplastic left heart syndrome: case report

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Objective: In hypoplastic left heart diseases the left side of the heart is severely underdeveloped. The right side is hypertrophic and dilated, a patent ductus arteriosus (PDA) supplies blood to the systemic and pulmonar circulation. This syndrome is nearly 1/4 of congenital heart diseases resulting with death in newborn term.

Methods: During the routine autopsy process of a 2 months child we encountered a hypoplastic left heart in the morgue of Department of Forensic Medicine.

Results: The left ventricle wall width was 4mm and the right ventricle wall width was 9 mm in macroscobic investigation. The left atrium was hypoplasic (less then 1 cm diameter) and the right atrium has enlarged up to 2.5 cm diameter. We encountered an 18 mm atrioventricular defect including the lower part of septum atriale and the upper part of septum ventriculare. Additonally a defect about 2 mm diameter in the foramen ovale region was encountered.

Conclusion: The hypoplastic left heart syndrome has a ratio of %1-3 in all congenital heart diseases. The patients need an urgent intervention thus according to the occlusion speed of the PDA there is a risk for mortality within 1-2 weeks. According to our opinion, the present case is an interesting case report, that the case was 2 months old and did not give any early semptoms and sudden death.

Key words: Hypoplastic left heart syndrome, congenital heart disease, forensic medicine.

P-10

The relationship between the dural venous sinuses and the extracranial landmarks at external cranial base on neonatal cadavers

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Objective: The surgical procedures for the internal cranial pathologies are very limited especially newborns and early childhood period because of the lack of morphological determination of anatomy of this region.

Methods: This study is performed on neonatal cadavers and the relationship between the dural venous sinuses at internal cranial base and the important surgical landmarks of external cranial base is brought up morphometrically by using the needles inserted from the inner surface to outer surface of posterior cranial base.

Results: The distance between the determined landmarks on extracranial base and the dural venous sinuses were measured

and were evaluated according to the sexuality and side. The findings of relationship were different from the values of adult morphometry.

Conclusion: On the surgical interventions to this region, the existence of the detailed anatomical morphometric knowledge has been gained importance for the application place of burr holes before the initial surgery and for the determination of close relationship between the burr hole and the vital anatomic structures, especially dural venous sinuses on the way of projection of burr hole in internal cranial base.

Key words: Dural venous sinuses, external cranial base, extracranial landmark.

P-11

The morphometric analyse of foramen magnum on neonatal cadavers and the relationship between some important anatomical structures in internal cranial base

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Objective: The foramen magnum is a very important anatomical structure because of the anatomical structures that lies over and passes through from in and out. Especially in newborn and early childhood period, the anatomical knowledge and anatomical description of foramen magnum and the other structures near to this foramen has a great importance for the clinical situations that need surgery.

Methods: This study is performed on 35 newborn cadavers by macroscopic dissections to this region and the morphometric analyse of foramen magnum and the morphometric relationship between bony landmarks on posterior cranial base and again, between the dural venous sinuses of this region is made by using defining measurement techniques.

Results: In our study the vertical diameter of foramen magnum is found 35.33 mm (30-41 mm)and the transvers diameter is found as 29.67 mm (21.4-37.6 mm). The relationship between the foramen magnum and bony landmarks on internal cranial base of posterior cranial fossa is determined with measured distances statistically.

Conclusion: We believe that the exact anatomical definition of foramen magnum and the related regions consisting the important structures will be useful for the clinicians at a stage of diagnosis and planning surgery.

Key words: Foramen magnum, Internal cranial base, neonatal cadavers.

P-12

Evaluation of lingual frenulum using geometric morphometrics

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Objective: A fold of tissue, the lingual frenum, extends onto the inferior surface of the tongue from near the base of the tongue on midline. The shape, length and alignment of lingual frenulum vary between individuals. The aim of this study is to evaluate morphology of lingual frenulum with respect to gender.

Methods: Ninety seven volunteers who were students and employees of Zonguldak Karaelmas University, School of Medicine participated in the study. Two individuals with a history of hepatitis and 20 individuals with inappropriate photographs were excluded from the study. Morphometric analyses were performed on the photographs of 75 volunteers (36 males, 39 females). Lingual frenulum photograph of each individual was taken using standard photographic techniques. The individual opened his/her mouth as much as possible with the tongue in contact with the interior surface of the two middle incisors. The morphology of the lingual frenulum was evaluated with linear measurements and geometric morphometrics methods. The length of lingual frenulum between the attachments of it to the floor of the mouth and the inferior surface of the tongue were measured using Digimizer software. Four reference points determined previously were marked by tpsDig2 software on photographs. This process was repeated for each sample to create a txt file containing reference points of 75 individuals. Statistical analysis of txt files were carried out by Morpheus software.

Results: There were no statistically significant differences between the linear measurements of lingual frenulum according to gender ($p>0.05$). Lingual frenulum had no gender differences according to geometric morphometrics analysis as well ($p>0.05$).

Conclusion: It can be suggested that lingual frenulum had similar architecture in both genders.

Key words: Frenulum linguae, geometric morphometry, male, female, reference points.

P-13

Morphological investigation of the shaft of the fibula

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Objective: The purpose of this study was to analyze the result of measures of the border and the surface of the fibula shaft and determination of the number and location of the nutrient foramina.

Methods: A total 60 fibulae 30 men and 30 women belonging to the bone laboratory of the Department of Anatomy, Adnan Menderes University, Aydın were examined.

Results: A total of 30 women fibulae's 10 (33.3%) are similar with literatures and the 20 (66.6%) are different. We found that the nutrient foramina was at 2/3 proximal and on the posterior surface in 6, at 1/3 distal and on the posterior surface in 8, in the middle surface of the bone and on the posterior in 5, at 2/3 proximal and on the medial crest in 4 of 30 female fibulae. There were two foramina on a bone. One of them was at 2/3 proximal and on the posterior surface and the other one was at 1/3 distal and on the posterior surface. A total of 30 men fibulae's border and surface 6 (20%) are similar with literatures and the 24 fibula (80%) are different. We found that the nutrient foramina was at 2/3 proximal and on the posterior surface in 12, at 1/3 distal and on the posterior surface in 7, at 2/3 proximal and on the medial crest in 7 of 30 male fibulae. There were two foramina on a bone. Both of them were at 2/3 proximal and on the posterior surface.

Conclusion: A total of 60 fibulae, 16 (26.6%) of them had the normal border and surface and 44 (73.3%) of them had different border and surface. It demonstrates due to the effect of flexor, extensor and peroneal muscles that stick on fibula's shaft the borders and surfaces of the fibulae show changes. Also the number and location and ground of the nutrient foramina shows variety to much. Knowing the number and location of the nutrient foramina are important for surgical procedures of requiring conservation circulation.

Key words: Fibula, border, surface, nutrient foramina.

P-14

Radial nerve contribution to innervation of the brachialis muscle

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Objective: The purpose of this study is to find existence frequency of the radial nerve contribution to the brachialis muscle by anatomic and electrophysiological examination.

Methods: The study carried out on 22 (17 male and 5 female) formalin-fixed cadavers .To expose the radial nevre, skin and subcutaneous tissue of the inferolateral part of the distal arm were dissected. The identification of the radial nerve and site of penetration of the branch to the brachialis muscle were noted. Additionally, brachialis muscle innervation from the radial nerve was examined electrophysiologically in 20 male volunteers.

Results: Among the 22 cadavers six (4 female, 2 male) had radial nerve innervation to the brachialis muscle. We were not able to find any brachialis muscle innervation from the radial nerve although we stimulated the radial nerve supramaximally.

Conclusion: Dual innervation of the brachialis muscle has been reported by few authors. We identified different types of the radial nerve twigs innervating the lateral part of the brachialis muscle. We think that the separation of the brachialis and brachioradialis muscles during anterior approach to the distal humerus; such types are worthy of note for surgeons for injury risk of the radial nerve branch to the brachialis muscle.

Key words: Radial nerve, brachialis muscle, innervation, electrophysiology.

P-15

Anthropometric indexes related with obesity and cardiovascular risks in medical students

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Objective: The aim of this study was to present the reference anthropometric data associated with obesity and cardiovascular risk for healthy young adults in our population.

Methods: The study group consisted of 163 volunteer second-year medical students (78 women, 85 men) aged 20-25 years from Çukurova University and the measurements were made using a flexible standard measuring tape. After the anthropometric measurements, 13 of 78 women and 17 of 85 men were excluded from the study according to their high-low body mass index values.

Results: From 133 medical students, the mean values of body mass index, circumferences of waist, hip, neck, midarm, thigh

and calf were as 20.89±1.6, 73.15±5.1mm, 95.35±4.8mm, 30.32±1.37mm, 24.12±1.75 mm, 47.23±3.26 mm and 34.36±2.19 mm in women respectively while the same measurements were found as 21.98±1.67, 77.73±5.81 mm, 95.64±4.81 mm, 35.61±1.43 mm, 25.60±1.84 mm, 44.10±3.26 mm and 34.92±2.08 mm in men respectively. Moreover, waist to hip ratio, waist to height ratio and neck to height ratio were found as 0.76, 0.44 and 0.18 in women and as 0.81, 0.43 and 0.19 in men respectively.

Conclusion: The data could be used in clinical practice and epidemiological studies.

Key words: Anthropometry, body mass index.

P-16

Age-related immunohistochemical changes in rat tendo calcaneus

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Objective: The aging process is seen in different ways in human body. The most prominent feature of aging is the loss of tissue elasticity and decrease in the motion capacity of joints. Compared to other tendons, aging is an important predisposing factor regarding lesions of the Achilles tendon.

Methods: This study has been based on the age related immunohistochemical changes in the Achilles tendon of healthy rats. For this study we used Whistar albino female rats that were of 2-3 weeks, 6 months and 12 months ages using 10 rats from each group, a total of 30 rats. Streptovidin-biotin indirect immunohistochemical method was used for the immunohistochemical study and cross sections were observed under the Leica DM 4000 photo light microscope. Results: Immunohistochemically collagen type I, S-100 and TGF-_ stainings shows evident increase with age. Collagen type I immunreactivity of 2-3 week group was in the collagen fibers and areas between them. In the 6 month and 12 month group, reactivity increased in tenocytes. S-100 antibody staining in the 2-3 week group showed an average involvement. In 6 and 12 month group S-100 involvement of tenocytes were observed to be increased. TGF-β immunreactivity of 2-3 week group was in tenocytes and surrounding areas. In 6 month group reactivity was stronger in tenocytes then the collagen fiber and 12 month group reactivity was seen both in the tenocytes and collagen fibers.

Conclusion: Overuse of the tendon causes increase in the synthesis of collagen and TGF-β. This supports our findings regarding the increase in collagen synthesis.

Key words: Tendo calcaneus, age related changes, imunohistochemistry.

P-17

Optimal timing of a single dose of local simvastatin injection to rat mandibular defects

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Local simvastatin delivery to bone defects has been shown to enhance bone formation in rodents and it has been suggested that drug delivery to bone defect after the initial anabolic response would potentially increase the quantity of drug binding to the target area, leading to a greater effect with the same dose. The aim of this study was to optimize single dose local simvastatin delivery to bolster the defect healing by determining the optimal timing of delivery. A single dose of 0.5 mg simvastatin was injected postoperatively to the critical sized rat mandibular bone defects either on the 1st, 7th, or 14th days transdermally. The defects were left alone in the control group. The animals were killed on the postoperative 21st day and the defect area was evaluated by microscopy, microradiography and peripheral quantitative computerized tomography. Microscopic and microradiographic evaluation showed limited new bone formation next to host bone in all experimental groups. The mean density of the defect areas were 185.8 Hounsfield unit, 205.3 Hounsfield unit, 235.4 Hounsfield unit and 194.0 Hounsfield unit respectively at the control, 1st, 7th and the 14th day groups. The difference was not statistically significant ($p>0.05$). A single injection of 0.5 mg simvastatin showed limited bone formation at the defect side although delivered after thi initial anabolic response and couldn't enhance bone formation significantly at the critical sited bone defects for the investigated delivery times.

Key words: Bone defect healing; local delivery; simvastatin; statin.

P-18

Morphological and morphometrical examination of the malleolar groove of the fibula

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Objective: The purpose of this study was to investigate of the morphologic and morphometric features of malleolar groove of the lateral malleolus because it contributes to the understanding of the peroneal tendon pathology.

Methods: We studied 60 dried adult human fibula (30 female and 30 male) available in the Department of Anatomy, Adnan Menderes University School of Medicine. Considering the surface morphology of malleolar groove was classified. It was assessed spur that marrow containing osseous projection at lateral margin of fibula groove. As morphometric the fibula length, width and depth of the malleolar groove and the distances between the distal tip of the fibula and the lateral and medial tubercles of lateral malleolus, and the distance between the medial and lateral tubercle were measured.

Results: We found the shape of malleolar groove regularly concave in 17 out of 60 (%28.3) fibulae, the remaining 43 (71.7%) of them were not markedly groove. The malleolar groove is not in the concave form that 7 (11.7%) of them were in the convex form, 24 (40%) were flat, 12 (20%) of them were in irregular type. We found that the spur existed in 29 out of 60 (48.3%) fibulae but it was not 31 (51.7%). There was a positive significant correlation between the parameters of the malleolar groove and the measurement of the triangle edges of fibula's distal and the fibula lenght, as well ($p < 0.05$). When the values in both sexes compared with t-test, the parameters for the fibula's distal end were not statistically significant differences. Fibula length only in males were significantly greater ($p < 0.01$). When right and left side compared with the t-test, the width and lenght of malleolar groove, the distance between the distal tip of the fibula and medial tubercles on the left side were statistically greater ($p < 0.01$).

Conclusion: If the malleolar groove is shallow peroneal tendon pathology can occur. The anatomic features of the groove are important because it supports superior peroneal retinaculum (SPR) and the other structures keeping in place the peroneal tendons. As a result of morphometrical and morphological evaluations of sulcus malleolaris observations on anatomic features, we think that our findings may be useful for treatment of the problems and disorders about the peroneal tendons.

Key words: Fibula, sulcus malleolaris, morphology, morphometry.

P-19

Paravertebral muscle, vertebral and lumbar lordosis measurements in patients with low-back pain and healthy adults

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Objective: Low back pain is a health problem that not only concerns the individuals who suffer it but also their families and businesses they work for and results in loss of workforce and revenue losses. The objectives of the present study were three fold: To explore whether there were significant relations between the intensity of pain and paravertebral muscle mass, degree of lumbar lordosis and vertebral measurements, to determine if exercise increased muscle mass and finally to reveal if these changes contributed favorably to pain intensity.

Methods: The study was carried out retrospectively on 71 patients, aged between 27-63 years, who presented to a physical treatment and rehabilitation specialist with low-back pain, had MRI and performed exercise to increase muscle strength and 82 healthy adults with no back pain. MR images of the patients and controls were digitized and section areas of the paravertebral muscles, curvature of the lumbar lordosis, the intervertebral foramen and intervertebral disc were measured and groups were compared.

Results and Conclusion: Statistical analyses showed significant negative correlations between Visual analog scale (VAS) score and paravertebral muscle mass and intervertebral foramen measurements. Significant relation between pre-exercise VAS score and curvature of the lumbar lordosis disappeared after the exercise. There was no significant relation between muscle-strengthening exercise and paravertebral muscle nor was there between pain intensity and intervertebral disc height.

Key words: Low-back pain, paravertebral muscle, vertebral, lumbar lordosis measurements.

P-20

Does patellofemoral angle (Q angle) affect the wingate anaerobic performance test results?

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Objective: The effect of differences for patellofemoral angle (Q angle) on the Wingate Anaerobic Test (WAnT) were investigated in this study.

Methods: Twenty male students were chosen from Yaşar Doğu Phsycal Education and Sports High School, who accepted to participate the study. Q angle was measured by goniometer with the subject was erect position and quadriceps was relaxed. Wingate Power Tests were performed on an eliptic modified power cycle.

Results: Means and standard deviations of the Q angle was 14.5±5.2. There were no statistical differences according the age and body mass indexes. Subjects had lower than 12 degree of Q angle for both leg who were more successful in Wingate Power Test.

Conclusion: Individual structural anatomical differences can affect the sportive performance. In addition more detailed information can be obtained related with sportive performance when the effects of constitutional differences are taken into consideration with more subjects and more variables.

Key words: Q angle, Wingate anaerobic test.

P-21

The effects of upslope surface to gait asymmetries: a kinetic analysis

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Objective: Slope walking demands specific neuromuscular control strategies due to previous studies. The aim of this study to test the asymmetries of Ground Reaction Forces (GRF) during up slow walking for four different grades (0%, 6%, 12%, 18%).

Methods: 6 people (mean age: 40±3.2) were participated to the study. We used Zebris insole mat system for measuring the GRF. Participants were walked on a treadmill that can be adjusted for the different inclination. Walking speed was 2.5 km/h. After making some exercises GRF measures were recorded for all grades consequently. Maximum values of force from hindfoot (Fmax1) and lateral (Fmax3) and medial (Fmax4) forefoot and times to reach these peak forces from the initial points (Tmax1, Tmax3, Tmax4) were used for the evaluation of the asymmetries. Symmetry Index (SI) was calculated which has been used for testing biological asymmetries.

Results: The GRF values shows differences between the four grades because of the changes of muscular actions. And we found some asymmetries between the left and right sides but there is no spesific change of SI while the grade has been increased.

Conclusion: The upslope walking does not effect the asymmetry.

Key words: Gait, asymmetries, kinetic analysis, groud reaction force.

P-22

The comparison of the ROM values of hip joint between obese and normal weight individuals

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Objective: It is important to evaluate the human motion and functions in explaining many pathological case and developing new treatment methods. Therefore various tests and evaluation methods have been developed. With this idea, we aimed at comparing the Range of motion (Rom) values of hip joint in obese and normal weight men.

Methods: 20 obese men in the average age of 31, and 20 normal weight men in the average age of 25 took part in our study. By their body mass index values, we determined if the participants were obese or not. We determined the individuals as obese who have ≥ 30 kg/m2 body mass index and as normal who have 18.5-24.9 kg/m2 body mass index. We measured the Rom values of hip joint by using Cybex electronic digital inclinometer. We measured abduction, adduction, flexion, extension, internal and external rotation movements which are the six main movements of hip joint.

Results: We found the average and standard deviation of Rom values of abduction, adduction, flexion, extension, internal and external rotation in obese and normal weight men respectively: 54.2°±4.1 – 55.8°±3.6; 23.3°±2.8 – 29.1°±3; 88.6°±8.2 – 99.9°±4.4; 27.3°±2.7 – 30.7°±2.3; 35.7°±2.2 – 36.3°±3.1; 43.8°±3 - 46°±2.8.

Conclusion: In conclusion, increased body mass index in men limits the Rom values of abduction, adduction, flexion and extension.

Key words: Obesity, body mass index, hip joint, measurement of range of motion, inclinometer.

P-23

Association of an anomalous origin of left main coronary artery from right aortic sinus and multiple coronary atherosclerosis: a case report

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Objective: Congenital coronary artery anomalies are seen in 0.6-1% of all angiographies and 0.3% of autopsies. Recognition of coronary artery anomalies has a great importance in coronary angioplasty and cardiac surgery. Here, a case is presented, in which left coronary artery anomaly originating from right aortic sinus, a rare coronary artery origin anomaly and atherosclerotic lesions in coronary arteries are seen together.

Methods: The coronary artery anomaly detected in this case was assessed according to the classification suggested by Dr. Angelini and used by Congenital Cardiac Surgery Committee. Coronary angiography of a 57-year-old female patient was performed with Judkins method, and the images were analyzed in various projections.

Results: As a result of coronary angiographic examination, it was found that the left coronary artery originated from the right aortic sinus. Forty percent stenosis was detected in the left coronary artery, 70% in the left anterior descending coronary artery, 80% in the circumflex artery, and 90% in the right coronary artery due to atherosclerotic lesions.

Conclusion: Identifying left coronary artery origin anomaly, which is different from anatomic structure of coronary arteries, as a result of examinations performed by coronary angiography and other imaging methods has a great importance in prevention of complications which could rise during percutaneous and surgical interventions and in planning the treatment. .

Key words: Anomalous right aortic sinus origin, coronary artery anomaly, coronary angiography, atherosclerosıs, sudden death.

P-24

An uncommon single coronary artery anomaly form of high takeoff coronary artery anomaly: a case report

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Objective: Congenital coronary artery anomalies are seen in 0.2-1.2% of the population. Recognizing high takeoff coronary artery anomaly, one of the uncommon coronary artery origin anomaly, is crucial in terms of association with other congenital anomalies, and because it creates risks of myocardial ischemia and sudden death. Here is presented a case with a quite uncommon high takeoff and single coronary artery anomaly.

Methods: Coronary angiography of a 77-year-old male patient was evaluated by Judkins method. His digital cardiac images were examined, and assessed according to Dr. Angelini's classification of coronary artery anomalies.

Results: On coronary artery angiography of the case, a left coronary artery anomaly was detected originating as a single trunk above the sinotubular junction of ascending aorta, and no critical atherosclerotic lesion was observed.

Conclusion: In such anomalies, passage of the cannula through the vessel might be highly difficult during the coronary angiography, and the vessel could get severely injured. Therefore, it is very important to detect high takeoff coronary artery anomalies early in order to prevent coronary artery injuries during percutaneous or surgical interventions. Knowledge of the coronary artery anatomy completely via coronary angiography and other imaging methods would prevent the complications which could occur as a result of surgical interventions.

Key words: High takeoff coronary artery, single coronary artery anomaly, coronary artery anomaly, coronary angiography, myocardial ischemia.

P-25

Anatomy of the caroticoclinoid foramen and interclinoid bridging in the fetuses

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Objective: It is important to know the anatomy of caroticoclinoid foramen of bone form and the interclinoid ligament of the ligament structure, aneurysm surgery of the intracavernous part of the internal carotid artery and for surgical treatment of the tuberculum sellae menengioma. The purpose of this study was to demonstrate the incidence of caroticoclinoid foramen and interclinoid ligament, anatomy, variations and clinical significance.

Methods: This study was performed 22 fetal skull bases (44 sides). In the first stage, the presence of the caroticoclinoid foramen was observed. This foramen was identified as complete, incomplete, and contact. In the second stage, interclinoid bridges were investigated.

Results: The most of the fetuses examined (90%), the caroticoclinoid foramen was observed as incomplete. Two sides were complete, and two sides were seen as contact. In 55% of fetuses, the interclinoid ligament was seen. All of these ligaments were found to be bilateral.

Conclusion: Brain surgeons must know the bridge between processus clinoideuses. The presence of these bridges was difficult during of surgical removal of anterior clinoideus process and in the case where an aneurysm increases the risk of complications. To know the anatomy of these structures and variations, we are thought to increase greatly in surgical success rates.

Key words: Caroticoclinoid foramen, interclinoid ligament, fetus.

P-26

The variation of the extra lobe and extra fissure in the Lung: two cases report

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Objective: Lungs are divided into lobes by the oblique and the transvers fissures. The right lung consists of three lobes and left lungs two lobes. These subdivisions of the pulmonary lobes are divided into segments. During the development, some extra fissure and extra lobe may occur in the lungs. In the department of Anatomy of Erciyes University, during the routine cadavers dissection, extra fissure and extra lobe variations were found in the right lungs of two cadaver.

Cases: One of the cadaver has an extra fissure and extra lobe on the inferior lobe of right lung whereas the other cadaver has extra fissure and extra lobe both superior lobe and inferior lobe of the right lung. These fissure length is 6.7, 5.6, 4.8 cm and depth is 4.2, 3.2, 3.3 cm respectively. There was no variation in left lung of the both cadavers.

Conclusion: Previous studies reported that the lung could have extra lobes (azygos lobe) and extra fissures which were similar to present cases. The knowledge of the accessory fissure of lungs is very important in surgical procedure such as lobectomy and segmentectomy.

Key words: Accessory fissure, accessory lobe, variation, lung.

P-27

Effect of using the mouse on the median, ulnar and radial nerve motor conduction velocities

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Objective: Prolonged repetitive use of the mouse can cause damage to the muscles, tendons and nerves of the upper extremity. The aim of this study was to assess the influence of using mouse on the nerves of wrist region.

Methods: The study included 20 computer users, aged 28.25±7.7 years and 20 control subjets, aged 23.80±4.3 years (mean±SD). Anthropometric measurements (height, weight, upper limb length and perimeters of arm, forearm and wrist) were determined for each subject. Standard nerve conduction techniques using constant measured distances were applied to evaluate the major conduction velocity of median, ulnar and radial nerves in the dominant and non-dominant limb of each individual.

Results: The motor conduction velocities of the median and ulnar nerves were significantly delayed in the dominant arms of computer users compared with their non dominant arms and control subjects ($p<0.05$).

Conclusion: Many of the asymptomatic computer users with abnormal nerve conduction tests in the present study may have presymptomatic or a symptomament neuropathy similar to subclinical entrapment neuropathy as a result of strenuous wrist movements. We proposed that excursion of the ulnar and median nerves at the wrist with abnormal wrist mechanics makes the computer users vulnerable to nerve disorders.

Key words: Ulnar, median, radial nerve, computer, mouse.

P-28

Variation articles published by Turkish anatomists on Turkish anatomical database

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Objective: Studies on anatomical variations form the most common type of articles published by Turkish anatomists. Turkish Anatomical Database (TAD) is an indexing study of

articles prepared and published by Turkish scientists. TAD consists of almost all of the articles on all subdivisions of anatomical sciences, particularly on macroscopic and microscopic anatomy and embryology. The aim of this study is to classify the variation studies which are indexed comprehensively by TAD.

Methods: We investigated the main subjects of titles and/or abstracts of 7245 indexed articles. We classified the variation studies based on the investigated anatomical structures such as vascular variations (arteries or veins) and muscular variations or systemic variations such as nervous system, circulatory system and etc.

Results: We found that the most studied topics related with variation studies indexed by TAD were arteries (38.3%), muscles and ligaments (24.2%), nervous system (16.2%), skeletal system (8.8%) and veins (5.2%).

Conclusion: We believe that the easily available, regularly updated and searchable knowledge on variations is important for being informed on unusual appearances of anatomical structures.

Key words: Variations, anatomical database, anatomical sciences, medical indexing.

P-29

Scientific topics and article distributions on Turkish Anatomical Database

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Objective: Turkish Anatomical Database (TAD) project covers all subdivisions of anatomical sciences and offers the online knowledge of the published material such as articles, theses, textbooks, atlases and etc. which are completely or partly prepared by Turkish scientists who deal with anatomy, histology and embryology. The main part of the database consists of Turkish and English abstracts of the articles and keywords of those articles which are published in or out of Turkey. In this study we aimed to reveal the topics which are mostly in use by Turkish scientists of those areas and distributions of articles published at different sources and indexed by TAD.

Methods: The material indexed on TAD files were classified and counted. Articles, the major part of the database, were selected and further evaluated.

Results: The contents of all of the material indexed on TAD were: 7245 articles, 656 theses and 299 textbooks and other publications. Classified topics were distributed over fifty main titles and most studied topics were found as variations (14.1%), drug effects and toxicology (13.1%), neuroscience (8.1%), circulatory system (5.3%) and osteology (5.1%).

Conclusion: Knowledge of the scientific intentions of national scientists is valuable for acquiring a wide perspective for every academician who works on relevant areas. The database has been growing up in the due course. It has a capacity of 8200 publications now, and the target population has broadened from the Turkish anatomists to the scientists all over the world.

Key words: Article topics, anatomical database, anatomical sciences, medical indexing.

P-30

The effects of maternal body mass index on fetal biometric parameters in fetal period

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Objective: To study the effects of maternal body mass index on fetal development in prenatal period.

Methods: 334 pregnant women, whose age range was between 19 and 44 (average:26.4) and who were in different weeks of pregnancy (ranging from the 14th week to the 40th), took part in the study. Pregnant women were given the necessary information about the study and consent forms were. Fetuses with anomalies and developmental retardation, and also twin fetuses were not included in the study. Pregnant women were divided into three groups by their body mass index: The first group (n: 105): those who had an average body mass index of 20–24.9. The second group (n:159): those who had an average body mass index of 25–29.9. The third group (n: 70): those who had an average body mass index of 30–34.9. Parameters for fetal head circumference, biparietal diameter, abdominal circumference and femur length were determined. In addition, the average of fetal parameters was found by group, by week, trimester and month.

Results: Standard deviations and averages for the parameters by week, trimester and month were determined. The correlation between parameters and gestational age was meaningful ($P<0.001$). The correlation between the mother's weight and fetal parameters was meaninful, too ($P<0.001$). While there was

a difference in parameters between groups when they were compared by trimester and by month ($p<0.05$), no difference was found in parameters when groups in the same month and trimester were compared ($p>0.05$).

Conclusion: In conclusion, the maternal weight increased, it was found to increase the values of fetal parameter as well and maternal overweight during pregnancy might have negative effects on fetal development. With respect to fetal development, maternal overweight during pregnancy must be avoided. Consequently, we believe that the data obtained in this study are of importance for fetal development in during the fetal period.

Key words: Body mass index, fetal biometry, sonography, pregnancy, fetal development.

P-31

The analysis of long and short period after overiectomy on rats femur with using three point bending test

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Objective: The overiectomized (OVX) rat is considered as an appropriate model for investigating about human postmenopausal osteoporosis because of many similarities in their pathophysiological mechanism. Although female rats loose bone after overiectomy, the changes are subtle and take several months to develop the bone loss damages on biomechanical and histological characteristic in OVX rats. The goal of the study is to investigate the differences of biomechanical characteristic of rat femurs in time after ovariectomy bu using three point bending test.

Methods: In this study, 45 female Wistar rats were used. The animals were divided into three groups as Control (n=15)(K), overiectomized 12 weeks (n=15) (OVX-12) and overiectomized 20 weeks (n=15) (OVX-20). Thirty rats in OVX-12 and OVX-20 groups underwent bilateral overiectomy after being anesthetized. The animals had access to standard laboratory chow and water ad libitum. OVX-12 and OVX-20 groups were sacrificed after 12th and 20th week respectively by overdose of urethane anesthesia. Femurs were collected for biomechanical analysis. Three point bending tests were used as a biomechanical analysis and flexural strength was calculated.

Results: Our result revealed that flexural strength value of K group was higher OVX-12 and OVX-20 group ($p<0.005$). Additionally, flexural strength value of OVX-12 was higher than OVX-20 group because of 12 weeks of osteoporosis ($p<0.005$).

Conclusion: In the present study, increased bone deformation was clearly seen in 20th week compared to 12th week after overiectomy. Additionally, biomechanical parameters as flexural strength in three point bending test deteriorated long term period after 20 weeks of overiectomy.

Key words: Osteoporosis, overiectomy, femur biomechanics.

P-32

Assesment of the calcaneal angles on the lateral radiographs

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Objective: Calcaneal angles were measured and evaluated on the the lateral graphy.

Methods: Direct lateral radiographs of the 32 calcaneus were taken in Department of Anatomy Laboratory. Reference lines drawn on the radiographs taken and Gissane and Böhler angles values were measured.

Results: The mean Böhler angle was 28.40±4.50 (min 190 – max 400) and the mean Gissane angle was 107.60±6.40 (min 990 - max 1370) on the radiographs. In this study, there were no differences between the sides ($p<0.05$).

Conclusion: Calcaneus angles different races and communities in terms of the age, sex and sides may be variable. Displacement of fractures of the calcaneus bone, is evaluated with the reduction of Böhler and Gissane terms. In this respect, our study showed the wide range of values. Calcaneus fracture displacement in the assessment and Gissane and Böhler angles are done with lower limit. Particularly important in this respect is the lower limit of this value has to be known in every society.

Key words: Calcaneus, Böhler angle, Gissane angle.

P-33

Estimation of volume using the Cavalieri principle on magnetic resonance images

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Objective: The released signals of hydrogen ions due to their stimulation by sound or radio waves are converted into images by the computers. The obtained images appears in a range from black to white. During this procedure the radio waves are sent to the tissue and turning signals converted into images. Thickness dimension loses and slabs are converted into profiles. The volume of tissues and structures are estimated using the obtained images. However, some of the rules should be regarded to have reliable estimates. In the present study we aimed to make the general evaluation of our previously published studies.

Methods: Magnetic resonance images were obtained from different tissue and organs with changing thicknesses. The volumes of structures were estimated using the Cavalieri principle of stereological techniques. The point counting and planimetry techniques were applied for this purpose. Moreover, the estimates were done by different observers. Therefore, inter-observer variance was also investigated.

Results: The estimated volume was affected by the section thickness but not by the sectioning plane. Even thought, no difference was observed between the point counting and planimetry methods the former was more rapid approach. The obtained values did not show differences between the observers.

Conclusion: The data obtained by the Cavalieri principle was not affected by the observers, orientation and applied method. However, they are affected by the section thickness. For this reason, a constant section thickness should be used for all examined subject or a correction factor that is obtained as the result of a gold standard study should be applied to convert the values into normal.

Key words: Magnetic resonance, stereology, volume, Cavalieri principle, section thickness.

P-34

The measurement of the dimensions of foramen ovale and foramen rotundum in trigeminal neuralgia on CT

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Objective: The foramina rotundum and ovale are crossed by the maxillary and mandibular nerves respectively. Previous studies have reported that both foramina are signicantly narrower on the right side.Thus, trigeminal nevre entrapment occurs more often on the right side leading a higher incidence of trigeminal neuralgia on that side of the face. The purpose of this study was to compare sizes of the foramen ovale and rotundum in trigeminal neuralgia patients and healthy individuals.

Methods: Twenty one trigeminal neuralgia patients and tweny four healthy cases were included in this study. The dimensions of the foramen ovale and foramen rotundum on coronal sections on CT images were examined.

Results: The mean sizes of the foramen rotundum on the right and left sides were 3.04x3.2 mm and 2.8x2.9 mm in trigeminal neuralgia patients and 2.4x3.2 mm and 2.5x3.1 mm in healthy cases. The mean sizes of the foramen ovale on the right and left sides were 4.8x6.04 mm and 4.9x5.5 mm in trigeminal neuralgia patients and 3.7x8.2 mm and 4.1x7.6 mm in healthy individuals. The dimensions of left and right foramens were not significantly different in both trigeminal neuralgia patients and controls ($p>0.05$).

Conclusion: This study revealed that the sizes of foramen ovale and rotundum are highly symmetrical in both groups, suggesting that sizes of the foramina are not associated with the occurence of trigeminal neuralgia.

Key words: Trigeminal neuralgia, foramen ovale, foramen rotundum, CT.

P-35

Demonstration of the Adamkiewicz artery on a cadaver: case report

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The anterior radicular arteries contributing to the anterior spinal artery, one of them that occupied in the lumbar region remarkably larger than others and called as artery of Adamkiewicz (AKA). This artery is originated at the level of the T9-T12 segments in 75% cases. Mentioned radicular artery associates with a lower or upper lumbar root most frequently on the left side. Ischemeia is the most important cause of injuring the spinal cord. AKA can get damage during the

various operational intervention of the thoracoabdominal region and this condition can be result by ischemia of the spinal cord and also cause serious pathologies such as paralysis and paraplegia. Especially, during the operation of thoracoabdominal aortic aneuvrysm, protecting and knowing its relation and anastomisis with the intercostal and lumbal arteries in detail will prevent complications. In our study, during routine dissection, AKA was observed on the left side of the 45 year-old male cadaver and because of the clinical importance that mentioned above it is compared with and discussed related studies.

Key words: Adamkiewicz artery, cadaver, spinal cord.

P-36

Nutrient foramen and cortical thickness morphometric evaluations of fibula used as a source of vascularized bone graft

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Objective: Fibula is a frequently used bone graft for structural support in various orthopedic and traumatologic pathologies such as osteonecrosis of femoral head, defective non-unions of long bones, congenital pseudoarthrosis of tibia, vertebral fractures, and sacral defects. Transfer of fibula with its vascular structures is an geniune microvascular procedure that increases viability of graft, augments vascularization in recipient site. Therefore preoperative information about the structural capabilities and vascular properties of fibula is important for surgeons planning vascularized transfer of fibula.

Methods: In this study, 90 (50 left, 40 right) dry fibula from collection of Dokuz Eylül University Department of Anatomy were used. The age and gender of the bones were not noted. Diaphysis of the fibulas were divided into three equal parts. The presence, number, localisation, direction and diameter of nutritional artery in each part was recorded. The length, diameter and cortical thickness in each part of fibula were measured from plain radiograms. Then the correlation between diameter of nutrient arteries and thickness of fibula was calculated.

Results: Nutritional artery was located in the proximal part of middle one-third in 92% of fibulas. There were one nutrient artery in 90%, two arteries in 8%, and three arteries in 2% of fibulas. Significant correlation between the diameter of fibula and diameter of nutrient artery was found.

Conclusion: This study shows us that the thickness of fibula may be an indicator of a wide nutrient artery which is very important from a surgical point of view where vascularized fibula is intended to be used.

Key words: Fibula, vascularized bone graft, anatomy, morphometric.

P-37

Palatine tonsil volume estimation using different methods

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Objective: This study was carried out to measure the volume of the palatine tonsil in otorhinolaryngology outpatient clinic with complaints of adenotonsiller hipertrophy and chronic tonsillit who undergone tonsillectomy.

Methods: For this purpose we used three different methods [real volume, Cavalieri and HWT (H: tonsil height, W: tonsil width and T: tonsil thickness)] of palatin tonsil volume determination. The correlation of each parameter with tonsil size was assessed. After tonsillectomy, palatine tonsil volume was measured by real, Cavalieri and HWT.

Results: Mean palatine tonsil volume by fluid displacement was 2.96±2.2 cm3, by the Cavalieri principle (point–counting) was 3.74±1.89 cm3 and by the YGK was 5.06±3.60 cm3.

Conclusion: The three methods correlated well with each other (r=0.971, 0.852, 0.899). In addition, an excellent agreement was found among three methods volumetric techniques (p=0.167, p>0.05).

Key words: Palatin tonsil volume, real volume, stereology, point counting.

P-38

Lateral approach to the ankle and distal leg fractures

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Objective: Open reduction and internal fixation (ORIF) via anteromedial incision is usually preferred surgery technique to

the ankle and distal tibia fractures. But when the fibular stabilization became a necessity, generally an addition lateral incision was performed during this procedure. And also wound complications and soft tissue infections are common after this procedure. Therefore lateral approach to the distal tibia and fibula became preferred technique recently. The aim of this study was to evaluate the risk of neurovascular complications in lateral approach.

Methods: Dissections were performed at 16 formalin fixed and 6 fresh frozen feet. All measurements were performed with a digital caliper (0.1mm).

Results: Superficial peroneal nerve and its branches were determined and a safe incision line was defined. Also branches of the posterior tibial and fibular arteries which pinched the interosseous membrane and reached the anterior compartment of leg were defined.

Conclusion: The knowledge of these neurovascular structures can be important to prevent the complications during lateral approach which is an alternative technique to the anteromedial approach to the ankle and distal leg.

Key words: Ankle, pilon, fracture, surgical approach, ORIF.

P-39

Complex variation of median nerve: a case report

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Objective: Variations of the vessels and nerves in the arm are common. We saw complex variation of median nerve in the right arm of an adult male cadaver.

Case: During routine education dissections of axillary region, a complex variation was observed in the right arm of an adult male cadaver. Lateral cord continued as lateral root of median nerve without giving off musculocutaneous nerve and it formed median nerve joining with medial root of median nerve which arises from medial cord. There was a communicating accessory branch 2.5 cm long running obliquely between the cords which form the median nerve. Corcobrachialis muscle was innervated by a thin branch arising from lateral cord. We observed that the median nerve divided into two branches at a point 9 cm distal to its formation. First branch supplied motor innervation to biceps brachii, the second branch gave motor branch to brachialis muscle 7 cm distant from the division and continued as lateral antebrachial cutaneous nerve. Main trunk passed through the cubital fossa and ran along the forearm following the normal course of median nerve.

Conclusion and Results: Peripheral nerve injuries due to traffic accidents, occupational accidents and firearm injuries are increasingly encountered. A good knowledge of classic and variational anatomy of upper extremity peripheral nerve patterns is essential for surgical procedures. Variations of median nerve, which are frequently observed, can increase possibility of sequelae and potential complications in consequence of erroneous clinical practice during surgical procedures and peripheral nerve blocks. Good knowledge about the variations of median nerve and musculocutaneus nerve provides good results concerning the plastic and reconstructive surgical operations on the arm. We think it is important that clinicians performing surgical procedures or nerve blocks in this region should consider this variation in order to avoid failures and complications.

Key words: Musculocutaneous nerve, median nerve, variation, dissection.

P-40

Evaluation of variations and asymmetry in cerebral sulci

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Objective: Functional asymmetry (dominancy) in cerebral structures which emerges during postnatal development and related to neural development is a known feature. It is a matter of curiosity that whether there is a convergence between the morphological asymmetry and the functional asymmetry, and is significant in surgery. The aim of our study was to investigate the variations of several sulci on the lateral aspect of the cerebrum in regard to main sulci and related reference key points and to compare morphometric measurements of the hemispheres.

Methods: Our study was carried out on forensic autopsy cadavers having no cerebral damage. A total of 100 cerebral

hemispheres from 50 cadavers were examined. Length of several sulci on the lateral aspect of the hemispheres and the distances between the sulci and nearby sulci and reference key points were measured. Digital compass and folding plastic ruler were used for measurements. Encountered variations were examined and photographed.

Results: Variations: Superior frontal sulcus (SFS), inferior frontal sulcus (IFS), superior temporal sulcus (STS), precentral sulcus (preCS) and postcentral sulcus (postCS) were found to be discontinuous in 60%, 46%, 41%, 84% ve 70% of the hemispheres, respectively. Asymmetry: Many differences in morphometric measurements were seen between left and right hemispheres. However, only four of them showed statistically significant results as follows: the distances between SFS posterior end and longitudinal fissure (right 26.52±6.085 mm, left 22.36±4.41 mm, p=0.000), STS posterior end and lateral sulcus posterior end (right 27.50±5.89 mm, left 34.28±5.56 mm, p=0.000), as well as lengths of external occipital fissure (right 27.94±4.2 mm, left 34.00±4.56 mm, p=0.000), and discontinuous course of STS (right 26%, left 56%).

Conclusion: It is difficult to recognize cerebral sulci during surgery and variations are frequently encountered. Furthermore, there is usually a morphological asymmetry between the right and left hemispheres for any individual. Thus, we think it may be important to consider variations and asymmetry in neurosurgery as well as in anatomy education.

Key words: Cerebral hemisphere, sulcus, variation.

P-41

Morphometric measurements of cerebral sulcus in autopsy cases

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Objective: Cerebral sulci are anatomical structures that limits gyri and them for recognition by other gyri separate. Also, they are known as the main microanatomic limits in neurosurgery and surgical corridors that were used to reach lesions under sulci. In our study, some sulci in the lateral aspects of the Cerebrum, the main sulci to be associated with related some references points was aimed to make morphometric measurements.

Methods: 100 cerebral hemispheres, belong to forensic autopsies of 50 cadavers, were examined. The lateral face of cerebral hemispheres seen in some sulci length with sulci neighbors sulci and the distance between the reference points of the measurements were made.

Results: Lateral sulcus (LS), anterior, and posterior ascending branch lengths were 22.98±7.43, 27.62±6.24, and 76.75±10.10 mm; fissure occipitalis externa in length 30.97 ± 5.32 mm were observed. Lateral sulcus (LS), anterior, and posterior ascending branch lengths were 22.98±7.43, 6244, and 27.62±76.75±10.10 mm.; Fissure occipitalis externa 30.97±5323 mm in length. as was observed. For centralis sulcus (CS), superior - inferior Rolandic (IR) point, CS - LS and IR - Anterior Sylvian (AS), the distance between points was found as 94.51±7.42, 5.170±3.99 and 29.59±5.09, respectively. For sulcus frontalis superior back-end with the sulcus precentralis (preCS), CS and interhemispheric fissure (IHF), the distance between them was 2.500±5.74, 16.46±8.81 and 24.44±5.68 mm; sulcus frontalis inferior posterior tip preCS, CS, LS and AS point, the distance between them was measured as 3.880±4.98, 17.13±6.40, 33.35±5.66 ve 39.44±6.83 mm. For front-end sulcus intraparietalis with postcentralis sulcus, the distance between CS and IHF was found 4.400±7.33, 18.78±8.58 and 32.03±7.42 mm; the distance between back sulcus temporalis superior distance between the tip-LS was 30.89±66.44 mm was found.

Conclusion: Some of our measurements with literature as incompatible with the observed one. Neurosurgery in the education process and therefore in the anatomy of racial and territorial changes would be important to consider as well.

Key words: Cerebral hemisphere, sulcus, morphometry.

P-42

Immunohistochemical investigation of the effect of the green tea and vitamin E to the vascular structure in streptozotocin induced diabetes mellitus in rats

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Objective: Diabetes mellitus is a cronic metabolic disease due to an absolute or relative lack of insulin, caused by the immunologic mechanisms responsible for β cell destruction.

Tissue damage is caused by the free radicals mainly superoxide anions and decreased antioxidant mechanism. Our aim was to investigate the possible effect of the green tea and vitamin E on cell proliferation and apoptosis in streptozotocin induced-diabetic rats vascular structure.

Methods: In this study, 54 Wistar albino rats, divided into nine different group (Normal control, Na sitrat, STZ (50 mg/kg), STZ + green tea (300 mg/kg), Green tea, STZ + Vitamin E (0.4 mg/kg), Vitamin E, Green tea + vitamin E, STZ + green tea + vitamin E). After 6 weeks of the streptozotocin (STZ) injection, group 4, 6 and 9 received orally green tea and vitamin E for 4 week. At the end of the ten week, all the animals were anaesthetized and then, they were perfused with 1.25% glutaraldehyde and 1% paraformaldehyde solutions. Following perfusion, the vessels were removed and fixed in neutral formalin for 72 hours and processed for paraffin embedding. Sections of 4-5 micrometers thickness were processed for polylysin microscope slides and immunohistochemical examination of anti-AT1, anti-PDGF and anti-eNOS were done. Slides were examined with Photo-light microscope (DM4000B Image Analyze System and, Leica, Germany) and Leica DFC280 plus camera.

Results: Immunohistochemical investigations reveals that green tea has more protective effect than the vitamine E on angiotensine induced damage, while vitamine E is more effective and protective on PDGF expression related damage. Both antioxidant showed a maximum protective effect on nitric oxide sentetase mechanism when they are used together.

Conclusion: All our findings pointed out that several mechanisms are responsible for the oxidative stress induced tissue damage in diabetes and one antioxidant is not enough to prevent these changes. So, it is necessary to investigate the combination of several antioxidant with different effect in diabetic people.

Key words: Diabetes mellitus, anti-AT1, anti-PDGF, anti-eNOS, green tea.

P-43

Ultrastructural investigation of the effect of the green tea and vitamine E to the vascular structure in streptozotocin induced diabetes mellitus in rats

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Objective: Diabetes mellitus is a cronic metabolic disease due to an absolute or relative lack of insulin, caused by the immunologic mechanisms responsible for β cell destruction. Tissue damage is caused by the free radicals mainly superoxide anions and decreased antioxidant mechanism. Our aim was to investigate the possible effect of the green tea and vitamin E on cell proliferation and apoptosis in streptozotocin induced-diabetic rats testis tissue.

Methods: In this study, 54 Wistar albino ratsb were divided into nine different group (Normal control, Na sitrat, STZ (50 mg/kg), STZ + green tea (300 mg/kg), Green tea, STZ + Vitamin E (0.4 mg/kg), Vitamin E, Green tea + vitamin E, STZ + green tea + vitamin E). After 6 weeks of the streptozotocin (STZ) injection, group 4, 6 and 9 received orally green tea and vitamin E for 4 week. At the end of the ten weeks, all the animals were anaesthetized and then, they were perfused with 1.25% glutaraldehyde and 1% paraformaldehyde solutions. At the end of the third month, vascular samples were removed and sections were collected for ultrastructural studies. Semithin sections were cut and stained with toluidin blue and examined with a BH2 Olympus light microscope. Ultra-thin sections were stained with uranyl-acetate and lead-citrate and examined with a Carl Zeiss EM 900 transmission electron microscope.

Results: Ultrastructural investagion reveals that vitamine E has a protective effect on endothelial cells and try to prevent vasculary wall damage, while green tea prevent the formation of the foab cells and helps to the organisation of the internal elactic membrane. Thus, both antioxidant helps to the protection of the vascular structure.

Conclusion: All our findings pointed out that several mechanisms are responsible for the oxidative stress induced tissue damage in diabetes and one antioxidant is not enough to prevent these changes. So, it is necessary to investigate the combination of several antioxidant with different effect in diabetic people.

Key words: Diabetes mellitus, artery, green Tea, Vitamine E, ultrastucture.

P-44

New illustrations to better explore the pelvic and perineal anatomy

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Objective: Pelvis and perineum have a complex anatomy; both are quite hard to understand. Furthermore, conflicting informa-

tion and illustrations are occasionally encountered within the available textbooks and anatomy atlases. Thus, the objective of this study was to bring in new and original illustrations to help to improve the understanding of the pelvic and perineal anatomy.

Methods: All available anatomy textbooks and atlases, as well as current literature were reviewed carefully. Magnetic resonance and computed tomography scans of healthy individuals were also used to produce new illustrations. Watercolor and water-based acrylic drawings were scanned to get digital versions. Finally, using Adobe Photoshop CS2 software, the illustrations were edited for better display of fine details.

Results: Anal and urogenital triangles, skin, subcutaneous tissue, gluteus maximus with its fascia, ischioanal fossa, the layers of pelvic and urogenital diaphragms have been illustrated in detail in six plates. One additional sagittal section was drawn to ease the orientation.

Conclusion: We hope these new illustrations would help understanding the pelvic and perineal anatomy, and contribute to the available bibliography on this subject.

Key words: Pelvis, perineum, ischioanal fossa, urogenital diaphragm, pelvic diaphragm.

P-45

An inferior mesenteric artery supplying most of the colon: report of a case

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Objective: We present a case of an inferior mesenteric artery supplying most of the colon.

Methods: We studied a 74 year old male cadaver at the İstanbul Faculty of Medicine Department of Anatomy.

Results: During routine abdominal dissections for education, we observed the absence of right and middle colic arteries. An unusual branch of the inferior mesenteric artery, reached proximally and terminated as it anastomosed with the iliocolic artery. The inferior mesenteric artery in the case supplied; descending, transverse and ascending colons along with the right and left flexures.

Conclusion: We believe that this rare variation has importance for surgeons and anatomists.

Key words: Inferior mesenteric artery, Variation.

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Microanatomical study of middle cranial fossa: measurements of distances between anatomical landmarks

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Objective: The objective of this study was to determine the distances between anatomical landmarks in the floor of middle cranial fossa (MCF).

Methods: We used 24 cranial bases (48 specimens), 38 right-side and 33 left-side temporal bones (119 totally). The distances from "transverse plane passing through the posterior point of processus zygomaticus" (PPZP), to "foramen spinosum" (FS), "foramen ovale" (FO) and "hiatus canalis nervi petrosi majoris" (HCNPMj) were measured. "Margo superior partis petrosa (MSSP) length, distances of MSSP, its medial and lateral edges to HCNPMj were also detected.

Results: The distances from the PPZP to FS, FO and HCNPMj were measured as follows: 7.77±2.53 mm (min-max: 3.28–13.94), 10.05±2.77 mm (min-max: 3.59–16.91) and 4.27±2.38 mm (min-max: 1.39–10.44) relatively. Length of MSPP was measured as 56.29±4.37 mm (min-max: 46.07–67.10). The distance between HCNPMj and MSPP was 11.31±1.95 mm (min-max: 6.91–19.89). The HCNPMj was located at middle part of the MSPP in 92.4% of the cases, and at medial part in the rest of the cases. The HCNPMj was at a distance of 23.71±2.65 mm (min-max: 16.36–29.61) to medial edge of MSPP and 36.77±3.82 mm (min-max: 28.44–48.15) to lateral edge of MSPP.

Conclusion: Morphometric measurements related to landmarks of MCF may help in surgical approaches.

Key words: Fossa cranii media, landmark, surgery, anatomy.

P-47

Location of eminentia arcuata in relation to anatomical landmarks of middle cranial fossa

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Objective: The objective of this study was to determine the distances between eminentia arcuata (EA) and other landmarks in the middle cranial fossa.

Methods: We used 24 cranial bases (48 specimens), 38 right-side and 33 left-side temporal bones; 119 specimens overall. The distances of EA to "sulcus nervi petrosi majoris" (SNPMj), anterior edge of EA to posterior edge of "processus zygomaticus" (PZ) and to transverse plane passing through the posterior point of PZ were measured. The location of the EA in accordance with "margo superior partis petrosa" (MSPP) and "hiatus canalis nervi petrosi majoris" (HCNPMj) were also detected.

Results: The distance of EA to SNPMj was measured as 27.55±5.06 mm. This length indicates the relationship between the EA and the entrance point of the internal carotid artery (ICA) to the cranium. Posterior edge of PZ to anterior edge of EA was at distance of 21.05±3.15 mm and anterior edge of EA was located 8.15±3.71 mm behind transverse plane passing through the posterior edge of PZ. Distance and angle between anterior edge of EA and MSPP were 10.68±2.80 mm and 55±24º relatively. The EA was located at a distance of 10.68±4.32 mm and at an angle of 115±29º in relation to HCNPMj.

Conclusion: Knowledge of the relationships of surgical landmarks is principle during surgery and the results of this study defines the location of the EA in respect of the other landmarks in the FCM.

Key words: Eminentia arcuata, fossa cranii media, anatomy.

P-48

Anatomy of the lateral canthal tendon

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Objective: The purpose of this study was to demonstrate the lateral canthal tendon attachments and impact on clinical practice.

Methods: The lateral canthal tendon was revealed by bilateral anatomic dissections in twelve adult male and five female preserved cadavers. The insertions of the superficial and deep heads of the lateral canthal tendon were revealed.

Results: The dissections of the superficial and deep heads of the lateral canthal tendon were attached to the zygomatic bone. The dissections showed that the fibers of the lateral canthal tendon inserted into the periosteum and covered the connective tissue.

Conclusion: The lateral canthal tendon attaches the tarsal plates to Whitnall's tubercle and nearest connective tissue. The details of lateral canthal tendon anatomy are very important for functional results of surgery. The surgeons should be awareness of the attachment and location of the lateral canthal tendon.

Key words: Lateral canthal tendon.

P-49

Evaluation of oblique fissure in lateral chest radiographs

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Objective: Although majority of dust particles inhaled with air are evacuated, some of them remain in lung tissue seized by macrophages and transferred to connective tissue between alveoli, acinus and lobus and partially remain there. The quantity of dust is higher among people working in coal mines. Anatomical trace of oblique fissure in lateral chest radiography of people who formerly worked and retired from coal mines having coal mine worker pneumoconiosis (CWP) and people who applied policlinics with other reasons but had lung graph taken were compared and it was intended to put forward the possible differences.

Methods: This study was performed between April 2009 and September 2009 by participation of 120 voluntary patients. In this study, fissure trace differences between groups were examined with geometric morphometrics method. Eleven reference points determined previously on 120 individual lateral chest radiography files are marked by tpsDig2 software. This process was repeated for each sample to create a txt file containing reference points of 120 examples. Statistical analysis of txt files were carried out by Morpheus software.

Results: The oblique fissure traces of group-1 with CWP cases were significantly different ($p<0.05$) from control groups, group-2 and group-3 cases. This difference was suggested to occur by the replacement of fissures by the nodules which were constituted due to the accumulation of dust within the lungs in time.

Conclusion: The reason of this difference is considered to be originated from the repression of the fissure due to the nodules built up with the dust inhaled to lungs by time.

Key words: Lateral chest radiography, oblique fissure, CWP, geometric morphometrics, reference points

P-50

Brachioradial artery: review and a case report

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The arterial network of the upper extremity belongs to the most variable areas of the human body. The terminology of the variants is not stable. We dissected one hundred and thirty upper extremities (cadaverous material, Czech population) fixed with formaldehyde at the Department of Anatomy. During the dissection, a variant of the brachioradial artery (arteria brachoradialis) was observed – it runs as the radial artery, stemming within the axilla from the axillary artery or anywhere within the arm from the brachial artery. Then it passes the cubital fossa and continues as the proper radial artery, situated on the lateral side of the forearm. Such variation corresponds to the embryologic parent as a persistent high origin of the radial artery (Singer). The incidence in our study was 1.25%. We presented a quite rare type of arterial variation of the upper extremity vasculature. We suggest to denominate it as the brachioradial artery and recommend to follow a clear and simple nomenclature suggested by Rodríguez-Nidenfuhner in 2003.

Key words: Terminology, brachioradial artery.

P-51

Nomenclature of the lower extremity veins

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The veins of the lower extremity are a very variable part of the human body, resembling an unorganized network of venous canals. The last revision of the Latin anatomical terminology, Terminologia Anatomica (TA), was issued by the Federative Committee on Anatomical Terminology (FCAT) under the auspices of the International Federation of Associations of Anatomists (IFAA) in 1998 and did not reflect the necessity of denominating more veins of the lower extremity for the needs of clinicians. In 2001, during the 14th World Congress of the International Union of Phlebology, a consensus was laid to extend and complete the nomenclature of the lower extremity venous system, under the auspices of Federative International Committee on Anatomical Terminology (FICAT) and IFAA. Several terms were changed and until that time unnamed veins received new denominations, corresponding to their anatomical positions, topographic relations and clinical relevance. Seven new terms were added and six were changed in the superficial system, fourteen were added and four changed in the deep system part and the perforating veins were termed with thirty-five items in six groups. Totally, the new version contains eighty-nine official Latin terms and English synonyms in total. Eponyms were omitted except of few stated in the parentheses. The Terminologia Histologica (TH), published in 2007 and Terminologia Embryologica, planned to be published this year, also extend this area.

Key words: Terminology, lower extremity veins.

P-52

The anterior scalen muscle with two bellies between which the superior trunk passes

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Case: During educational dissections in our department, it was observed that the right anterior scalene muscle had two bellies, and the superior trunk of the brachial plexus passed between them in a 65-year-old male cadaver. The subclavian artery, the middle trunk and the inferior trunk passed between the anterior and middle scalene muscles, while the subclavian vein passed in front of the anterior scalene muscle. The anterior belly of the anterior scalene muscle took its origin from the transverse process of the fifth cervical vertebra (C5), and the posterior belly from the C3 and C4; those two bellies united distally and attached to the first rib.

Discussion and Conclusion: Scalene muscles can be subject to variation regarding the number of their attachments on vertebrae and costae, and they can show different patterns in joining of its fasciculi. The anterior and middle scalene muscles can exchange their fibers, or – as in our case – anterior scalene muscle with two bellies can be found. In the literature it was reported that the superior trunk passes between the two bellies of the anterior scalen in 10% of the cases. In cases with two bellies, arteries or nerves can pass between those bellies and can be compressed, and this compression can cause clinical symptoms. In the differential diagnosis of sensation problems of the upper extremity, these kinds of variations should be kept in mind.

Key words: Scalene muscle, brachial plexus, anatomy.

P-53

The right aortic arch in computed tomography: a case report

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Right aortic arch has two major types: First type: Right aortic arch with mirror imaging branching usually associated with congenital heart disease. Second type: Right aortic arch with aberrant left subclavian artery. Other right aortic arch variants occur including retroesophageal innominate artery and right arch with isolated left subclavian artery often arises from a ductus arteriosus. The right aortic arch was observed that in thorax computed tomography of a 50-year-old man. In this case, the triple anomaly of the right aortic arch consisted of: 1. the presence of a left brachiocephalic trunk, 2. the absence of a brachiocephalic trunk on the right side and 3. separate origins of the arteries on the right side, with the right common carotid artery preceding the right subclavian artery. Situs inversus and any other major vascular anomalies and congenital heart disease were not observed. Although right aortic arch was reported usually asymptomatic, dysphagia or stridor may occur. The importance of thorax CT in determining the vascular anatomy and its variations was emphasized with this case.

Key words: Right aortic arch, variation, brachiocephalic trunk.

P-54

Facial proportions and anthropometric facial analysis of the Turkish people

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Objective: This study has aimed to determine the prevalence of five different face types among Turkish people as to on facial indices, to assess the differences in facial proportions in sex and to establish anthropometric norms for Turkish people.

Methods: In this research, total of 200 healthy adults (100 females and 100 males) 25 to 35 years of age were examined. Using anthropometric landmarks, 12 horizontal and 13 vertical direct measurements were made on the faces with a millimetric compass. Results have been compared with 8 neoclassical canons and facial index.

Results: It has been viewed in the research that, the female entities (32%) are mostly concentrated in euryprosop facial type, for the male (29 %) mostly in leptoprosop. In the total evaluation of both groups, all the parameters were higher in the males except upper and lower lip height. Compared with both sexes, a significant difference has been found in all measurements except the upper facial width, eye-fissure width, nasal height, forehead height I and II (P<.001). Assessed to of the 8 neoclassical canons, the orbito-nasal proportion has been found to include the most proportional subjects (30%) followed by the orbital proportion (29%) and the nasoaural proportion (17%) in the female. Considering the male, the orbital proportion has been found to include the most proportional subjects (23%) followed by the orbito-nasal proportion (21%) and the nasoaural proportion (17%).

Conclusion: The data presented in this study may contribute to plastic surgeons and orthodontists and may objectively determine the relationships between facial structures for different face types.

Key words: Facial anthropometric norms, facial index, facial proportion.

P-55

Morphometric MRI evaluation of corpus callosum and ventricles in normal adults

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Objective: To determine the normal values of subregions of corpus callosum and ventricles in healthy adult people in our population using magnetic resonance imaging (MRI) and to establish gender differences.

Methods: Magnetic resonance imaging of fifty two healthy individuals (29 female, 23 male) aged 20 to 50 years were obtained. The measurements were performed from MRI on a workstation. The midsagittal images were used for measurements of the subregions of corpus callosum and axial images were for lateral and third ventricles. Results: The mean values of the widths of genu, body, splenium, and height of the corpus

callosum were found as 13.28±2.10 mm, 7.64±1.07 mm, 12.52±1.35 mm, and 25.47±2.20 mm in females respectively whereas the same measurements were as 13.23±2.41 mm, 6.89±2.12 mm, 11.90±1.94 mm, and 25.03±3.38 mm in males respectively. Moreover, the mean value for the longitudinal dimension of the brain was 150.12±5.04 mm, while the mean value for the longitudinal dimension of the corpus callosum was 71.27±3.70 mm in females. Additionally, the mean frontal horn width of the lateral ventricle and transverse inner diameter of the skull were found 34.06±3.05 mm, 130.76±6.71 mm in females and 34.03±2.78 mm, 129.96±10.61 mm in males respectively. Due to these measurements, Evans index which is reflecting the lateral ventricle enlargement, was estimated as 0.25±1.90 and 0.25±1.14 in females and males respectively. According to our last measurement result, the mean value for the third ventricle width was 3.79±0.85 mm in females and 4.12±0.94 mm in males.

Conclusion: There are differences between the averages of some indices of corpus callosum of our population and the other populations.

Key words: Corpus callosum, lateral ventricle, third ventricle, MRI.

P-56

Investigation the body fat distributions by using bioelectrical impedance assay in elderly people

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Objective: Developing World population is getting older. The effects of obesity and body fat distribution in elderly population are associated with many chronic disorders. Therefore, the monitoring of elderly health becomes an important issue. Bioelectrical impedance analysis (BIA) is an easy, safe, non-expensive and non-invasive method to monitor elderly health. The purpose of this study is to determine body mass index (BMI), body fat (FM) ratio and fat free mass (FFM) of elderly population by using BIA.

Methods: Hundred subjects (60 female, 40 male) over 65 years of age who are living in İzmir Narlıdere Rest and Nursing Home were included in this study. All subjects gave written informed consent for participation in the study which was approved by the Ethical Committee of Adnan Menderes University, Aydın, Turkey. SECA 767 (Germany) was used to measure the weight and height of subjects with light clothing. Body fat ratio and fat free mass were determined by BIA 101 (Italy). All experimental data were statistically evaluated by using SPSS 14.0 program.

Results: The values of BMI, FM, FM%, FFM and FFM% in female participants were determined as 31.31±5.79 kg/m2, 33.00±11.17, 44.13±6.62%, 40.37±6.42 and 55.87±6.62%, respectively. For male participants, the values of BMI, FM, FM%, FFM and FFM% were measured as 29.12±5.90 kg/m2, 29.03±8.90, 34.99±5.53%, 52.65±7.62 and 65.00±5.53%, respectively. Comparison of these values according to gender suggests that the values of BMI, FM and FM% were significantly higher in women but FFM value were recorded higher in men.

Conclusion: BMI, body fat distribution and fat free mass are the important parameter according to reveal the chronic disorders and death risk in elderly. Compare to WHO values, our data were lower in male and almost the same in female participants which is suggested that our subjects have better care and treatment. Finally, BIA can be used determining the possible relationship between elderly people and chronic diseases.

Key words: Old Age, BIA, body mass index, body fat ratio, fat free mass.

P-57

Assessment of BIA measurements in elderly with hypertension and type 2 diabetes

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Objective: Bioelectrical impedance analysis (BIA) is a noninvasive, reproducible and portable method for determining changes in body composition and nutritional status of subjects. The purpose of this study is to evaluate elderly subjects with hypertension and type 2 diabetes by using BIA measurements.

Methods: One hundred elderly living in Narlıdere Rest and Nursing Home (60 women and 40 men) were included in the study. Each participant filled out a questionnaire about his/her

demographic and health status and was examined by physician. Height and weight were measured by SECA 767 (Germany). Body composition was measured by BIA 101 (Italy) and by using these data, basal metabolism (BM), fat mass (FM) percentage and fat free mass (FFM) percentage were calculated by Bodygram 1.3Ô (Italy) program. Measurements were taken twice by trained researchers and results were recorded as mean±SD. Results were analyzed by SPSS 14.0 program. Descriptive statistics and $\chi 2$ were used as statistical analyzes.

Results: Of the total 73 had hypertension and 22 had diabetes, basal metabolism value, FM and FFM percentages of hypertensive elderly were 1291.19±231.22, 40.89±7.90, 59.10±7.90 respectively while these values were 1300.39±224.14, 39.50±6.97, 59.10±7.90 for non-hypertensive elderly. There was no statistical difference between the values of BM, FM% and FFM% of hypertensive and non-hypertensive elderly ($p>0.05$). Basal metabolism value, fat mass and far free mass percentage of type 2 diabetic elderly were 1314.03±232.07, 43.54±6.63 and 56.45±6.63, respectively while they were determined 1289.52±227.42, 39.60±7.72 and 60.39±7.72, respectively, for non-diabetic elderly. No statistical difference between BM value, FM% and FFM% of diabetic and non-diabetic elderly were determined ($p>0.05$).

Conclusion: The elements of body composition such as BM, FM%, and FFM% are very rapidly change in elderly who don't receive adequate care. We didn't determine any statistical differences of body composition elements between hypertensive and non hypertensive or diabetic and non diabetic elderly in this study. These data show that BM, FM%, and FFM% were preserved in elderly who receive adequate care, even if they have a chronic disorder. In conclusion, the increase in the numbers of well organized geriatric centers such as Narlıdere Rest and Nursing Home should help elderly to receive better care.

Key words: Elderly, hypertension, type 2 diabetes, bioelectrical impedance analysis.

P-58

Effects of innovative and participatory method and techniques on the learning process of anatomy laboratory courses

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Objective: In addition to conventional applications in anatomy lab teaching innovative and participatory learning techniques are needed to deal better with clinical diagnostic procedures in later years. Thus, objective of this study was to improve effectiveness of anatomy education during lab courses specially by searching the effect of unconventional applications such as three dimensional volumetric model shaping and computer assisted learning in forming the anatomy knowledge mind maps in students.

Methods: Three hundred medical students enrolled in the basic anatomy program were randomized into 6 groups of 50 students each: two groups used three dimensional sculpturing, two groups utilised computer assisted materials and the last two group have followed conventional methods according to the standard curriculum. Play dough and clay were used by the groups which were assigned to three dimensional sculpturing and the use of materials such as paint, wire and plastic were allowed in structuring the pieces. Computer assisted educational materials consisted of visual materials taken from various anatomy atlases which were converted into computerized flash cards and used for Q&A. At the end of the lab session and 1 and 3 weeks later the students were assessed by interviews, South East Thames scale and pretest-post test evaluation respectively. The results were compiled and discussed.

Results: At the end of the evaluation of six groups in three different categories and by using three different measurement criteria showed the superiority of innovative and participatory learning methods over conventional techniques. The highest sustainable recall rate was in the groups which used three dimensional sculpturing.

Conclusion: Innovative teaching methods are superior to conventional techniques. Standardization of all innovative methods and adding them to the conventional techniques will increase effectiveness in teaching.

Key words: Anatomy education, three dimensional, computer assisted, conventional, South East Thames scale.

P-59

Clinical implications at the master knot of Henry

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"Knot of Henry" is the term used for cross connection between the flexor digitorum longus tendon (FDLT) and flexor hallucis

longus tendon (FHLT) on the medial side of the sole of the foot. At the cross over, the tendon of FHL is crossed superficially by the tendon of FDL from the medial to the lateral side. It remains a site of interest as it allows tendon transfer without affecting the smooth movements of the foot. Recent changes in surgical treatment of acquired flat foot or tibialis posterior insufficiency (Goldner, 1985), congenital and acquired claw foot deformity (Freeney et al., 2001), sports (tennis) injuries have brought removed interest in the tendon arrangement. Thorough awareness regarding variable intertendinous digitations in this region play an important role in determining the importance of the specific tendon in correction of a specific deformity. O'Sullivan et al., 2005 have reported three types of tendon transfers at the site of knot: Type 1: slip from FHL to FDL; Type 2: slip from FDL to FHL; Type 3: slip from FDL to FHL and a slip from FHL to FDL. Here, we report the presence of two anomalous tendinous slips extending from the FDL to FHL, one slip lying proximal and the other lying distal to the crossover. This variation was encountered during the routine dissection carried out in the left foot of an elderly male cadaver. So, the present case can be added as a type 4 to the present classification. We conclude that the choice of tendon for transferring should be based on the clinical presentation of the patient at time of surgery and not the prevailing dogma.

Key words: Knot of Henry, flexor digitorum longus tendon, flexor hallucis longus tendon.

P-60

Aortic and pulmonary valve variations

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Objective: Normally there are three aortic and pulmonary semilunar valves. Monocuspid, bicuspid, quadricuspid and pentacuspid aortic veya pulmonary valves are the rare congenital anomalies.

Methods: This is a retrospective study. In the present study, a total number of 1925 autopsy materials obtained from Department of Forensic Medicine between 2005-2009 are investigated. The anatomical structure of aortic and pulmonary valves and the variations are examined. Furthermore, the origins of A.coronaria dextra and A. coronaria sinistra are studied.

Results: In the present study, we observed a variation in 17 of 1925 cases. In 9 cases (%0.4) bicuspit aort valve, in 1 case (%0.05) quadricuspid pulmonary valve, and in 1 case (%0.05) pentacuspid pulmonary valve was identified. A double originated A. coronaria dextra was observed in 6 cases (0.3%).

Conclusion: In the literature, there are some rare case reports seen in Turkey but a detailed study about aortic and pulmonary valves incidence is not available. We hope that a detailed study about the structure and the variations of the aortic and pulmonary valves and the incidence of these anomalies in Turkish population within the origins of the coronary arteries can be helpful for further clinical and anatomical researches.

Key words: Valve anomalies, bicuspid valve, quadricuspid valve, pentacuspid valve, origins of coronary arteries.

P-61

The clinical anatomy of foramen lacerum

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Objective: The anatomy of foramen lacerum has not been well defined previously. Additionally, there is no common consensus in the literature about the structures which pass or do not pass through the foramen. For this reason, we aimed to conduct an anatomical study evaluating the anatomy of foramen lacerum and to point its relation with the structures passing through it. We also aimed to obtain some anatomical data which may help the neurosurgeons during surgical approaches.

Methods: A cadaveric head (fixed in 10% formaldehyde) was dissected bilaterally under a surgical microscope to expose foramen lacerum. Additionally, measurements were obtained from 36 dry skulls with a digital caliper to point the relationship between foramen lacerum and the pterygoid canal which conveys greater and deep petrosal nerves.

Results: Foramen lacerum was observed as a triangular shaped aperture with a base facing anteriorly and apex posteriorly. Its base continued with the anterior wall of the carotid canal. The posterior aperture of the pterygoid canal was located 3.2 mm superior to the base of this triangle. The cartilage which is covering the foramen lacerum was located below the entrance of the pterygoid canal. The sagittal and the transverse diameters of foramen lacerum were measured at a mean of 8.6 and 7.6 mm, respectively. Foramen lacerum was classified into 3 types

according to its shape. Accordingly, we have observed type 1 in 63.9% of the specimens, type 2 in 19.4% and type 3 in 16.7%.

Conclusion: Contrarily to literature, our observations and measurements showed that greater petrosal nerve does not pass through foramen lacerum. Foramen lacerum was observed to possess 3 different types which have not shown before. We hope that the results of our study will be of use to the surgeons during operations directed to this region and will help to provide a safe surgery.

Key words: Foramen lacerum, greater petrosal nerve, anatomy, skull base, pterygoid canal.

P-62

Does the medial longitudinal arch changes in foot become risk factors for hallux valgus?

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Objective: Medial longitudinal disorders cause a series of malformations by affecting foot's biomechanics. In our study, the relationship between the medial longitudinal arch changes and valgus angle of 1st metatarsophalangeal articulation was examined.

Methods: On-foot anteroposterior and lateral X-ray graphs of 90 patients who applied to the clinic of physical medicine and rehabilitation with footache were examined. In these graphs the medial longitudinal arch height was measured and examined using calcaneal pitch and talohorizontal angle and valgus angle of 1st metatarsophalangeal was measured and examined using hallux valgus and intermetatarsal angles. Results: In 180 foot graphs, number of pes planus according to calcaneal pitch and talohorizontal angle were found to be 37 and 22, respectively. The numbers of hallux valgus were 52 according to hallux valgus angle and 28 according to intermetatarsal angle. Comparison of measurements showed that there is a negative strong correlation between hallux valgus angle and calcaneal pitch and negative weak correlation between hallux valgus angle and talohorizontal angle. No correlations was present between intermetatarsal angle and other measurements. **Conclusion:** Loss in the height of the medial longitudinal arch increases the angle of 1st metatarsophalangeal articulate. This may be the cause of rate increase of hallux valgus in patients with pes planus.

Key words: Medial longitudinal arch, hallux valgus.

P-63

The relationship between morphometric measurements of radius ulna and metacarpals bones in children aged between 9 and 18

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Objective: Relationship of dimensions of radius, ulna and metacarpal bones is an important factor for hand/wrist surgery. Studies involving radiographic measurements in adults are common where for children, they are limited. In this study, relationships among distal radius, distal ulna and metacarpal bones of children aged 9-18 are examined.

Methods: 42 patients (10 female-32 male) of age 9-18, who applied to the hospital with wrist and/or forearm trauma were investigated using comparisons of AP graphs of both sides. In graphs, the largest points of mid points of distal, proximal and long axes of distal radius, distal ulna and metacarpal bones were determined and measured radiogrammetrically. Difference between width measurements was evaluated according to age groups and gender. Regression equations were formed using regression analysis among age, radius, ulna and metacarpal measurements.

Results: For radius, ulna and metacarpal measurements, statistically significant difference was present according to ages while such a difference was not present for gender. For guessing metacarpal bone widths by forming seperate regression equations, it was found that for proximal and mid widths the radius width and for distal widths, radius width and age are important parameters.

Conclusion: It is possible to determine metacarpal widths in children using regression equations formed by age, radius and ulna widths. We think these regression equations will be useful in hand/wrist surgery, forensics and anthropometry. .

Key words: Radius, ulna, metacarpal, regression.

P-64

Nasal anthropometric measurements in young females

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Objective: The ethnic and racial morphometric differences in the nasal structure in the world populations have been the focus of researchs. The purpose of this study was to describe the average values of the nasal anthropometric measurements in Turkish female.

Methods: Anthropometric measurements of nose were taken from 128 volunteers Turkish females whose age were 18-28 years (mean age 23.4 year). Nose length, nose width, anatomic nose width and nasal root width were measured on each subject. Digital calipper was used in measurements.

Results: The means of nose length, nose width, anatomic nose width and nasal root width were 50,23 mm; 30,47 mm ; 20,15 mm and 18,27 mm, respectively.

Conclusion: By the means of aethetics, the human nose was the dominant feature in the facial region. Anthropometric measurements related with the nose measured were compared with available literature. Average values of the nose in this population may be used for guidance to plan reconstruction of the nose.

Key words: Nose, anthropometry.

P-65

Evaluation of lateral ventricular volume in bipolar patients: a stereological study

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Objective: Although findings from structural imaging studies suggest the presence of abnormalities in the brains of bipolar patients, the pathophysiology of bipolar disorder remains poorly understood. The researchers suggested that accurate volume determination of the lateral ventricles is important in several clinical conditions, including Alzheimer's presenile dementia, schizophrenia, and benign intracranial hypertension. We planned this study to investigate whether the lateral ventricle volumes change in bipolar patients or not.

Methods: We collected the brain MR images of 13 bipolar patients (20-40-years-old) from psychiatry clinic of Gaziantep University Hospital. They were 7 female and 6 male. For control group 13 subjects (6 female, 7 male) were identified with no neurological deficit (20-40-years-old). The lateral ventricle volume calculated from MRI scans, according to Cavalieri principle which is a stereological method.

Results: The mean lateral ventricle volumes were calculated 19.57 cm^3 in bipolar patients and 22.66 cm^3 in control group. The ratio between lateral ventricle volume and cerebral volume was 0.02 on both of the groups. These results were compared statistically and no significant difference between lateral ventricle volumes of bipolar patients and controls was found ($p>0.05$).

Conclusion: Our findings suggest that the lateral ventricle volume does not change on bipolar disorders. However, further studies are required with larger samples in order to support these data.

Key words: Lateral ventricle, bipolar disorder, Cavalieri principle, stereology.

P-66

Assessment of scapular morphometry

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Objective: The purpose of this study was to determine types of scapular notch and acromion, degree of superior and inferior scapular angles. Variations in the scapula has clinical significance, particularly of the scapular notch and acromion with respect to compression of the suprascapular nerve and shoulder impingement respectively.

Methods: Morphometric measurements were taken from 73 scapulae of unknown age and sex. The scapular notch were classified according to their shape, using the descriptions of Rengachary et al. (1979). Width and depth of scapular notch; from the supraglenoidal tubercule to the most depth point of scapular notch; superior and inferior angles of scapula were measured. Acromion types were evaluated according to their shapes (type I, cobra; II, square; III, intermediate) and as well as its inclination (type I, smooth; II, curved). The acromion length and distance from the acromion to the processus coracoideus were also measured.

Results: In the present study the frequency of the various types of scapular notch; type I (28.8%), type II (23.3%), type III

(13.7%), type IV (20.5%), type V (2.7%), type type VI (5.5%) and absence of scapular notch (5.5%), the acromial shape; type I (45.5%), type II (7.5%), type III (47.0%) and the acromial inclination; type I (15.2%), type II (84.8%) were observed.

Conclusion: An understanding of relationships between morphometric measurements and relevant anatomic structures in relation to the scapula may help the surgeons and physicians.

Key words: Types of scapular notch, types of acromion, superior scapular angle, inferior scapular angle, scapular morphometry.

P-67

The portals of cranial nerves in dura-mater of internal skull base on neonatal cadavers

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Objective: The objective of this study is to define the morphometry and morphological variations of openings of cranial nerves (I-VI) in the dura of skull base in newborns, in order to faciliate surgical procedures and to avoid injury to these nerves during endoscopic and surgical approaches to the nerves.

Methods: The portals for cranial nerves in the skull base were studied in 20 formalin– fixed neonatal cadavers. The calvaria, brain and brain stem were removed to expose intracranial parts of cranial nerves in skull base.

Results: The distances between openings of cranial nerves were measured; the variations of their neuroanatomical relations and some surgical triangles were determined. In dura, localizations of openings of oculomotor and abducens nerves were more variable than those of trochlear and trigeminel nerves. In three cases, oculomotor nerve and optic nerve entered into the optic foramen with together.

Conclusion: New observations are presented on openings in dura of skull base and proposed new intracranial portals for cranial nerves. The exact knowledge of the anatomical variations of portals for cranial nerves may be helpful in avoiding the risk of nerves injury during skull base surgery or for preoperative planning.

Key words: Cranial nerve, neonatal skull base, portal, dura-mater, variation

P-68

The connection between intracranial segments of trigeminal and facial nerves: the report of a rare variation in newborns

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Objective: The connections between the trigeminal nerve and facial nerve in extracranial regions have been showed by many authors. The aim of this study is to determine a rare variation between intracranial parts of facial and trigeminal nerves.

Methods: 30 central skull base specimens were obtained from formalin fixed neonatal cadavers during regular anatomical study. The specimens were dissected using a surgical loop and were photographed.

Results: In one case, bilaterally, in three cases unilaterally, a connection between intracranial parts of trigeminal and facial nerves were detected. This connection located on the level of trigeminal impressio of petrous part of temporal bone.

Conclusion: This quite rare variation of communications of these nerves should be kept in mind when treating patients with trigeminal neuralgia and also during skull base surgery.

Key words: Trigeminal nerve, facial nerve, connection, neonatal skull base, variation.

P-69

The evaluation of the length and the angulation of styloid process

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Objective: Clinical symptoms that caused by elongated styloid process (SP) or calsified stylohyoid ligament were first identified by W. Eagle and it is known as Eagle syndrome. Eagle reported that the normal length of the SP was 2.5 cm. Length and the medial angulation of the SP were determined by CT since high effective specialities in detection at Eagle syndrome and aimed to discussed with related studies.

Methods: Three dimensional images were obtained from the axial computed tomography (CT) sections of patients, ages between 24-80, pre-diagnosed with Eagle Syndrome, of 22

cases (11 male, 11 female) sent to Radiology Department of Cumhuriyet University Hospital for multislice CT were used. From the obtained images the length and the medial angulation of SP were measured. Parameters between the groups were made by Mann-Whitney U test.

Results: In all cases the length of SP was between 2.1 and 8.2 cm and mean of 4.9 cm. Angulation was between 57 and 78° and mean of 67.5°. Among males, the lenght of SP was between 3- 8.2 cm and mean of 4.3 cm, among females between 2.1 and 6.5 cm and mean of 3.9 cm. Angulation in male was between 57 and 77° and mean of 68.3°, in females between 57° and 78° and mean of 66.7°.

Conclusion: It was not showed significant statistical finding in lenght of the SP in both male and female without considering sides (p = 0.245). Three dimensional CT is an efficient procedure in evaluating the lenght and the angulation of SP.

Key words: Eagle syndrome, styloid process, three dimensional computed tomography.

P-70

The effects of montelucast against amikacin-induced acute renal damage

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Objective: In the current study, the therapeutic and protective effects of montelucast against amikacin-induced acute renal damage were investigated.

Methods: For this purpose 35 wistar albino female rats were divided into 5 groups as follows: Group 1: Control; Group 2: Control+montelukast (10 mg/kg, daily for 10 days p.o.); Group 3: Amikacin: (single dose 1.2 mg/kg i.p.); Group 4: Amikacin (single dose 1.2 mg/kg i.p.) + montelucast (10 mg/kg, daily for 10 days p.o., after 3 days injected amikacin); Group 5: Montelucast (10 mg/kg, daily for 10 days p.o.) + amikacin (single dose 1.2 mg/kg i.p, after the last dose of montelucast). At the end of the experiment, all rats were sacrificed and the blood of rats was collected. BUN, creatinine (Cr) and albumine (Alb) levels were determined.

Results: The serum BUN levels of group 3 increased when compared to group 1 and 2 ($p<0.05$). The serum BUN levels of group 4 decreased when compared to group 3 ($p<0.05$). There was no significantly changing of the serum BUN levels of group 5. When Cr and Alb levels of group III compared with other groups, there was no statistically different, but Cr and Alb levels tended to statistically significance levels as indicate the renal damage.

Conclusion: Montelucast treatment reduced BUN levels, which indicates renal parenchymal injury, in amikacin-induced acute kidney damage.

Key words: Amikacin, montelucast, BUN, rat.

P-71

Sexual dimorphism in craniofacial dimensions in young adults

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Objective: Gender differences in craniofacial morphology are without doubt of importance not only for anatomists and biological anthropologists, but also for plastic surgeons, orthodontists for planning the treatment or surgical approaches, and for forensic anthropologists for a more reliable identification. In the present study variations in the craniofacial morphology related with sex have been evaluated.

Methods: After ethics committee approval, 150 male and 150 female, a total of 300 students (with a mean age of 21.23 for males and 20.88 for females) were included in the study. All the attendants were the students of Başkent University. Including body weight and body height, a total of 19 anthropometric measurements were taken from each subject according to the technique by Kola and Salter. All the measurements were taken by the same author and recorded to the nearest millimeter.

Results: When the data was evaluated all the measurements in male subjects were higher when compared with females except forehead height and labial height. No statistically significant gender difference was found for the later two variables. When stature, body weight, and body mass index had been controlled by covariance analysis all the values for male subjects were again higher except labial height, chin height intercantal width, and binocular width.

Conclusion: As a conclusion the present study indicates that there is a significant gender difference related with craniofacial morphology.

Key words: Craniofacial, morphology, dimorphism, anthropology

P-72

A peritoneal meso attached to the anterior abdominal wall and leading to internal supravesical hernia

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During the abdominal dissection of a 67-year-old male cadaver, a variative peritoneal meso was encountered at the inner face of anterior abdominal wall. Part of the small bowel was herniated into the sac which was formed by this peritoneal meso. The peritoneum of the anterior abdominal wall normally forms the right and left medial umbilical folds on the right and left umbilical arteries and median umbilical fold on the remnants of the urachus. In this case, the peritoneum instead was attached to the anterior abdominal wall at the front and in its posteroinferior course spreading out towards the urinary bladder. Lateral margins of this meso were continuing as two folds which included the right and left umbilical arteries. The depth of the sac on left side of the meso was 3.86 cm and 3.20 cm on the right. Approximately 30 cm of the small bowel including the terminal part of jejunum and the beginning of ileum was herniated in to the left sac. This formation is a very rare entity defined as internal supravesical hernia in the literature which is known to cause intestinal obstruction. In this case for the first time, the developmental process of the peritoneal sac formation which constitutes the herniation base is examined by considering the morphological features of umbilical arteries and the remnant of the urachus and their structural relations with the urinary bladder.

Key words: Internal supravesical hernia, median umbilical fold, medial umbilical fold.

P-73

Cross-sectional area measurements of the sigmoid sinus and internal jugular vein, and their relationships with the surgical landmarks of mastoidectomy

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Objective: This study aims to reveal the relationship of the size of sigmoid sinus and internal jugular vein with the landmark measurements used in temporal bone surgery.

Methods: Fourteen temporal bones (6 right, 8 left) of 8 formalin fixed human cadavers (mean age: 66) were dissected under surgical microscope. The distances from the Henle's spine (supra-meatal spine) to the dura, from the dome of the jugular bulb to the second genu of facial nerve and to the superior part of the round window niche, from the facial nerve to the sigmoid sinus were measured. Afterward sections were taken from the five levels of sigmoid sinus-internal jugular vein and cross sectional areas calculated by point counting method. To evaluate the differences between the sides and levels, Wilcoxon Sign Rank Test was used. To evaluate the relationship among the cross sectional areas of different levels and with landmarks, 'Spearman's Rank Correlation Coefficient Test' was used. Statistical significance level was 0.05.

Results: Differences between the sides for each level were statistically insignificant. Statistical differences among the section-levels were documented. Additionally, on the left side, cross sectional area of the external opening of jugular foramen has a positive correlation with all levels, except for internal opening of jugular foramen. Among the measurements of left and right sides negative correlation was determined for each level, except for the level of jugular bulb. The correlation of the cross sectional area of the level of jugular bulb with "the distance from the Henle's spine to the dura" was positive, and with "the distance between dome of the jugular bulb to the superior part of the round window niche" was negative. The area at the beginning of sigmoid sinus has a negative correlation with the distance between the dome of the jugular bulb to the second genu of facial nerve.

Conclusion: The results of the study present that the landmark measurements of the surgery of complicated temporal bone are related with the size of certain level of the sigmoid sinus and internal jugular vein. It is suggested that taking into account the size of the venous structures will contribute to the mastoidectomy process.

Key words: Sigmoid sinus, internal jugular vein, temporal bone, mastoidectomy.

P-74

Creative drama in anatomy education

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Objective: Creative drama is called an activity aiming at comprehending an idea, a situation or knowledge in a group, utiliz-

ing drama techniques such as role playing and improvisation. It should be considered that if drama is a usable technique in education, it may well be used in anatomy education.

Methods: Creative drama techniques were applied to 1st grade students of Health School, Mehmet Akif Ersoy University over the anatomy course. A target group of 100 students were selected who have never heard or read of the subject nervous system yet. Later on, a group of 10 students were asked to explain how parts such as prefrontal cortex, hippocampus, occipital lobe, Broca's area, Wernicke's area, amygdala, precentral area, postcentral area function. How these structures function was given through drama techniques with role playing and personification.

Results: At the end of the educating drama course; students, who have never heard or read of this subject were verbally asked about the names of different parts of the brain and their duties in the brain. Correct descriptions were received from 90% of the students. After a 30 days break, 100 students were again asked verbally about what they could remember and it was seen that their knowledge were so lively and active.

Conclusion: This study shows that creative drama technique, based on giving multiple stimulants simultaneously is a usable technique for some subjects in anatomy education. It should be considered that as worked on it, this model may well be put on a systematic rail.

Key words: Anatomy, education, drama, nervous system.

P-75

The effect of eminentia intercondylaris on the maximum length measure of the tibia

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Objective: Distal bones of the arms and legs lengths have more changes compared to the proximal bones humerus and femur. Therefore to formulate the constructing stature distal bones of the arm and the legs should be utilized. The tibia has been a proverbial "bone of metric contention", whereas the quantitative effect of inclusion or exclusion of the eminence has been argued, to measure the length of tibia. Our aim was to investigate and to discuss the maximum length measure of the tibia by inclusion or exlusion of eminentia intercondylaris.

Methods: This study was examined by using total 60 tibia which belongs to 30 men and 30 women tibia and bones are taken from the bone laboratory of the Department of Anatomy, Adnan Menderes University, Aydın. The specimens consist of dry bone tibia from mature skeletons of 30 female (15 right, 15 left), 30 male (15 right, 15 left). The length of the tibia measured with an osteometric board. Tibia shaft positioned paralel to the long axis of the osteometric board. Maximum length (MaxL) = the distance between the proximalmost (most point of the eminentia intercondylaris) point and the distal most point of the element. Condylo-malleolar length (CondMal) = the distance between the superior articular surface of the lateral condyle and the tip of the medial malleolus. Recorded data were analyzed by using SPSS 14.0 program. Mean ± standard deviations of measurements were calculated. T- test was used to evaluate the differences between the sexes.

Results: The mean of the MaxL 34.17±1.56 cm, CondMal 33.96±1.56 cm in female, the mean of the MaxL 36.40±1.67 cm, CondMal 36.09±1.61 cm in male were calculated. When the measurements were analysed by t-test which showed a statistically significant difference between males and females ($p<0.01$).

Conclusion: On the antropological and clinical studies, human height is calculated with the formula of body structure by measuring tibia lengths on both dry bones and radiologic images. We think that our findings contribute to these studies.

Key words: Tibia, eminentia intercondylaris, bone length.

P-76

The protective effects of caffeic acid phenethyl ester against toluene-induced nefrotoxicity in rats

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Objective: Caffeic acid phenethyl ester (CAPE) has antioxidant and anti-inflammatory properties. The aim of this study was to examine protective effects of CAPE against toluene-induced nefrotoxicity in rats.

Methods: Twenty one male Wistar rats were divided into three groups with equal number in each. Rats in the group I were the controls. Toluene was intraperitoneally injected to the rats of group II with a dose of 250 mg/kg. Rats in the group III were daily received CAPE while exposed to toluene. After 14 days, all of the rats were killed by decapitation. Enzymatic activities of superoxide-dismutase (SOD), glutathione peroxidase (GSH-Px), and catalase (CAT) and the level of malondialdehyde (MDA) were studied in the rat kidneys. Blood urea nitrogen (BUN) and serum creatinine levels were measured for renal function.

Results: The CAT and SOD enzyme activities and serum creatinine levels were significantly increased in rats treated with toluene compared to the controls. But GSH-Px activity and MDA and BUN levels showed statistically nonsignificant changes. However, increased CAT and SOD enzyme activities and decreased serum creatinine levels were detected in the rats received CAPE while exposed to toluene. The GSH-Px activity and MDA and BUN levels in the same group have not shown statistically significant changes.

Conclusion: It was indicated that toluene-induced nefrotoxicity in rats can be prevented by CAPE.

Key words: CAPE, toluene, kidney, rat.

P-77

The analysis of diabetic rats femur with using SEM (scanning electron microscopy) and FTIR (furier transform infrared) spectrometer

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Objective: To investigate the diabetes on histological and structural diferences in rats femur.

Methods: In this study, thirteen female Wistar rats were used. Fifteen of these animals were used diabet group (D) and were injected STZ (50 mg/kg) by a single intraperitoneal injection. Fifteen of these animals were used control group (K). Only rats with blood glucose levels >300 mg/dl were enrolled in the study. All animals were sacrificed at the end of 12th weeks. Totally thirty femurs were used for analysis of SEM and FTIR. All femurs were seperated into two parts. The microscopic images were analyzed to determine total trabecular area, and alveolar structures as square millimeter by defining region of interests (ROIs) in the image analysis software. Obtained data were given as percentages of alveolar structure in trabecular bone. Bones were homogenized with nitrogen for FTIR analysis.

Results: SEM analysis revealed that in the diabetic rats, the percentage of the alveolar structures was significantly increased compared to that of femurs in control rats because of the diabetic deformation, In FTIR analysis, diabetic rats bone mineral structures were impaired according to diabetic deformation.

Conclusion: Diabetes causes many complications such as nephropaty,neuropaty and retinopaty. Osteopenia is also a complication of diabetes. Our results revealed that diabetic osteopenia impairs trabeculer structure in bone and causes an increase in bone fracture.

Key words: Diabetes, trabeculer bone, SEM, FTIR.

P-78

Age-related ultrastructural changes in rat tendo calcaneus

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Objective: The Achilles tendon is the thickest and the strongest tendon both in rats and in humans. In the rat, the Achilles tendon size/body weight ratio is much great than that in human. Compared to other tendons of the body, aging is an important predisposing factor regarding lesions of the Achilles tendon. The aim of this study is to investigate the age related ultrastructural changes in the Achilles tendon of healthy rats.

Methods: For this study we used a total of 30 Wistar albino rats that were of 2-3 weeks (prepubertal), 6 months (adult) and 12 months (late-adult) ages, 10 rats from each group. Tissue samples for ultrastructural study were examined by Carl Zeiss EM 900 transmission electron microscopy after conventional histological methods.

Results: Ultrastructurally we observed a reduction in the activity of tenocytes and decrease in the synthesis of collagen, along with deposition of secretory material within the granular endoplasmic reticulum and increased lipid in the cytoplasm as well as the rounded shape change in the nucleus. The number of

active tenocytes and the release of collagen fibers from tenocytes also decreased with age.

Conclusion: With aging, we detected a decrease in the activity of tenocytes and synthesis of collagen, increase in secretory material of GER and lipid deposition in the cytoplasm. These degenerative changes in the 6 month group results with the functional loss of elasticity in the tendon thus the lesions of the Achilles tendon seen during adult period could be the consequence.

Key words: Tendo calcaneus, aging, ultrastructure.

P-79

The existence of axillary arch in fetus and its clinical significance

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Objective: Axillary arch, an important muscle variation in axillary fossa, originates from the lateral edge of latissimus dorsi, passes anterior neurovascular bundle of the axilla and lays posterior pectoralis major tendon. It inserts within a variety of forms in its localization including humerus, biceps brachii, coracobrachialis and coracoid process. This study has been planned to research the frequency of the axillary arch in fetus.

Methods: Axillary fossa was examined with a stereomicroscope in ten human fetus (twenty sides) , fixated in formaldehyde solution.

Results: Axillary arch was determined in 2/20 specimen belonging to two fetuses. In both specimen muscular slip detached from latissimus dorsi, passed anterior neurovascular bundle and ended posterior pectoralis major tendon and lateral border of intertubercular groove. In one specimen axillary arch was innervated with thoracodorsal nerve whereas in the other one, it was innervated with thoracodorsal nerve and medial pectoral nerve.

Conclusion: Due to the neurovascular compression on axillary arch, variety of complaints, affecting the quality of life, occur in upper extremeties such as lymphoedema, pain and paresthesiae. Moreover, axillary lymph nodes by hiding the lateral group may prevent all lymph node resection in axillary lymphadenectomy and this may lead to a failure in tumor surgery. Therefore, axillary arch must always be borne in mind to decrease the rate of mortality and morbidity.

Key words: Axillary arch, latissimus dorsi, neurovascular compression, axillary lymphadenectomy.

P-80

Absence of deep femoral artery

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At femoral artery, deep femoral artery is the main branch feeding the thigh. After iliofemoral embryological evolution many variations can be seen in this vessel. The absence of deep femoral artery is one of the rare seen variation among these variations. Knowing the anatomy and variations of deep femoral artery well, is important in low extremity ischemia, vessel surgery and angiography applications. In this study, 1036 films belonging to low extremity found in the Radiology department of School of Medicine of Cumhuriyet University were examined as retrospective. Among these films at four of them belonging to male patients, absens of deep femoral artery was detected. In patients at ages of 32, 37, 47 and 53 respectively, in the first and second patient at the right low extremity there was no deep femoral artery and at the left low extremity it was seen that medial and lateral circumflex femoral artery emerged from deep femoral artery. In the third patient it was detected that at left low extremity deep femoral artery did not exist, and at right low extremity lateral circumflex femoral artery emerged from deep femoral artery, and medial circumflex femoral artery emerged from femoral artery. In the fourth patient at left low extremity there was no deep femoral artery and at right low extremity it was seen that at deep femoral artery and femoral artery were in unsteady course. The results were discussed by comparing with literature data.

Key words: Deep femoral artery, femoral artery, variation, angiography.

P-81

Bilateral variation of musculus extensor hallucis longus

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Case: Bilateral tendon variations of musculus extensor hallucis longus (MEHL) were found in a male cadaver of 54 years of age. It ended after being divided into two slips on the right side

and three slips on the left. First tendon on the right side was inserted to the dorsal face of the base of proximal phalanx of thumb. Also the second tendon on the right was inserted to the dorsal aspect of the base of distal phalanx of thumb. MEHL on the left side was divided into three tendons at the level ankle joint. The first tendon was inserted to the medial side of dorsal aspect of the first metatorsophalangeal joint. The second tendon was inserted into the dorsal aspect of the base of distal phalanx of the thumb. The third tendon was more lateral to the other two and ran on the dorsal face of the foot and recepted a short tendon from musculus extensor hallucis brevis while coursing on the dorsal face of the first metatarsal and inserted into dorsal aspect of base of proximal phalanx of the thumb.

Discussion: Our findings are parallel with the literature. We believe that the variations of MEHL should be taken into account in surgical approaches directed to the foot and ankle joint.

Conclusion: In conclusion, variations of the MEHL may be used as grefts in the treatment of deformities, tendon ruptures or reconstructive surgery of the thumb.

Key words: Musculus extensor hallucis longus, variation.

P-82

The comparison of brain MRIs of monozygot twin girls with rett syndrome with age matched healthy girls and boys with stereological methods

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Objective: Brain MRIs of monozygot twin girls diagnosed as Rett syndrome at the age of 2.5 years were evaluated with stereological method. Similarly, MRIs of healthy girls and boys at the same age were evaluated and compared with the formers. Hemispheric volume (HV), volume of corpus callosum (CCV) and the ventricles (VV) were calculated with stereological methods (Cavaliery principle) on MRIs of two girls diagnosed as Rett Syndrome and also of healthy 10 girls and 10 boys as control group. Dotted area measurement scale of 0.3 cm was placed on each of the MRI sections of 0.5 cm intervals.

Results: The mean volumetric values in 2 girls with Rett Syndrome were calculated as HV=572.73 cm^3, CCV=12.67 cm^3, VV=15.45 cm^3. Similar values in healthy girls were HV= 524.53 cm^3, CCV=8.74 cm3, VV=12.38 cm^3 and in healthy boys were HV=577.84 cm^3, CCV=9.15 cm3, VV=9.852 cm^3.

Discussion: It is reported in the literature that cerebral atrophy is expected in patients with Rett Syndrome. On the contrary to this background, cerebral volumetric values of girls with Rett syndrome were found higher when compared with healthy girls in our study. When the values of healthy boys and girls in the control group were compared, boys' cerebral volumetric values were higher than the girls' except the ventricular volume.

Conclusion: Repetitive calculation of cerebral volumetric values of girls with Rett Syndrome on the long run MRIs with stereological methods are required. Hence cerebral atrophy or hypertrophy in these patients will be determined accurately.

Key words: Rett syndrome, MRI, stereology.

P-83

Variations of the clival canal

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Objective: A clival canal in or through the basilar part of the occipital bone has been rarely mentioned in the literature. It is mentioned that this canal can be a remnant of the first true somite in embryonic period. There were many anastomoses among the vein of the cavernous sinus, inferior petrosal sinus and basilar plexus. This present study was performed to presence clival canals on the basilar part of the occipital bones.

Methods: Presence of clival canal were investigated on Erciyes University Medical Faculty, Department of Anatomy at the 62 skulls and Cumhuriyet University Faculty of Medicine in the Department of Anatomy at the 25 skulls (total 87). Presence of clival canal detected on 6 of 87 skulls (%7).

Results: The mean length of this canal was 9.88 mm and mean distance between foramen magnum and clival canal was 6.38 mm.

Conclusion: Although all canals are single entry, output of this canal showed variations. The morphology of this canal can be important because of base of skull and brain stem surgery.

Key words: Anatomy, clivus, clival canal, variation.

P-84

Evaluation of the types of face shape in Turkish

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Objective: The aim of this study was to determined the types of face shape in Turkish people. Knowing the shape of face is important in anthropology and planning medical procedures as aesthetic, maxillofacial and orthodontic surgery.

Methods: The study group consisted of 1003 healthy subjects (470 male, 533 female) aged 18-68 years. Mean height and weight were 1.74 cm, 78.65 kg; 1.62 cm, 60.55 kg in males and females, respectively. The face length (FL; the distance from nasion to gnathion) and width (FW; bizygomatic breath) were measured and Prosopic Index (PI) was estimated using the following formulae: (PI= [FL/FW] x 100). The types of face shape were classified according to Banister's classification [Hypereuriprosopic (type I), Euriprosopic (type II), Mesoprosopic (type III), Leptoprosopic (type IV), Hyperleptoprosopic (type V)] in males and females.

Results: PI was 84.31 (FL: 12.07 cm; FW: 14.34 cm) in males and 85.25 (FL: 11.30 cm; FW: 13.28 cm) in females. Type I 18.1%; 15.6%, type II 35.3%; 34.3%, type III 33.2%; 34.3%, type IV 8.7%; 11.8%, type V 4.7%; 3.9% in males and females, respectively.

Conclusion: The types of face shape presented in this study may be useful in the medical and anthropological investigations.

Key words: Prosopic index, face lenght, face width, face shapes.

P-85

Thickness of the diploe and cranium size according to male and female groups

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Objective: The objective of this study is the classification of the thickness of diploe and dimensions/ of cranium at different points of cranium in men and women according to age groups.

Methods: In the radiology archive, measurements were made at different points in MR images of 305 (188 females, 117 males) patients, the average ages of whom were 40.98+20.44 (age range: 4-90) and who had no disorder of the bones. In order to determine diploe thickness, glabella, back and front bregma, lambda, opisthocranion and euryon points were used in the measurement. As for the determination of cranial volume, distances between glabella-opisthocranion, basion-vertex, basion-opisthion, euryon-euryon, nasion-basion, nasion-bregma, bregma-lambda, lambda-opisthocranion were measured. The data was loaded to SPSS 16.0 programme. T-test, Mann-Whitney U and Kruskal Wallis variance analyses were used in the statistical assessment. Results with a p value smaller than 0.05 were accepted as significant.

Results: While diploe thickness in parietal bones was low in both sexes, it was considerably higher in males except for opisthocranion ($p<0.05$). At the same time, according to craniometric results cranium in males was bigger ($p<0.001$). In men and women over 61, diploe thickness increased at bregma back, lambda, opisthocranion and euryon points ($p<0.05$). Average diploe thickness at glabella points was higher in individuals aged 21-60 ($p<0.001$). While the distance between glabella-opisthocranion increased in both sexes aged 61 and over, basion-vertex height decreased in women at the same group ($p<0.05$). Interestingly, there was no meaningful statistical difference among age groups in terms of maximum cranial width ($p>0.05$). Foramen magnum lenght decreased related to age in both men and women ($p<0.001$).

Conclusion: These results related to diploe thickness and cranium dimension may be leading in the determination of sex and age; surgical interventions to the cranium and bone graft choice and may increase the reliability of the operation.

Key words: Diploe thickness, anthropologic points, craniometric data, MRI.

P-86

Harmful effects of formaldehyde and possible protective effect of Nigella sativa on the kidney of rats

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Objective: This study was designed to investigate the harmful effects of formaldehyde (FA) inhalation and possible protective effects of nigella sativa (NS) oil on the kidney of rats.

Methods: For this purpose, 21 adult male Sprague-Dawley rats were used. Animals were divided into three groups. The rats in group I were used as control group. The rats in group II were exposed FA inhalation (10 ppm/8 hours/day) for 4 weeks. The rats of group III were administered nigella sativa oil (p.o) plus FA inhalation. At the end of 4-weeks experimental period, all rats were killed by decapitation. Then the kidney tissues of rats were removed. For light microscopic examination, tissue specimens were embedded in paraffin blocks following routine histological procedures. Histochemical and immunohistochemical stains were applied and the specimens were examined with light microscope.

Results: The result of this study, the mean kidney glomerul volume were higher in FA group than in the control and NS therapy groups. Proximal and distal tubules were higher in the FA group than in the control and the NS therapy groups, which was consistent with the qualitative observations.

Conclusion: In conclusion, chronic administration of NS reduced FA induced renal injury in rats. Therefore, we believe that NS may be used to prevent development of FA induced renal damage. However, further studies are needed to elucidate the mechanisms of the improving effect of NS on FA induced renal injury.

Key words: Formaldehyde, nigella sativa, kidney, stereology.

P-87

Role of the epineurial vessels on ischemic fiber degeneration

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Objective: Epinuerial vessels around the sciatic nerve formed a well developed collateral system that connect to the intraneurial arterial system. These vessels originates mainly from the popliteal and inferior gluteal arteries. In the present study we aimed to study the relation of the epineurial vessels on ischemic fiber degeneration.

Methods: A total number of 40 male rats were used for this study. The animals were divided into four groups (Control, Sham, Group 1, Group 2). In Group 1, epineurial vessels contributing to the formation of the vasa nervorum of the sciatic nerve were ligated from their origination (from inferior gluteal and popliteal arteries). In group 2, the vasa nervorum around the sciatic nerve was stripped.

Results: Histological analysis of the sciatic nerve samples revealed oedematous appearance in Group 1. Additionally, in Group 2, subperineurial degeneration/demyelinization was observed.

Conclusion: We found that ligation of the epineurial vessels from their origination did not create an ischemic fiber degeneration. We believe that the main contribution of the epineurial vessels on the sciatic nerve nourishment is the collateral branches between epineurial vessels. We think that this study would be helpful for studies on simulation of the vasculitic neuropathy.

Key words: Sciatic sinir, epineural vessels, devascularization, ischemic fiber degeneration.

P-88

Effects of administration of the phenytoin and folic acid on the thorax skeleton of rat fetuses

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Objective: This study was conducted on determining the effects of phenytoin skeletal malformations during rat embryonic development and determine the role of preventing these malformations with folic acid.

Methods: A number of 20 pregnant Wistar Albino rats derived from Clinic Research Centre of Erciyes University were used. Phenytoin group (seven rats) was a dose of 25 mg/kg/day phenytoin administered to pregnant rats on the 8th-10th days of pregnancy. Phenytoin+folic acid group (seven rats) on each gestation day was administrated 400 µg/kg/day folic acid and 8th-10th on gestation days were given 25 mg/kg phenytoin. On the twentyth day of the gestation, cesarean was performed to there groups. A number of 126 fetuses which had been taken examined for size and weight were measured. Bone development of thorax skeleton was observed by double staining technique.

Results: The evident retardation of ossification at thorax bones, the angulation in the intercostal interval and the retar-

dion of ossification at the thoracal vertebrates. The malformations of the fetuses in the phenytoin+folic acid group was determined to be 19% less as compared to those in the group phenytoin. Their lengths and weights were revealing the statistically significant differences between the groups (P<0.001).

Conclusion: Phenytoin of used during pregnancy determined cause to varying malformations on rat skeletal system, for decrease the teratogenic effect of the phenytoin the substances folic acid must be supported during the period of the treatment.

Key words: Rat, bone development, thorax, phenytoin, folic acid.

P-89

Absence of the hepatic and suprarenal segment of the inferior vena cava: a case report

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Objective: We aim to present the clinical significance of this rare vascular anomaly. The inferior vena cava is composed of four segments: hepatic, suprarenal, renal, and infrarenal. Inferior vena cava interruption with azygos or hemiazygos vein continuation is considered to be a rare congenital anomaly. The prevalence of this anomaly is 0.6% in general population. This malformation results from a connection failure between the right subcardinal vein and the right vitelline vein. Consequently, the venous blood from the caudal part of the body reaches the heart via the azygos or hemiazygos vein through the superior vena cava. Systemic venous flow beyond this point is compensated by the dilated azygos and hemiazygos vein.

Results: A 32-year-old male patient was admitted complaints with shortness of breath, burning in chest, weakness, fatigue to Dicle university hospital. Liver enzymes (ALT: 114 U/L, AST:58 U/L) increased in laboratory test. The patient has had type 2 diabetes mellitus. The left inferior phrenic artery orginated from coeliac trunk in computed tomography angiographic imaging. It was determined as the absence of the hepatic and suprarenal with preservation of the renal and infrarenal segment of inferior vena cava. It continued with azygos vein as retrocrural in proximal of renal veins and the azygos vein was dilated. The azygos vein was joined with superior vena cava in posterior mediastine proximally. It was presented retroaortic left renal vein together with inferior vena cava agenesis. The hepatic veins have been drained into the right atrium directly.

Conclusion: Anomaly of inferior vena cava must be considered in patients with chronic and persistent symptoms like shortness of breath, chest burning, weakness and fatigue.This case is important for the determination of symptoms of anomaly inferior vena cava.

Key words: absence of inferior vena cava, congenital anomaly, azygos vein.

P-90

Pyramidal cell number after toluene exposure in rat cerebellum and melatonin treatment effects

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Objective: The aims of this study are to determine the total pyramidal cells number after toluene exposure in rat cerebellum and to evaluate the effects of melatonin treatment.

Methods: 21 adult male Wistar-Albino rats were divided into three equal groups. Group I were used as control. Rats in Group II were exposed to toluene only (3000 ppm/1h/30 days) and rats in Group III were exposed to toluene and received daily intra-peritoneal injections of melatonin (10 mg/kg/day). Rats were sacrified for stereological analyses at the end of 4th week. Pyramidal cell number in rat's cerebellum was estimated using the optical fractionater technique.

Results: Rats exposed toluene was seen to have decreased pyramidal cell number than control group. In melatonin treated rats the pyramidal cell neurons partially increased when compared to toluene inhalated group. Furthermore, there was no significant difference between the melatonin treatment and control groups.

Conclusion: This study provides some evidences for protective effects of melatonin on rats exposed to toluene.

Key words: Toluene, cerebellum, melatonin, stereology.

P-91

Analysis using stereologic method of the neurotoxic changes in the hippocampus of the rabbits which were given high dose steroid and the effect of melatonin treatment

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In this study we have planned to examine the changes in the number of the neurons of the hippocampuses using stereologic method in the high dose steroid and steroid plus melatonin administered rabbits. To the other groups accept the control group, single dose methylprednisolone (20 mg/kg/day), administered by IM injection. Before the methylprednisolone injection, melatonin (10 µmol/kg/ ip) was administered to the methylprednisolone + melatonin group once in every other day. The brains of the sacrificed rabbits were subjected to routine histologic methods. Stereologic counting was made by the optical fractionators method in gyrus dentatus and cornu ammonis regions of hippocampus tissue. Neuron numbers was found to be diminished significantly in the group that only steroid was administered. Neuron number in the melatonin + steroid group was found to be high when compared with the group that was administered the steroid only. As a result we can say that high dose steroid decrease the neuron number in the hippocampus significantly and on the contrary melatonin has got improving effect on it.

Key words: Steroid, melatonin, hippocampus, cornu ammonis, gyrus dentatus.

P-92

Anatomy before the times of Hippocrates

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Anatomy history is old as history of medicine and has been showed a parallel improvement to medicine. But this improvement was very slow until the Hippocrates time. Our purpose in this study, to search the anatomy history untill the Hippocrates time. For this purpose the literature about the medicine history was investigated. Medicine in the ancient times mostly depended metaphysical, religious events and incantation. There are some anatomy knowledge in these non-objective methods. This knowledge mostly depends on mystic and some animal dissections. As a result before the Hippocrates time the anatomic knowledge were subjective exaggerated and not sciencitific.

Key words: History of anatomy, Hippocrates, history of ancient medicine.

P-93

Vertebral artery fenestration: case report

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Fenestrations of vertebral artery are excepted as rare anomalies encountered in angiographic and autopsy. Vertebral artery fenestration originates from vascular anomalies during the embrylogical development of the vertebral artery. Fenestration of vertebral arteries are vascular structures having two different lumen and endothelium layer which share the same or different adventitial layer. 65 year old female patient with vertigo and pin and needles complaints administered to Neurology Department of Cumhuriyet University Faculty of Medicine. In applied carotid doppler ultrasonography, a plaque causing 60% of stenosis was observed close to the proximal part of the right internal carotid artery. Patient, diagnosed as having normal lumen and calibrations of bilateral vertebral artery in doppler ultrasonography, was planned to apply bilateral selective carotid and vertebral artery angiography. With applied digital subtraction angiography, extending from carotid sinus to proximal of right internal carotid artery, ulserous atherom plaque was observed which causes 50% of stenosis. In the vertebral arterial angiography of the patient, right vertebral artery was normal whereas fenestration was observed in upper cervical segment of the left vertebral artery. In this report, this situation presented with the relevant radiological and embriyological procedures.

Key words: Vertebral artery, fenestration, digital subtraction angiography.

P-94

Congenital chest wall deformities in a child with scoliosis

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Objective: The purpose of this study was to demonstrate rarely seen congenital chest wall deformities in a child with congenital scoliosis.

Methods and Results: In this study, we determined involving missing, fused, bifid ribs and also fused spinose process and corpus in thoracic vertebrae, in a 8-year young child who was referred to Department of Thoracic Surgery with upper back pain. CT chest roentgenogram with 3-D reconstruction that revealed rib fusion among third-fourth ribs and fifth-sixth ribs in the right side. On the other hand, fourth and fifth ribs were absent in the left side. Its clinical significance is that the heart and great vessels are unprotected. Moreover, the third rib was bifid in the left side. Except for last three spinose process of thoracic vertebrae, all of them were fused posteriorly. Similary, there was a wide fused area anteriorly among the corpus of 5.-8. thoracic vertebrae. Moreover, we observed that cornu of xiphoid process were fused, and composing two small sternal foramina.

Conclusion: Since the patient had no symptomatic, we did not recommend her certain surgical operation. On the other hand, she has still under the supervision of Department of Thoracic Surgery.

Key words: Chest wall deformities, ribs, thoracic vertebra, sternum, child.

P-95

Left pulmonary artery agenesis: case report

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Objective: Isolated unilateral pulmonary artery agenesis is a rare congenital pathology which is seen commonly in infants and children. Symptomatic patients with pulmonary artery agenesis admit to outpatient clinics usually with the complaints of chest pain, pleural effusion, recurrent pulmonary infections, dyspnea or exercise intolerance and hemoptysis. Unilateral pulmonary artery agenesis is among the causes of hyper radiolucency on chest X-ray. The use of advanced diagnostic modalities to support the diagnosis of unilateral pulmonary artery agenesis has great importance.

Case: 16 month old male baby admitted into Children Outpatient Clinic of Medicine Faculty in our University with the complaints of tachycardia and low weight gain, persistent cough and fever altough two week antibiotic treatment. The chest computed tomography conducted at Radiology Department revealed absence of left main pulmonary artery.

Conclusion: Congenital pathology should be considered in patients with common cardiologic and developmental problems, recurrent pulmonary infections like in our case. Beside that the presence of the serious complications like pulmonary hypertension and congestive heart failure makes early diagnosis very important.

Key words: Pulmonary artery, agenesis.

P-96

One of the founders of modern anatomy in Turkey: Hasan Mazhar Pasha

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He was born in Afyonkarahisar in 1845. He was one of the leading anatomists who helped to establish the foundation of modern anatomy in Turkey. He was one of the founders of the Medical School in İstanbul where he also held office as member and chairman of the faculty council. He was assistant professor and professor in the anatomical department and a member of Ottoman Medical Association. He and his colleagues promoted use of Turkish language in medical education. He contributed greatly to translation of foreign language medical terms into Turkish, especially many anatomical terms were translated by him. His first work is Ilm-i Teşrih (Anatomy) which is the translation of Jamin's book from French. His other works are Teşrih-i Tavsifi (Descriptive Anatomy), Mükemmel Teşrih Atlası (Anatomy Atlas), Teşrih-i Topografya (Topographic Anatomy), Mebâhisu'l-Asab (On Nerves and Vessels), Usul-ü Teşrih (Dissection Methods). He contributed to the education of many doctors among whom are Prof. Dr. F. Nafiz Uzluk ve Ord. Prof. Dr. Zeki Zeren. Dr Zeki Zeren affectionately calls him “Most virtuous, professor of professors, having an academic career of 41 years”. We commemorate his 90th anniversary of death.

Key words: Hasan Mazhar Pasha.

P-97

Influence of gilaburu (*Viburnumo opulus*) juice on 1,2-dimethylhydrazine (DMH) induced colon cancer

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Objective: The aim of this study was to investigate the effects of gilaburu juice that has higher level antioxidant activity on colon tumorogenesis.

Methods: Eight weeks old Balb-C male mice received s.c. injections of DMH (20 mg/kg body weight) once a week for 12 weeks to induce colon cancer. While drinking water was given to the sham control (group 1) and to the DMH control (group 2) mice, gilaburu juice was given to group 3 for 30 weeks (started with first DMH injection) and group 4 for 18 weeks (started after last DMH injection). 18 weeks after the last DMH injection, all mice were sacrificed and the histogenesis of colon tumors was investigated. The sites and incidences of tumoral lesions [low-grade dysplasia, high-grade displasia, intramucosal carcinoma and invasive carcinoma] were calculated and compared with control.

Results: The body weights were similar in all groups. No tumoral lesions were found in the group 1. Colon tumors developed in all DMH treated mice (group 2, 3 and 4). In these groups, the greatest numbers of tumor lesions were detected in the distal colon, followed by the mid colon, and only a few in the proximal colon. There was a reduction in the mean total number of tumor lesion in group 3 (8.5) and 4 (8.3) when compared to group 2 (11.3). The incidence of invasive carcinoma in group 3 was significantly lower than group 2 ($P<0.05$).

Conclusion: Gilaburu juice may be useful for colon cancer prevention at initiation stage.

Key words: Gilaburu juice, Viburnumo opulus, colon cancer, DMH.

P-98

Measuring normative values of cervical spine movement of 18-21th age group using digital inclinometry

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Objective: Establishing normative values of cervical spine movement of 18-21th age group of young adults.

Methods: 56 volunteers (30 men, 26 women) between the ages of 18 to 21 attended our study. Those who do not have any orthopedic disability, previous neck surgery, trauma and rheumatic diseases were accepted to the study. Flexion, extension, lateral flexion and rotation movements of cervical spine, and some anthropometric data were measured. Measurements were made on the same time, each day. Cybex EDI-320 (Cybex © Inc., Ronkonma, NY) was used for the measurement of the movements.

Results: Statistically, the maximum extension movement of men was lower than the extension movement women ($p = 0.003$). Also the right rotational movement of women was higher than the right rotation of men ($p=0.001$). No significant difference was detected considering other movement data among sexes ($p>0.05$). There was a negative correlation between head circumference ($r=-0297$, $p=0.026$) together with head width ($r=-0293$, $p=0.028$) and the right rotation movement. We also observed a similar negative correlation between neck circumference and the extension movement ($r=-0315$, $p= 0.018$).

Conclusion: The cervical spine movements of Turkish people between these ages were measured. We believe that usage of found normative values in clinical field will be useful.

Key words: Cervical spine, digital inclinometer, movement, joint.

P-99

In terms of artistic anatomy, nose measurements of Turkish female

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Objective: Scientists and artists have tried to understand or quantify "beauty" with mathematical standards since the ancient Greek era. However, they have been interested in the ratio of the beauty of the human body. The "golden ratio" was one of the results of such efforts. The "golden ratio" which is a ratio (1:1.6180339887...) obtained when a line is divided into two unequal segments, where the ratio of the longer segment to the whole line is equal to the ratio of the shorter segment to the longer. The purpose of this study is to investigated if the golden ratio fits to human nose.

Methods: Turkish female whose age were 20-30 years (mean age 24.5 year) were included this study. Nose lengths, nose width, were measured on each subject. Digital caliper were used in measurements. The proportion of nose length to nose width was calculated.

Results: The means of nose length, nose width, are 58.32 mm, 30.62 mm, respectively. The proportion of nose length to nose width was calculated as 1.84.

Conclusion: The golden ratio is widely known in the art world and is also well known in the field of facial surgery. In this study it is determined that there is no golden ratio fits to the human nose. However, it is supposed that by increasing the number of subjects in the study, nose proportions in the face profile can be studied.

Key words: Nose, golden ratio, anthropometry.

P-100

Nasoaural canon in young Turkish female

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Objective: The artists had accepted their work of arts have some proportions on human body. The proportions between the different parts of the human body had been called "Canon". The oldest canon was used by the artists who had lived in ancient Egypt. Nasoaural canon was described by Leonardo da Vinci. The purpose of this study is to investigate if the nasoaural canon fits to Turkish female face.

Methods: Turkish female whose 21-30 years (mean age 24.58 year) were included this study. Body height, head height, nose length, and ear height were measured on each subject. Digital caliper and harpenden anthropometer were used in measurements.

Results: The means of body height, head height, nose length, and ear height were 173,34 cm, 22.24 cm, 5,61 cm, 6.54 cm respectively.

Conclusion: During renaissance, many artists as Leonardo, Dürer developed rules of facial proportions. Aesthetics surgeons tended to accept these rules in the absence of anthropometric data about the normal face. According to our results, Turkish female's face is different from Leonardo's nasoaural canon, nevertheless we conclude that the findings of this study will be a guide for aesthetics surgeons.

Key words: Ear, nasoaural canon, anthropometry.

P-101

Effects of environmental rearing conditions on the grasping movement in prenatally stressed rats

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Objective: In this study, influences of environmental rearing conditions on skilled reaching and grasping behavior of prenatally stressed experimental animals were investigated.

Methods: Wistar rats from different litters were grouped according to rearing conditions (Enriched =EC, Standard =SC, Isolated =IC), following weaning at postnatal day 21. Animals in EC were housed as a group of 12 animals in large plexiglass cages connected via tunnels and endowed with a variety of stimulating objects; SC were housed as a group of 4 animals in regular size plexiglass cages and IC were housed individually in metal cages. Six weeks later, in animals accustomed to test cages skilled reaching and grasping behaviors were compared. Time for the grasping of food pellet with forepaw and food consumption amount after one hour test period were recorded over the five consecutive days. During sessions, access to food in the home cage was restricted to 20% of the average daily food consumption.

Results: Time for the first usage of paw showed significant differences among the groups according to the gender. This latency decreased significantly at the end of test period, while the average food consumption increased in all groups. However, even at the last day of test period, latency in enriched-male rats (20.29 second); was significantly longer in comparison to SC (16.72 second) or IC (5.12 second). On the other hand, latency in enriched-female rats was significantly shorter (EC=8.75; SC=18.94; IC=17.36 second). In parallel, the amount of food consumption was significantly different between male (SC=21.75; IC=14.11; EC=11.17 mg) and female (EC=21.08; SC=9.62; IC=6.86 mg) rats.

Conclusion: Environmental enrichment leads to positive effects on the adaptation capacity and problem solving ability of female rats. However, in male rats, social isolation or environmental enrichment seems lesser advantageous than the normal social interaction condition.

Key words: Prenatal stress, development, grasping, enriched environment, social isolation.

P-102

The left renal vein formed distal to the renal hilum: a case report

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The renal cortex is drained sequentially by the interlobular veins, arcuate veins, interlobar veins, and lobar veins. The lobar veins join to form the main renal vein. The renal vein usually lies anterior to the renal artery at the renal hilum. The left renal vein is longer than the right renal vein. The left renal vein averages 6 to 10 cm in length and will normally course anteriorly between the superior mesenteric artery and the aorta before emptying into the medial aspect of the inferior vena cava. It was observed that there was a developmental malformation in the left renal vein of a 28-year-old woman at the autopsy. One branch of vein (width: 3.18 mm) arised from the upper pole and four branches of vein (widths respectively: 5.35 mm, 4.20 mm, 4.51 mm, 3.80 mm) arised from the hilum of the kidney. First the two branches which arised from the inferior part combined at 31.6 mm to the hilum, then all of the vein branches combined at 59.1 mm to the hilum to form renal vein. These variations can be demonstrated preoperatively by selective radiography. Left kidney is usually preferred for renal transplantation and for this reason, morphology of left renal vein is important for these operations. Multiple vascular variations near the hilum of the kidney are present in seemingly normal patients and a sound knowledge of possible variations is very useful for radiologists, urologists and surgeons in general.

Key words: Renal vein, renal hilum, kidney, variation.

P-103

A variation of the branches of the aortic arch and aberrant right subclavian artery in computed tomography

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Variations from the normal aortic arch development form a heterogeneous group of vascular abnormalities affecting the position, the branching pattern, or both, of the aortic arch, which are associated with specific anatomic and clinical manifestations. In a 72-year-old male patient's thorax computed tomography, variation of the branches of aortic arch was observed. There was not the brachiocephalic trunk, and there were four branches of the arch of the aorta. These branches were the right common carotid artery, the left common carotid artery, the left subclavian artery and the right subclavian artery respectively. The right aberrant subclavian artery originated from the medial side of aortic arch and coursed transverse posterior to the esophagus anterior to the spine. In addition, the right aberrant subclavian artery was compressing to posterior wall of oesophagus. There was not any other major vascular anomaly in the patient. The prevalence of aortic arch anomalies is estimated to be approximately 0.1% in the adult population and comprise less than 1% of operable congenital cardiovascular defects. However, the true prevalence of such abnormalities is not known, since they may have no clinical impact and, therefore, remain undetected. Its additional importance is placed on aberrant arteries in the radiological and surgical literature. The importance of thorax CT in determining the vascular anatomy and its variations was emphasized with this case.

Key words: Aortic arch, variation, aberrant subclavian artery.

P-104

Trifurcation of the arteria cerebri media and their cortical branches: a case report

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Below the substantia perforata anterior, on the skull base, arteria carotis interna (ICA) divides into its terminal branches: arteria cerebri anterior (ACA) and arteria cerebri media (MCA). MCA extends horizontally into sulcus lateralis (Sylvian fissure). After a variable lenght it divides commonly into superior and inferior trunci via a bifurcation. The part till the genu, located at the junction of the sphenoidal and operculoinsular compartments of the Sylvian fissure, is named M1 segment of the MCA. M1 is further subdivided into the part till the bifurcation, named as prebifurcation part, and the part after the bifurcation, called as the postbifurcation part. Although MCA undergoes a bifurcation as its classical pattern (78%), rarely a trifurcation (7%) or multiple trunci might be also seen. Our case is a trifurcation and the cerebral structures around the sulcus lateralis are supplied by cortical branches arising from these three trunci. This variation, which shows an importance concerning anatomical studies and the interpretation of the cere-

bral angiograms alongside with the nerosurgical operations has been presented with discussions involving the literature data.

Key words: Arteria cerebri media, trifurcation, sulcus lateralis, cortical branching, anatomy.

P-105

Ascending and descending branches of the medial circumflex femoral artery, branching from the femoral and deep femoral arteries: case report

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Case: During educational dissections in our department, it was observed that the ascending and descending branches of the medial circumflex femoral artery branched from the femoral (FA) and deep femoral arteries (DFA), respectively, in a 78-year-old male cadaver. The ascending branch (MCFAa) took its origin from the FA proximal to the origin of the DFA, and descending branch (MCFAd) from the DFA. The lateral circumflex femoral artery branched from the DFA as usual. The distance between the origin point of the MCFAa and inguinal ligament was 2.3 cm, and of MCFAd was 7.1 cm.

Discussion and Conclusion: The MCFA mostly branches from the DFA as a single trunk and its frequency was reported as 58% to 81% in the literature. Double MCFA, or MCFAa and MCFAd branching separately from FA and DFA are quite rare, and their frequency was reported between 1-4%. MCFA can be used in flaps in reconstructive surgery or can be a route for selective arteriography. Besides, the MCFA can be severed during the surgeries at the region. In order to prevent complications, it is important to know and remember the normal and variational anatomy of the MCFA.

Key words: Medial circumflex femoral artery, femoral artery, variation.

P-106

Assessment of the calcaneal angles on the dry bones

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Objective: Calcaneal angles were measured and evaluated over dry bones.

Methods: Thirty-two human calcaneus were used in this study. Gissane and Böhler angles were measured and evaluated between the sides.

Results: Böhler angle in the average 28.560 (min 190 - max 380) and Gissane angle in the average 107.940 (min 1000 - max 1350) as were measured on the dry bones.

Conclusion: Calcaneus angles different races and communities in terms of the age, sex and sides may be variable. Displacement of fractures of the calcaneus bone, is evaluated with the reduction of Böhler and Gissane terms. Particulary important in this respect is the lower limit of this value has to be known in every society. In this study, Böhler and Gissane angles of dry bones were evaluated and we found no difference between the sides.

Key words: Calcaneus, Böhler angle, Gissane angle.

P-107

The effects of olfactory neuroepithelial damage as a result of zinc sulfate on neural proliferation in subventricular area caused by experimental brain injury induced by epilepsy model

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Objective: The aim of this study was to investigate whether proliferation of neural progenitors found in the subventricular area (SVA), a well-known region of regeneration in mature brain, are affected by olfactory neuroepithelial damage in the nasal mucosa.

Methods: This was assessed histochemically on days 4, 7, 14, 21 and 30. Status epilepticus (SE) was induced by lithium-pilokarpin in male, Wistar albino rats, graded using Racine scale and the changes were assessed independently and in conjunction with the injury caused by irrigation of nasal cavity with zinc sulphate (ZS). The responses of the basal cells in the olfactory mucosa and olfactory bulb (OB) and those of the progenitor cells in the SVA were examined. Four groups were constructed. Group I (n:15): No epilepsy, intact olfactory mucosa; Group II (n:15): epilepsy induced, olfactory mucosa intact; Group III (n:15): epilepsy induced, olfactory mucosa irrigated with ZS; Group IV (n:15): epilepsy not induced, olfactory mucosa irrigated with ZS.

Results: With SE, rostral migratory stream (RMS), which started rising on day 4 and reached its peak on days 7 and 14

was demonstrated in SVA with cresyl violet staining. There was no significant difference between the control group on day 30. There was no significant difference between the Groups II and III in RMS comprised of migrating cells between the SVA and the OB.

Conclusion: We concluded that disruption of the synaptic relation between the olfactory neuroepithelium and the second order neurons in the OB did not induce a proliferative signal for SVA and that it did not have a direct effect on RMS.

Key words: Zinc sulfate, olfactory neuroepithelial damage, epilepsy model.

P-108

Light microscopic investigation of protective effect of carnitine against kidney injury induced by cadmium in rats

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Objective: Cadmium is an environmental pollutant known to cause toxic effects on the kidneys and liver. Carnitine is a water-soluble molecule essential for the long-chain fatty acids. It is utilized for the transport of long-chain fatty acids into the mitochondrial matrix. The aim of the present study was to determine by light microscopy the cadmium and histological changes occurring in the kidney after administration of cadmium and effects of L-carnitine administered together with cadmium.

Methods: To this end, male Wistar Albino rats were divided into four groups: Control, cadmium, cadmium+carnitine, and carnitine. After the administration of the drugs, the rats were sacrificed and their kidneys were removed and fixed in 10% neutral-buffered formalin.

Results: Our light microscopy revealed necrosis, tubular vacuolisation, vascular congestion, glomerular damage and interstitial infiltration only in proximal tubules of the rats treated with cadmium.

Conclusion: It was also observed that application of carnitine mitigated the kidney injury triggered by cadmium. Through this study, we concluded that carnitine could undertake a protective role against the kidney injury caused by cadmium.

Key words: Rat, kidney, cadmium, carnitine, microscope.

P-109

Evaluation of cerebellar sizes of newborns aged 0-3 months by using MRI

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Objective: Cerebellum related studies address the existence of an important relationship between cerebellar volume reduction and mental functions. However, no studies have been found that specifically examine the infancy period in which cerebellar growth is particularly rapid. Therefore, by determining the average cerebellar sizes of infants aged 0-3 months, it is aimed to offer practical solutions to radiological examinations, to analyze the factors affecting cerebellar size, to investigate the relationship between cerebellar size and head circumference, weight, and height, to compare the cerebellar sizes among genders.

Methods: A total of 51 newborns aged 0-3 months (21 female, 30 male) who all applied to Karadeniz Technical University, Farabi Hospital, Department of Radiology for brain MRI and do not have any cerebrum/cerebulluma related structural anomaly have been included in this study. The investigations were performed by using 1.5 T MR System (Siemens Magnetom Symphony, Germany). The vermis height (VH), its anterior-posterior size (VAPS) and the height of the both ceribellar hemispheres (HH) have been measured through T1-based sagittal images by using automatic calibers at the workstation (Navigator, Siemens) whereas the anterior-posterior size of both hemispheres (HAPS) and trans-cerebellar diameter (TCD) have been determined through T2-based images. The obtained values have been compared by using SPSS statistics software.

Results: It has been found out that the sizes of VH, VAPD and HAPD-Left of female infants are larger than these of male infants ($p<0.05$) whereas no significant difference has been observed concerning other cerebellum dimensions ($p>0.05$) between female and male infants. The VH, TCD, HAPS-Right and HAPS-Left parameters of premature newborns (<37 pregnancy weeks) are statistically found to be significantly smaller ($p<0.05$) than full-term newborns (937 pregnancy weeks) whereas there exists no difference between two groups in terms of VAPD, HH-Right and HH-Left parameters ($p>0.00$).

Moreover, it has been determined that cerebellum dimensions are positively and medium-strength related to weight, height and head circumference (p=0.000) (r=0.30-0.64).

Conclusion: We hope that this study will shed light on further related research.

Key words: Dimensions of cerebellum, MRI, anatomy.

P-110

Effect of FK506 on spinal motor neurons following sciatic nerve injury: an ultrastructural and functional study

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Objective: Functional and ultrastructural investigation of the neuroregenerative/neuroprotective effect of FK506 on the early and late stage repair of the nerve after a sciatic nerve cut in alpha motor neurons.

Methods: 48 rats randomly divided in a total of 4 groups [control, sham, primary repair+ FK506 (-), primary repair+FK506 (+)]. FK506 was administered as 5 mg/kg/day for 6 weeks.

Results: Ultrastructure of the anterior horn was similar between primary repair+FK506 (+) and control group. While the motor neuron maintained its normal perikaryon structure, it did not display any edema or dissolution, being in close relation with the surrounding neuropil. Edematous spaces surrounding the perikaryon and edemas in astrocyte processes in some areas were apparent in the group which did not receive FK506. The control and sham groups findings appeared as normal values. SFI values of the groups displayed an elevation in the postoperative weeks. However -50 level could only be exceeded in 6th postoperative week (-48.81±13.65) in FK506 (+) group. Evaluation of the Pinch test results supported the sciatic function index data. Number of subjects with a Grade 3 withdrawal response at sixth postoperative week was 7 in primary repair FK506 (+) group, 3 in primary repair FK506 (-) group.

Conclusion: FK506 application following early stage surgical intervention after a nerve cut was detected to have positive effects on motor neuron ultrastructure. Furthermore, the neuroprotective/neuroregenerative effects of FK506 was found to be effective on both the nerve cell body and the axon.

Key words: FK506, motoneuron, sciatic nerve.

P-111

Does facial canons fit to Turkish women?

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Objective: The great scholars of the renaissance renewed or modified classical rules about the proportions of the human face. These rules were still accepted without dispute by artists and scientist. The purpose of this study was to determine the face proportions of Turkish women in terms of artistic anatomy and investigate the relation between the results of this study and the Canons determined by Dürer, Leonardo, Audran ve Martinez.

Methods: 147 female students educating in Trakya University Medical Faculty who had no orthopaedic and physical defect took place in this study. The Harpender anthropometer and vernier calipper were used in measurements. Vertex-basion, vertex- gnathion, vertex- trichion; trichion- nasion, nasion- subnasale ve subnasale- gnathion were measured on each subject.

Results: The measurement distances, mean values, standard deviations of this study are respectively: Vertex-basion: 165.82± 4,86; vertex-gnathion: 22.66±0.85; vertex-trichion; 5.53±069; trichion-nasion: 5.86±0.51; nasion- subnasale: 5.46±0.32 and subnasale-gnathion: 5.80±0.61. Results were compared with other ethnic groups.

Conclusion: It was determined that the facial proportions of Turkish women were not consistent with the "3 section facial canon" of Leonardo and Dürer, and the "4 section facial canon of Audran and Martinez. However, the results of this study were parallel with the equalities determined by Farkas.

Key words: Canon, face, artistic anatomy, anthropometry.

P-112

Temporomandibular joint mobility and mandible anthropometry

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Objective: The aim of our study was to determine the range of motion (ROM) of the temporomandibular joint (TMJ) in Turkish adult by using digital inclinometer and its correlation with the mandible anthropometry.

Methods: Seventy one volunteers who were studying at our university participated in this study. Maximum mouth opening, right excursion, left excursion and protraction degrees were determined with electronic digital inclinometer which was extremely sensitive but practicable. Besides, interincisial distance, mandible height, goniomastoid distance, thyromental distance and bigoinal distance were measured by using vernier caliper.

Results: The average values for our subject were found as follows: maximum mouth opening 29.01°; right excursion 4.09°; left excursion 4.28° and protraction 12.54°, respectively. The average values for anthropometric measurements were found as follows: Interincisial distance 69.87 mm, mandible height 90.04 mm; goniomastoid distance 68.70 mm, thyromental distance 78.60 mm and bigoinal distance 122.78 mm respectively.

Conclusion: The estimate of ROM values for the TMJ is important in the diagnostic and treatment of the musculoskeletal and neurological diseases affecting joint movement. We conclude that interincisial distance, mandible height, goniomastoid distance measurements may be a practical method for the evaluation of the ROM in this joint.

Key words: Anthropometry, temporomandibular joint, range of motion, biomechanics.

P-113

The diameter measurements at different levels of abdominal aortae on MDCT images

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Objective: In this study, we aimed to measure the diameters of abdominal aortae in different levels related with its branch which vessels originated from abdominal aortae such as coeliac trunk, superior mesenteric artery, right renal artery, left renal artery and inferior mesenteric artery by multidedector computed tomography (MDCT).

Methods: This retrospective study was performed on MDCT images of 600 patient cases obtained from Radiology Department, Meram Medical Faculty, Selçuk University. After examining 600 cases images, it was recorded 177 cases which images were clearly observed. But, 27 cases were not considered for measurements because of the deviation and variation of the aortae. The measurements were performed at visceral branches levels of the abdominal aortae in remaining 150 cases images (78 male, 72 female).

Results: In the diameter measurements, considering the transverse and sagittal direction, similar results were obtained in different levels of the abdominal aortae. But, in both directions and at whole levels measured male cases were found greater than females.

Conclusion: It is considered that the evaluation of abdominal aortic diameters may supply important data for clinician and may used as a control group in some diseases especially affecting vessel diameter and also provide a reference for the clinicial researchers to comparison between them.

Key words: MDCT, abdominal aortae, diameter.

P-114

Sternal index: a study on 734 MDCT

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Objective: Sternal index is created using the length of manibrum and corpus sterni from MDCT images. This study planned to determine the sternal index of people living in our region.

Methods: Our study was carried out on 734 (390 females, 344 males) MDCT image which admitted to the hospital for any reason, did not show sternal malformations. All images, Selçuk University, Meram Medical Faculty, Department Radiology between March 2008 and December 2009, were obtained from the department archives. Patients ages ranged from 20 to 84 years. Manibrum length (M) and corpus length (C) were measured on images. Sternal index was calculated from these measurements. Statistical analysis was performed with Student's t test.

Results: According to the results of the measurements, sternal index average was male 43.29 mm (26.11 to 76.53 mm), while female 47.97 mm (23.92 to 86.59 mm), respectively.

Conclusion: The sternal index of female was greater than male. This finding was found to be statistically significant ($p<0.05$). Sternal index shows variation in different populations. This study presents the sternal index of Turkish that may provide useful background information for clinical approaches.

Key words: Sternalis indeks, MDCT.

P-115

A case of intraabdominal undescended testis

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Absence of the right testis with a complaint referred to the urology clinic of Erciyes University in the 50-year-old male patient and intra-abdominal testis were identified in the survey. In the early period, fetal testis which was localized in the back of the abdominal cavity is a predominant endocrine gland. During the development of the testis started scrotum abdomen is extending an immigration question. Decencus of the testis through the inguinal canal takes 2-3 days starting from the 28th week. Four weeks later (32th week), it descends behind the peritoneum and processus vaginalis, and finally reach to the scrotum. During this migration in the inguinal canal, testis, inguinal canal or abdomen can stay in the deep. Staying in the back can cause infertility, testicular descent. After early childhood, testicular carcinoma in undescended testis are at increased risk. Planned surgery in patients with testicular localization affecting the success of the operation seems to be factors.

Key words: Undescended testis, Orchipexy.

P-116

A variation of sciatic nerve that its branches common fibular nerve and tibial nerve passed above and below piriformis musle: case report

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Objective: The sciatic nerve (SN) separates into terminal branches, common fibular nerve (CFN) and tibial nerve (TN) outside the pelvis. However, it may rarely be separated in pelvis and CFN and TN leave the pelvis from different routes. The aim of this study is to report a case with a variation of SN that its terminal branches CFN and TN passed above and below the piriform muscle respectively.

Methods: During the routine dissection of the lower limb, a variation of the sciatic nerve was observed in the right gluteal region of a 41-year-old male cadaver.

Results: In this case CFN passed (above the piriform muscle) through the suprapiriform portion and the TN passed (below the piriform muscle) through the infrapiriform portion of the great sciatic foramen. Then CFN and TN come together to compose SN. SN passed along the back of the thigh and divided into CFN and TN in the popliteal fossa. The relationships between the piriformis muscle and sciatic nerve have been classified into six groups by Beaton and Anson. According to this classification this is type 3 variation: CFN passes above the piriform muscle and TN passes below the piriform muscle. The prevalence of this piriformis muscle and SN variation according the combined results for reported variations is 1.2%.

Conclusion: Knowledge of sciatic nerve anomalies is important for clinicians performing manipulations such as imaging guided injections of the piriformis muscle, surgical operations such as total hip arthroplasty and piriformis tenotomy for piriformis syndrome.

Key words: Sciatic nerve, common fibular nerve, tibial nerve, variation.

P-117

Ductus deferens located out of the spermatic cord: case report

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Objective: Canalis inguinalis is a natural hiatus in the tissues of the anterior abdominal wall. It allows the passage between abdominal cavity and scrotum. In males it is the passage through which the testes descend into the scrotum and it contains funiculus spermaticus and nervus ilioinguinalis. Vas deferens is the continuation of the epididymis, starting at the epididymal tail, ascends in the spermatic cord and traverses the inguinal canal. The knowledge about variations of the structures in this region is very important for surgery. The purpose of this study is to report the rare localizational variation of ductus deferens.

Methods: A 27-year-old man underwent an examination for infertility. Oligoastenospermia was observed in his spermiogram. In color doppler ultrasonography the veins that formed pampiniform plexus were dilated and long term reflux was observed during valsalva maneuver. Microsurgical inguinal varicocelectomy was planned on the left side.

Results: During the operation skin, subcutaneous tissue and fascias were cut. Then at the level of anulus inguinalis superficialis spermatic cord and contents were found and exploration of the surrounding tissues was done. The while it has been seen that ductus deferens starts at the epididymal tail, as the continuation of ductus epididymis, ascends out of spermatic cord and passes through the external inguinal ring.

Conclusion: There is not any case determine a variation that distinct course of ductus deferens from the other contents of funiculus spermaticus. The definition of this rare variation will be useful to prevent iatrogenic injuries in this region such as herniorrhaphy and varicocelectomy.

Key words: Vas deferens, spermatic cord, anatomic variation.

P-118

Protective effects of omega-3 essential fatty acids against formaldehyde-induced cerebellum damage in rats

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Objective: In this study, neurotoxic effects of formaldehyde on cerebellum and protective effects of omega-3 fatty acids against these toxic effects were investigated at biochemical level.

Methods: For this purpose, 21 adult male Wistar rats were divided into three groups. Rats in group I were used as control. Rats in group II were injected with formaldehyde (10 mg/kg, i.p.) every other day. Rats in group III daily received omega-3 fatty acids via intragastric gavage while exposed to formaldehyde. At the end of 14-days experimental period, all rats were killed by decapitation. Then the cerebellum of rats were removed. The activites of catalase (CAT), superoxide dismutase (SOD), glutathione peroxidase (GSH-Px) xanthine oxidase (XO) and malondialdehyde (MDA) levels were determined in cerebellum specimens by using spectrophotometric methods.

Results: In our study, levels of SOD and CAT were significantly decreased, and GSH-Px, XO, MDA levels were significantly increased in rats treated with formaldehyde compared to control. Wherease, it was seen that there was an increase in SOD and CAT enzyme activities, and decrease in MDA, XO, GSH-Px levels in rats administered to omega-3 fatty acids with exposure of formaldehyde.

Conclusion: It was determined that exposure of formaldehyde increased free radicals in cerebellum of rats and this increase was prevented by administration of omega-3 fatty acids.

Key words: Formaldehyde, omega-3 fatty acids, superoxide dismutase, xanthine oxidase, malondialdehyde.

P-119

The distrubition and frequency of fracture cases in patients presented to Emergency Department of Tayfur Ata Sökmen Medical Faculty, Mustafa Kemal University

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Objective: In the present study, bone fracture cases that were presented to the Emergency Department of Mustafa Kemal University Tayfur Ata Sökmen Medical Faculty between October 2007 and October 2008 were examined.

Methods: Anatomical localization and the type of the fractures, and their distribution among age groups and etiological factors were investigated. Besides, additional risk factors like trauma, violence witin the family, and accompanying disease were also asked.

Results: Fracture rates were higher in males (61.3%) than females (38.7%). Fracture rate in adults was 63%, whereas it was 37% in children. Upper extremity fractures were common in children but lower extremity fractures were seen more frequently in adults. Most injured bones were radius, humerus and ulna in children and femur in adults. Fall from height, traffic accidents and sports injury was leading causes of fractures.

Conclusion: We hope that the information obtained in the present study will contribute the studies concerning trauma prevention.

Key words: Trauma, fracture, localization.

P-120

Morphological and morphometric evaluation of posterolateral cranium

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Objective: There are some anatomic landmarks on posterolateral cranium for surgery. Asterion, inion, mastoid process and suprameatal spine are important surgical anatomical structures. Position of asterion is used for defining the intersection of transverse –sigmoid sinus. Also knowing the distances of asterion to the surrouning structures is important in regional surgical procedures. Transverse sinus is lying along between the line of inion and zygoma base. Suprameatal spine is the surgical landmark used in defining the base of fossa cranii medius. Besides the inclination and volume of the mastoid process are used as an anthropologic point in differentiating of sex in forensic sciences. Therefore, the aim of this study is to evaluate morphological and morphometric relations of anatomical structures on posterolateral cranium.

Methods: One hundred of skulls were examined at the department of Anatomy, Dokuz Eylül University Faculty of Medicine. Mastoid foramen were morphologically evaluated. The each distances between asterion, mastoid process, zygoma base, suprameatal spine, inion and mastoid foramen were morphometricly determined by vernier caliper with 0.01 mm sensitivity for the left and right side of posterolateral cranium.

Results: The mastoid foramen on the right and left lateral side were present in 80% and 71% of cases, respectively. It was seen that maximally 4 foramens existed at both sides. Number of cases with four foramens on the right and left lateral side were 3 and 2 respectively. The variables were expressed as mean and ± standard deviation (SD). Measurements of right and left sides were evaluated paried the sample test. It was seen that measurements between the mastoid foramen and asterion, zygoma base, suprameatal spine are found statistically meaningful ($p<0.05$).

Conclusion: The results of the present study give additional information about landmarks of posterolateral cranium for not only anatomists but also for clinicians and surgeons.

Key words: Mastoid foramen, asterion, nastoid process, morphological, morphometric.