www.anatomy.org.tr
doi:10.2399/ana.08.019

anatomy
International Journal of Experimental and Clinical Anatomy

Abstracts for the XIIth National Congress of Anatomy with International Participation, 29th October - 1st November 2008, Mersin, Turkey

Anatomy 2008; 2 Suppl: 19-80, © 2008 TSACA

Invited Lectures and Conferences

(C-01 — C-13) (Panel 1-3)

C-01

Archeological Wealth of Kilikia Region

Durugönül S*

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C-02

History of neuroanatomy in Anatolia

Türe U*

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C-03

The Impact of neuro-anatomy on the evolution of neurosurgery

Yaşargil G*

University of Arkansas for Medical Sciences, Department of Neurosurgery, USA.

C-04

Structure of the brain's white matter

Türe U*

Yeditepe University, Faculty of Medicine, Department of Neurosurgery, Istanbul, Turkey.

C-05

Phylogenesis and architecture of the telencephalon investigated by in-vivo tractography

Valavanis A*

University Hospital Zurich, Institute of Neuroradiology, Zurich, Switzerland.

C-06

Fiber tractography – Clinical applications

Türe U*

Yeditepe University, Faculty of Medicine, Department of Neurosurgery, Istanbul, Turkey.

C-07

The impact of cisternal-anatomy on microneurosurgical explorations (Video)

Yaşargil G*

**University of Arkansas for Medical Sciences, Department of Neurosurgery, USA.*

C-08

Architectonic organization of the basal subarachnoid space investigated by neuroradiological techniques

Valavanis A*

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C-09

Neuro-visualization of the skull-base

Angtuaco E*

**University of Arkansas for Medical Sciences, Department of Radiology, USA.*

C-10

Neurovisualization of the white matter diseases

Angtuaco E*

**University of Arkansas for Medical Sciences, Department of Radiology, USA.*

C-11

Vascular anatomy of the CNS

Yaşargil G*

**University of Arkansas for Medical Sciences, Department of Neurosurgery, USA.*

C-12

Brain eye

Yaşargil G*

**University of Arkansas for Medical Sciences, Department of Neurosurgery, USA.*

C-13

Ethic principles in scientific publications

Ruacan Ş

**Hacettepe University, Faculty of Medicine, Department of Pathology, Ankara, Turkey.*

Panel-1

Novelties in neuroanatomy education

Weiglein A*, Koebke J**

Karl-Franzens-University, Institute of Anatomy, Graz, Austria; University of Cologne, Institute II for Anatomy**, Cologne, Germany.*

Panel-2

Problems in cadaver obtaining, possible solutions

Elhan A,* Şeker M **, Yeşilyurt H***, Dinç AH****

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Panel-3

Evaluation on academic promotion criteria

Akşit MD*, Akkın SM **, Sarsılmaz M***

Hacettepe University, Faculty of Medicine, Department of Anatomy, Ankara, Turkey; Istanbul University, Cerrahpaşa Faculty of Medicine, Department of Anatomy**, Istanbul, Turkey; Fırat University, Faculty of Medicine, Department of Anatomy***, Elazığ, Turkey.*

Oral Presentations

(O-01 — O-28)

O-01

Basilar artery angulation and vertigo due to the hemodynamic effect of dominant vertebral artery

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Vertebral arteries form the basilar artery at the pontobulbar junction. The vertebral artery may have dominancy in one of them. The branches of basilar artery supply blood for the vestibular nuclei and its connections. Vertigo is seen generally in the upper middle aged patients. Vertigo can be observed in dolichoectasia of basilar artery such as angulation and elongation, because of the diminished blood supply and changed hemodynamic factors of vestibular nuclei and its connections. We hypothesized that angulation or elongation of basilar artery can be estimated according to the unilateral vertebral artery dominant hypertensive patients. The basilar artery can angulate from the dominant side of vertebral artery to the recessive side. These angulation and elongation can effect the hemodynamic factors in absence of growing collateral arteries. So, the vertigo attacks may occur in these patients.

Key words: Dominant vertebral artery, basilar artery angulation, vertigo.

O-02

The anatomy of the minor branches of the basilar artery

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The pontine arteries arise from the basilar artery which is quite important for the posterior circulation of the brain. Various classifications for the pontine arteries have been used by several authors until now but this variety is confused. Also there is no adequate study about these branches. In this study, we decided to examine the pontine branches of the basilar artery. Fourty-five human brainstems were examined in this study. The vertebrobasilar arterial system was injected with colored latex under pressure. The specimens were fixed in 10% formaldehyde solution. The basilar artery and its branches were produced under a stereoscopic microscope. In our study, we defined the anterior inferior cerebellar artery (AICA), the superior cerebellar artery (SCA) and the posterior cerebral artery (PCA) whose arterial territories are well known and which are larger in diameter than the other branches of the basilar artery as the major branches, where as the labyrinthine artery and the pontine branches were defined as the minor branches. We examined the minor branches as the perforating branches and the cranial nerve branches which were classified variously until now The understanding of the vascular pattern of the posterior fossa is unavoidable for preserving the branches of the basilar artery during surgery and preventing many complications and also comprehending some vascular syndromes associated with the occlusion of the various groups of branches. The minor branches can be affected by some neurovascular diseases so understanding of the distrubution of minor branches is essential for safe neurosurgical operations.

Key words: Basilar artery, pontine branches, labyrinthine artery, trigeminal nerve.

O-03

The anatomy and clinical significans of the trigeminocerebellar artery

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The trigeminocerebellar artery (TCA) which branched from basilar artery supplies both the trigeminal nerve root and the cerebellar hemisphere. The previous studies provide insufficient data about the prevalence of this artery. In this study, we examined its course and origin. Fourty-five human brainstems were examined in this study. The vertebrobasilar arterial system was injected with colored latex under pressure after ligation of the posterior communicating arteries. The specimens were fixed in 10% formaldehyde solution. The arteries were produced under a stereoscopic microscope. We observed the TCA in 12 sides of the 45 brainstems (13.3%) in our study. We

distinguished the four segments of TCA; the pontine, trigeminal, cerebellopontine and the cerebellar segments. Although it was mentioned that TCA originates from the same level of the superolateral pontine artery (superior trigeminal branch), we defined in our study that 10 of the arteries coursed like superolateral pontine artery (superior trigeminal branch), 3 of them coursed like inferolateral pontine artery (inferior trigeminal artery). Also, TCA was bilaterally observed on one brainstem. In previous studies, it was indicated that TCA supplied the part of the cerebellum that is normally perfused by the anterior inferior cerebellar artery (AICA) so the TCA could be regarded as a hypoplastic AICA with higher origin. At the same time, the AICA was already present on the ipsilateral side with TCA and agreed that TCA could represent a specific, unique branch of the basilar artery. In our study, we defined distinct results about TCA, especially its prevalence and origin in a large series of cadavers.

Key words: Trigeminocerebellar artery,basilar artery, trigeminal nerve, trigeminal neuralgia.

O-04

Neurovascular relationship and variations of the oculomotor nerve

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The understanding of the vascular relationship and variations of the third nerve is very important for comprehending oculomotor nerve compression and also preventing complications during the posterior fossa surgery. In this study, we examined the oculomotor nerve's vascular relationships with the posterior cerebral and superior cerebellar arteries. In addition to that, we tried to describe some rare neurovascular variations. 140 hemispheres from 70 adult human cadaveric brains were investigated in this study. Internal carotid and basilar arteries were cannulated and injected with colored latex. The neurovascular structures were exhibited under a surgical microscope. The relationship between the oculomotor nerve and close vascular structures were examined and the arterial branches that penetrated the oculomotor nerve and neurovascular variations were noted in this study. We hope that, these findings will be benefit for a surgical procedure consists of the microvascular decompression of the nerve and avoiding damage to the oculomotor nerve vasculature.

Key words: Oculomotor nerve, nerve compression, superior cerebellar artery, posterior cerebral artery, variation.

O-05

NADPH-d and Fos reactivity following experimental spinal cord injury (hemisection) and embryonic neuronal stem cell transplantation

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In this study, the role of nitric oxide (NO) in neuropathic pain and the effect of embryonic neural stem cell (ENSC) transplantation on NO content in spinal cord neurons were investigated by administration of NO donor L-arginine and NO synthase inhibitor L-NAME in rats after spinal cord injury (SCI) as well as in rats with ENSC transplantation. 3 groups of Sprague-Dawley rats were used (n=30 each): control (laminectomy), SCI (hemisection at T12-T13), SCI + ENSCT. Animals were treated with L-NAME (75mg/kg/ip) and L-arginine (225 mg/kg/ip) 2 h before perfusion for acute and for 28 days for chronic groups, physiological saline for acute and chronic controls. Fos-immunohistochemistry and NADPH-d histochemistry were performed in spinal cord segments rostral and caudal to the injury site. The number of Fos-labelled neurons decreased in acute and chronic L-NAME and decreased in acute L-arginine groups. Following ENSC, the number of Fos labeled neurons did not change in acute L-NAME, but decreased in chronic L-NAME groups. Fos-immunoreactive neurons decreased in acute and chronic L-arginine groups. The number of NADPH-d-reactive neurons decreased in acute L-NAME and increased in L-arginine groups with and without ENSC. In chronic L-NAME groups, NADPH-d-reactive neurons decreased in animals with and without ENSC, more significant in ENSC transplantation animals. Results of this study confirms the role of NO in neuropathic pain and shows an improvement following ENSC transplantation, observed as a decrease in the number of Fos-immunoreactive and NADPH-d(+) spinal neurons in spinal cord segments rostral and caudal to SCI Supported by TUBITAK-SBAG104S330.

Key words: Embryonic neuronal stem cell transplantation, nitric oxide, neuropathic pain.

O-06

The effect of chronic mild stres on hippocampal neuron number in postnatal period in rats

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Objective: In the present study, the effect of pre-fertilization chronic mild stress on hippocampal neuron number of adult rats in postnatal period was investigated using stereological method.

Methods: Study is carried out on 18 Wistar albino rats; 6 females in the stress group, 6 females in the control group and 6 males to be used for mating. Chronic mild stress (CMS) was induced in rats of the stress group for 4 weeks, followed by a post-CMS waiting period of 5-weeks. Rats were left for mating at the end of the post-CMS period. After the litters obtained,11 rats from CMS group and 11 rats from control group (total 22 rats) were decapitated and their brains were removed by craniotomy. The brains were frozen in cryostat chamber and then cut at horizontal planes at a thickness of 150 micrometers. Sections collected using systematic random sampling were stained with haematoxylin-eosin. Hippocampal neuron numbers were determined by stereological optic fractionator's method under light microscope using a monitor.

Results: Significant differences were found between CMS and control groups in both right and the left hippocampal neuron numbers of the litters ($p<0.05$). But there was no significant difference between the right and left hippocampal neuron numbers of CMS group and the right and left hippocampal neuron numbers of control group ($p>0.05$).

Conclusion: Chronic mild stress sustained before fertilization might reduce hippocampal neuron numbers of adult rats in postnatal period.

Key words: Chronic mild stres, hippocampus, neuron number, rat, stereology.

O-07

Massive hippocampal neuron loss caused by olfactoric bulbectomy as animal model of depression

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Objectives: Olfactoric bulbectomy is an established animal model for various behavioral and neurochemical alterations seen in depression. However, recent evidence in the literature pointed to possible neurodegeneration in the hippocampus involved in these alterations following OB. Hypothesis: subjecting rats to OB results in neuron loss in the hippocampus and other signs of neurodegeneration in the brain.

Methods: adult rats were subjected to OB or sham operation and the hippocampus was assessed with high precision design-based stereology and immunohistochemistry for neuropathological alterations 2 weeks and 12 weeks after OB or sham operation. Half of the OB animals were administred flouxetine (SSRI) throughout the post-op period.

Results: already 4 weeks after OB the operated animals showed a significant loss of pyramidal cells in both the hippocampal CA12 and CA3 compared to sham operated animals which was attenuated by administration of flouxetine. 12 weeks after OB, however, loss of neurons could not be attenuated by flouxetine. This was accompanied by the development of internal hydrocephalus in the brain of the OB animals, resulting in massive enlargement of the lateral ventricles and substantial thinning of the cerebral cortex. Immunohistochemical detection of GFAP showed a substantial loss of astrocytes throughout the hippocampus in the post-OB period, particularly 12 weeks after OB.

Conclusions: In particular neurodegeneration in the hippocampus accompanied by loss of astrocytes, internal hydrocephalus and secondary thinning of the cerebral cortex must be considered as contributing factors to behavioral, immune and neurochemical changes observed after OB as animal model of depression.

Key words: Depression, animal model, hippocampus, histopathology, stereology.

O-08

Apoptotic changes within various brain regions of cecal ligation and puncture: an experimental rat model of sepsis

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Sepsis occurs in 20-50% of patients admitted to non-cardiac intensive care units and despite substantial recent progress in

medical treatment; it continues to be a serial clinical challenge. Sepsis Associated Encephalopathy (SAE) occurs in 9 to 71% of all critically ill patients suffering from sepsis. Furthermore, it has been suggested that the apoptosis play a potential role on the pathogenesis of SAE. Apoptotic cell death in the dentate gyrus (DG), cornu ammonis (CA), subventricular zone (SVZ) and central autonomic centers were investigated using TUNEL and Caspase- 3 immunohistochemistry in cecal ligation and puncture (CLP) model; a rat model of sepsis. Twenty-four Wistar rats were used and divided in to three different groups as CLP group (n=8), sham-operated (n=8) and un-operated control groups (n=8), respectively. Significantly higher number of TUNEL positive apoptotic cells were observed in the CLP group at median preoptic nucleus, SVZ, DG, CA1 and CA3 ($p<0.01$, for all comparisons). However, there were no significant difference at nucleus tractus solitarius (NTS), ventroposterior parvocellular nucleus (VPPC), anteroventral periventricular nucleus (AVPC), granular insular cortex (GI), agranular insular cortex (AGI), perifornical nucleus (PeF), zona incerta (ZI), dorsomedial hypothalamic nucleus (DMD) and rostral-ventrolateral medulla (RVLM) for the TUNEL positive cells ($p>0.05$). Caspase-3 positive cells further detected at the SVZ, median preoptic nucleus, DG, CA1 and CA3 within CLP group. In conclusion, the apoptotic changes of the neural cells within various brain regions may not only bare potential role in pathophysiological mechanisms of SAE, but also exert effect on the hemodynamic symptoms observed in sepsis.

Key words: Sepsis, sepsis associated encephalopathy, apoptosis, TUNEL, cecal ligation and puncture.

O-09

Increased adult neurogenesis in SVZ of rat brain an experimental model of sepsis

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Adult neurogenesis in the adult human brain occurs in two main areas, dentate gyrus (DG) of hippocampus and subventricular zone (SVZ). Newborn neuronal cells in the adult brain arise from residual stem cells that may contribute to the normal functioning or development of the CNS. Adult neurogenesis may be well affected by environment stimuli, cytokines, neurodegenerative disease and many other factors and situations. To our knowledge, it's not known how sepsis affects the neurodegenerative and regenerative balance in the brain. Thus in this study, neurogenesis at the SVZ is investigated using BrdU immunohistochemistry in cecal ligation and puncture (CLP) model of sepsis in an attempt to reveal possible relation between sepsis and neurogenesis. Twenty- four Wistar rats (CLP, sham-operated and un-operated groups; n=8 for all three groups) were injected intraperitoneally with single dose of BrdU (200 mg/kg) two hours before sacrification which performed 24 hour after the induction of CLP. After transcardiac perfusion and fixation, brains removed and embedded in paraffin. Paraffin sections of brains were stained using BrdU immunohistochemistry method. Significantly higher number of BrdU positive cells were found in CLP group (670.3±599) compared to sham-operated (313.1±52.3) and un- operated control groups (231.2±26.4) ($p<0.01$, for all comparisons). It's tempting to suggest that various neurogenetic factors would trigger adult neurogenesis, at least in SVZ, in an attempt to compensate for the devastating effect of sepsis on various brain regions.

Key words: Adult neurogenesis, sepsis, SVZ, ceacal ligation and puncture.

O-10

The protective effect of fish n-3 fatty acids on cerebral ischemia in rat prefrontal cortex

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This study presents neuroprotective effects of fish n-3 EFA on the prefrontal cortex after cerebral ischemia and reperfusion. Eighteen rats divided into 3 groups. Group A rats were used as control. Cerebral ischemia and reperfusion was produced in rats either on a standard diet (Group B) or a standard diet plus fish n-3 EFA for 14 days (Group C). The malondialdehyde (MDA) levels and activities of superoxide dismutase (SOD) and catalase (CAT) were measured and the number of apoptotic neurons was counted. The levels of MDA and activities of SOD increased in Group B rats as compared Group A rats and decreased in Group C rats as compared to Group B rats. The activities of CAT increased in group C as compared to group B rats. The number of apoptotic neurons in the prefrontal cortex was lower in Group C as compared to Group B rats.

Key words: Cerebral ischemia; prefrontal cortex; rat; fish n-3 fatty acids.

O-11

The innervation patterns of superficial flexor muscles of forearm in human fetuses

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We aim to determine the pattern and the variations of median and ulnar nerves' muscular branches, which innervate forearm superficial flexor muscles, in human fetuses in this study. Median and ulnar nerves dissections were made on the 200 arms and forearms of 100 fetuses (50 males and 50 females). We determined that the distribution of the median nerve is very variable (single or common trunk). We found that the first muscular branch of median nerve went to pronator teres muscle, in 98 forearms, and innervation of pronator teres muscle was classified as 2 type and 4 subtype. We observed that the first muscular branches of the ulnar nerve went to flexor carpi ulnaris muscle in all arms, and innervation of flexor carpi ulnaris muscle was classified as 2 type. The most commonly determined distrubition type (type 1) was classic two branches each goes to flexor carpi ulnaris muscle and flexor digitorum profundus muscle (88.5%). We observed a median-ulnar anastomosis of Martin-Gruber in 7.5% of the forearms. The course, innervation patterns and variations of the muscular branches of median and ulnar nerves should be well known by the specialists especially dealing with the local surgery of this region.

Key words: Median nerve, ulnar nerve, human fetuses, forearm superficial flexor muscles.

O-12

The relationship between deep branch of the radial nerve and supinator muscle in human fetuses and adults

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Radial nerve is one of the important branches of the posterior fascicule. It divides its main two branches as a superficial and a deep close to the cubital fossa. We planned to investigate the course of the deep branch throughout the supinator muscle. In this study we observed total 80 upper extremities from 20 formalin fixed fetuses (10 male and 10 female) ranging from 20-37 weeks of gestation and 20 adult cadavers (12 male and 8 female, mean 65+-15 years old). Superficial branch was observed in its normal course at the forearm. Deep branch gave a branch to the extensor carpi radialis brevis muscle before entering the arcade of Frohse and continued below the supinator muscle. There were also two minor branches, a medial and a lateral, accompanying to the main nerve. There were 3 different branching patterns of the deep branches in fetuses. The deep branch divided its branches at entrance of the supinator in 2 (5%) forearms, after entrence of the supinator in 5 (12.5%) forearms and after the supinator in 33 (82.5%) forearms. The course was bilaterally same in 19 fetuses. Dividing pattern at the entrance of the supinator was not seen in adults. Only 3(7.5%) were seen at after entering to the supinator (2 left and a right) and 37(92.5%) were seen at after the supinator. The knowledge about the course of the deep branch throughout the supinator will be useful to clinicians in some clinical and surgical scenarios such as the dislocations of the radial head and the fractures of the radial proximal end.

Key words: PIN, deep branch of the radial nerve, supinator muscle.

O-13

The role of supinator in lateral epicondylitis

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Objectives: Anatomical studies on lateral epicondylitis have mainly involved the extensor carpi radialis brevis. Nevertheless, the supinator muscle has also a complex origin from the lateral epicondyle, the radial collateral ligament, the annular ligament, the supinator crest and the fossa of the ulna. The aim of the present anatomic and radiological study was to determine the role of the supinator muscle in lateral epicondylitis.

Methods: The anatomical characteristics of the tendons of the supinator muscle and the other extensor muscles were observed on 50 upper extremities of 25 fixed cadavers. The entrance of the PIN into the supinator muscle and its relations with the neighboring anatomical structures were evaluated. Volume measurements for supinator muscle in 20 patients with the diagnosis of unilateral lateral epicondylitis were performed

during radiological study. The healthy elbows of these patients were assessed as control, and found values were compared statistically.

Results: The dissections revealed a strong structure constituting the white and the glossy tendinous portion of the supinator muscle. Under this structure, the PIN entering the supinator muscle through the arcade of Frohse might be subjected to compression in dynamic increases of volume. Mean supinator muscle volumes were 5.80 and 5.45 cm3 in lateral epicondylitis and control groups, respectively. The difference was statistically significant between two groups by Mann Whitney U test (p 0.02).

Conclusions: In cases resistant to conservative treatment, the effect of the supinator volume increase and the presence of radial tunnel syndrome should be kept in mind in treatment planning.

Key words: Lateral epicondylitis, supinator muscle, posterior interosseous nerve, anatomy, magnetic resonance imaging.

O-14

An alternative approach for anterior sciatic block

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Sciatic nerve block is a common technique used for providing anesthesia and analgesia of the lower extremity. It is classically performed through posterior or lateral approaches. However, anterior approach should be considered in certain conditions which complicate positioning of the patient or if the patient has to be put in supine position. The success rate of the sciatic block with previously defined approaches was reported to be low and the complication rate to be high by recent studies. So we aimed to conduct an anatomical study defining safe and certain landmarks to achieve anterior sciatic nerve block successfully. This study was conducted on 10 lower extremities of 5 adult cadavers. Initially, certain landmarks and practical measurements were identified on 8 lower extremities to reach the sciatic nerve ideally. After defining this point, methylene ink was injected to both extremities of one cadaver by an anesthetic needle through the defined approach. Then the route of the needle was evaluated by dissection and observed whether the needle reached the sciatic nerve or not without injuring any vascular structures. The ideal site of needle insertion was found to be on a point located 10 cm distal to the perpendicular line drawn midway through the line connecting anterior superior iliac spine (ASIS) and the pubic tubercle (PT). The mean distance between this point and the ASIS and PT was measured as 16.2 and 8.6 cm respectively. The point where the needle reached to block the sciatic nerve was 2 cm distal to the lesser trochanter. The mean distance between this point and the greater trochanter and the ischial tuberosity was measured as 9.7 and 7.7 cm respectively. According to the results of our study, if the distal tip of the anesthetic needle oriented towards ASIS making an angle of 45 degrees with horizontal and vertical axis, it is possible to block sciatic nerve safely with an anterior approach.

Key words: Sciatic nerve block, anterior approach.

O-15

The effects of anti FGF-9 on embryonic culture

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Tecnological impruments make human life easier but its products culd be harmful for life and development. These harmful products cause abortions and malformed babies. Primordias of embryonic organs develop during 9.5-11.5[th] days of embryonic development in rats. Exposure of teratogens during this period results with abortion or embryonic malformations. In vivo (in living organisms) and in vitro (out of living organisms) studies are being made to understand the effects of drugs and teratogens. These studies help us to detect the malformations at an early stage. In vitro embryo culture technique that include between the 9,5 and 11,5th days of the embryonic period culd be suitable for studying the effects of anti fibroblast growth factors on the embryo. In this study, monoclonal fibroblast growth factor-9 (anti FGF-9) is applied to the embryonic culture and its effects were observed. After the 48 hours of culture period, effects of different doses of anti FGF-9 (1 microgram, 2 microgram, 4 microgram) on the embryos were evaluated morphologically. Total morphologic score in the control and research group (1, 2 and 4 microgram) were 59.6±0.51, 43.7±4.94; 42.4±13.52 and 29.2±10.97 respectively. According

to Morphologic Scoring Systems, there were a significant regression in the research group in the total morphologic score, yolk sac diameter, crown-rump lengths and somite number when compared to the control group. As a result it was clear that. The results suggest that anti FGF-9 may cause a regression in the embryonic development period.

Key words: Rat, in vitro, embryonic culture, FGF-9, anti FGF-9.

O-16

The effects of amphotericin B lipid formulation on rat kidney

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The goal of our study was to investigate the nephrotoxic effects of Amphotericin B lipid complex (ABLC) and liposomal Amphotericin B (L-AMB), two separate lipid forms of Amphotericin B on rat kidneys at long and short term treatment application periods. For this purpose 36 Wistar Albino rats were divided into six groups. Group 1 is composed of a control group by administrating intraperitoneal 0, 9 molar serum physiologic, Group 2 and 3 are treated with 5 mg/kg L-AMB and 5 mg/kg ABLC for 14 days. Group 4 is composed of a control group by administrating intraperitoneal 0, 9 molar serum physiologic for 28 days, Group 5 and 6 are treated with 5 mg/kg L-AMB and 5 mg/kg ABLC for 28 days. While the blood levels between the control group and experimental groups for 14 and 28 days were compared, a decrease was observed in plasma chlore ($p<0.05$). Plasma Sodium and Phosphor values differ between Groups 3 and 6 ($p<0.05$), no significant difference is observed between Groups 2 and 5. In ultrastructural examination of 2nd and 3rd groups, the epithelial cells of apical cytoplasm, different sized lysosomes and small vacuolar structures were observed. After all in Groups 5 and 6, vacuolar structures which are located in the lysosomes of proximal tubule cells and in the apical cytoplasma increased . As a result, it was found that proximal and distal tubule epithelial cells are not affected from these treatments after 14th day, but this treatment caused little changes in these cells after 28 days.

Key words: Amfoterisin B lipid formulations, rat, kidney, nephrotoxicity, ultrastructure.

O-17

Immunohistochemical investigation of liver injury in toluene-inhalated rats and protective effect of melatonin

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This study was designed to investigate the harmful effects of toluene inhalation and protective effects of melatonin in the liver of rats. For this purpose, 21 adult male Wistar-Albino rats were used. The rats of group I was used as control group. The rats of group II were exposed toluen (3000 ppm/1hour) for 4 weeks. The rats of group III treated with melatonin (10 mg/kg/i.p.) plus toluen inhalation. At the end of the experimental period liver tissues were taken from the animals and fixed in neutral formalin solution. Then tissue specimens were embedded in paraffin and sectioned. Paraffin sections were stained with different dyeing methods. In addition, the samples were immunohistochemically stained using avidin-biotin-peroxidase method for bax immunoreactivity. In toluene inhaleted group macrovesicular fatty change, ballooning degeneration, mild pericentral fibrosis was observed under the lighth microscopic exemination. In addition, bax immunoreactivity were significantly increased compared to those in control group. Administration of melatonin to toluene-treated rats significantly decreased bax immunoreactivity and ameliorate the other histopathological changes. In conclusion, the present study has shown that inhalated toluene induced liver damage was significantly suppressed by melatonin treatment.

Key words: Toluene, melatonin, liver, immunohistochemistry.

O-18

Unbiased estimation of the cerebral volume and surface area using the Cavalieri principle on magnetic resonance imaging (MRI)

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Stereology is a sampling technique used to generate mathematically unbiased estimates of geometric properties of three-

dimensional structures based on two-dimensional slices of the object. Using this method, volume and surface area estimates may be generated in a robust, reliable and time-efficient manner based on magnetic resonance (MR) image data. We also conduct a series of inter- and intra-rater repeatability tests based on 15 normal human brain, which demonstrated the reliability and robustness of stereological techniques. This parameter may be of use in identifying subtle cortical developmental malformations in diseases such as epilepsy, schizophrenia and other neurodegenerative diseases.

Key words: Stereology, Cavalieri principle, point counting, MRI, cerebral volume, cerebral surface area.

O-19

Gustaf Retzius, 1842-1919, a famous Swedish anatomist

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Gustaf Retzius published more than 300 scientific papers in descriptive macroscopic and microscopic anatomy, comparative anatomy, embryology, anthropology, zoology, botany and pathological anatomy. In 1869 he had started working with Axel Key, professor of pathology in Stockholm, on the anatomy of the nervous system and the connective tissue. The results of these studies were published in "Studien in der Anatomie des Nervensystems und des Bindegewebes" in 1875 and 1876. These, as well as the publications described below, were all in folio size. His most monumental studies were "Das Gehörorgan der Wirbelthiere", from 1881 and 1884, containing detailed descriptions and extraordinary drawings of the inner ear of a large number of vertebrates, from myxine to man. Other important contributions dealt with the nervous system in invertebrates as well as in vertebrates. These were published in 1881 and 1882 as "Biologische Untersuchungen", followed by a series of 18 volumes of "Biologische Untersuchungen, Neue Folge", 1890 - 1914. His studies became of great importance in support for the neuron doctrine. This was emphasized with great appreciation by Ramón y Cajal. In addition to his magnificent work "Biologische Untersuchungen, Neue Folge", Retzius published three more comprehensive studies. These were “Das Menschenhirn", from 1896, "Crania suecica antiqua", from 1899, and "Das Affenhirn", published in 1906. Gustaf Retzius became a member of many of the most prominent academies abroad - in Berlin, London, Paris, St. Petersburgh, Rome, Washington and Vienna. He was nominated for the Nobel Prize eleven times, the first time by Ramon y Cajal.

Key words: Gustaf Retzius, anatomy, neuroanatomy.

O-20

Aspect of anatomists and acupuncturists for acupuncture at home and in the world, acupunture applications in sports medicine

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Acupuncture was accepted by WHO in 1976, by FDA in 1986, By Turkey Health Ministery in 1991 that take its accepted modern health sysytem. Every year, in USA and Europe country, many people use this system. In sports, acupuncture was used that so much cheap, simple and quickly effect. Next years, acupuncture can used for many health problems, all in the world.

Key words: Acupuncture, sports medicine.

O-21

Ramification variations of the extracranial part of the facial nerve and its relation the parotid duct and the transverse facial artery

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Courses of the branches of the facial nerve after leaving the stylomastoid foramen and its branches relationship with the parotid duct and the transverse facial artery were examined to preventing injuries of the extracranial branches of the facial nerve which may occur during parotid gland and the masseter muscle surgery.This study was performed on 33 half heads of 18 fixed cadavers. Mean age was 52.4 years. All tissues of parotid gland were removed without damage to the facial nerve. The nerve was exposed its extracranial course. The arising point and supplied muscles of the posterior auricular branch of the nerve; and branches forming to parotid and buccal plexuses were researched. Also, the relationship with the parotid duct and the transverse facial artery; and the branches of the facial nerve was

examined. A branch exiting from petrotympanic fissure and joining the facial nerve; and two rami of the facial nerve exiting from stylomastoid foramen were found.The posterior auricular branch was directly arised from the facial nerve before entered to parotid gland in 20 sides. The branch was arised from onset of cervicofacial ramus in 12 sides. It was arised from temporofacial ramus in one side. Pattern differences of parotid and buccal plexuses were identified. We thought that knowledge of courses and relationships of the branches of the facial nerve will provide a great benefit in preventing complications which may occur during parotid gland, parotid duct, facial reconstruction and some facial cosmetic surgery.

Key words: Facial nerve, parotid duct, transverse facial artery, intraparotid plexus.

O-22

An unidentified branch of the lingual nerve: gingival branch

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The aim was to demonstrate the unidentified branch of lingual nerve (LN) which provides the sensory to lingual gingiva and mucosa. We carried out dissections of sublingual and pterygomandibular spaces on 13 formalinized cadavers. An unnamed branch, which also was not demonstrated in any of the anatomical books before, was encountered bilaterally in 84.6% of all specimens. The branch was extending horizontally from the medial mandibular cortex at the level of the retromolar pad to mesial of lower first molars. It was supplying lingual periosteum, gingiva and mucosa overlying medial alveolar process. The mean diameter of the branch was measured to be 0,67 (±0,1) mm at right and 0,65 (±0,1) mm at left at the branching side. The mean length was 29,6 (±4,5) mm at the right and 28,3 (±4,3) mm at the left. The mean distance from alveolar crest was 5,9 (0,9) mm at the right and 5,7 (±0,9) mm at the left side. LN is known to provide sensory to the lingual soft tissues, however none of the anatomical textbooks illustrate presence of such a subdivision or a branch supplying that part of the oral cavity. We describe the existence and the morphologic characters of this unnamed branch providing sensorial innervation to the lingual mandibular soft tissues. We recommend to name this branch as "the gingival branch of lingual nerve".

Key words: Nerve branch, lingual nerve, lingual gingiva, mandibular nerve.

O-23

An alternative way for percutaneous approach of electromyography of cricopharyngeus muscle to evaluate the swallowing disorders: preliminary results of cadaveric and clinical studies

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Cricopharyngeus is the only muscle of which electromyography is used in the differential diagnosis of the swallowing disorders. In this procedure the needle electrode is entered just posterolateral to the cricoid cartilage. Because of difficulty of this method we tried an alternative way to reach the muscle easily. These preliminary results contain the applications on 10 cadavers and 40 patients. The study was approved by the institutional ethics committee and all patients provided informed consent. On the cadavers lying in the supine position a spinal needle or an injector needle and on the patients in sitting position a 26-G concentric needle electrode (Technomed Europe, The Netherlands) were used. The needle or needle electrode was inserted through the skin at the level of superior border of cricoid cartilage, about 1 cm anterior to the anterior border of sternocleidomastoid muscle with 60 degrees angle to the frontal plane in the posteromedial direction. After inserting the needle on cadavers an anatomic dissection was performed to control the structures passed through. In all cadavers we reached the muscle. In one of the cadavers anterior thyroid artery and in another one a thick anterior jugular vein were damaged bilaterally. In clinical trial three patients were eliminated initially because of unsuitable conditions. In all of the remaining 37 patients the needle entered the muscle at the first try that was confirmed by electromyographic responses. No complications were recorded in 24-hour controls of the patients. The mean needle insertion depth was 30 mm on cadavers and 2.65 cm on patients. Regarding to these preliminary results, we think that our method can be more useful for practical application of cricopharyngeus muscle electromyography.

Key words: Cricopharyngeus muscle, electromyography, percutaneous approach, topography.

O-24

Three dimensional animation in anatomy

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Animation is the illusion of movement created by flipping through a sequence of still images. As the images quickly replace each other on the screen, it creates the illusion that the figures are moving. The artist pictures the movement in his mind and plans out each drawing to create that action. As each picture is drawn, movement is shown through the change of the objects in the scene and their positions in the drawing. The number of images and the rate at which they are viewed controls the speed of the action (Parent 2007). Computerized animation is becoming an increasingly popular method to provide dynamic presentation of anatomical concepts (Lozanoff ve ark. 2003). It has been reported that students with high spatial ability had a more positive attitude towards inclusion of high-quality 3D graphics than students with low spatial ability. Huk et al. and Steinke et al. have also noted that students with low spatial ability spend significantly more time viewing high quality 3D animations than students with high spatial ability (Huk ve ark. 2003; Steinke ve ark. 2003). Being a successfull 3D artist means utilizing a variety of disciplines. You don't to be an expert in all of this areas, but having an understanding of one or a few is helpful. There are five core techniques when working in 3D. The freelance artist working on his or her own will need to become at least proficient in all five areas. The five areas of 3D are: Modelling, texturing, lightning, animating and rendering. Animating is the most complex task in 3D. Creating smooth and logical motion can take twice as long as all the other elements of 3D combined. Anatomic lectures supported by dynamic and modern technologies play an important role in the education of medical students. We aimed to increase the satisfaction and learning skill of our students by using 3D animations prepared in our department.

Key words: Three dimension, digital animation, modelling, anatomy.

O-25

Reference values for radiologic evaluation of cervical canal, vertebral body, and Torg-Pavlov ratio

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The present study was aimed to analyze the mean values of the cervical dimensions on plain lateral radiographs. The sagittal canal diameter (SCD) and vertebral body diameter (VBD) were measured using an electronic digital caliper from the levels of C2 to C7 in 424 (226 women, 198 men) radiographs of healthy people aged 20 to 50 years. After these measurements, Torg-Pavlov ratio (the ratio between the SCD and the VBD) was estimated. The mean SCD was found between 19.8±1.2 mm and 18.8±0.8 mm from the levels of C2 to C7 in women whereas same dimension was between 20.4±1.1mm and 19.5±0.9 mm in men. Additionally, the mean values of the VBD were found between 17.1±0.9 mm and 18.4±0.7 mm in women and between 18.0±1.1 mm and 19.4±1.0 mm in men from the levels of C2 to C7. The Torg-Pavlov ratio was observed 1.1 to 0.9 in women and 1.0 to 0.9 in men.

Key words: Cervical vertebra, sagittal canal diameter, vertebral body diameter, Torg-Pavlov ratio.

O-26

'Sulcus nervi dorsalis penis/clitoridis': Anatomical examination by computed tomography with 64 detectors in virtual environment

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Objective: 'Sulcus nervi dorsalis penis/clitoridis (SNDP/C)', is a groove located on the inferior ramus of pubis and ventral surface of the body of pubis, where dorsal nerve of penis in male and dorsal nerve and artery of clitoris in female run. Close relation of the dorsal nerve of penis/ clitoris and pubis, represented by the course of SNDP/C has a major impact on surgical disciplines.

Method: In the study, healthy 66 males (41.56±14.86 age) and 43 females (41.14±14.15 age) of Eastern Anatolia population were examined with the multislice CT with 64 detectors. The volume images involving bone structures that form pelvis were obtained. On the workstation in virtual environment the presence of SNDP/C was detected on the right pubic bone, its length was determined based on the pubic bone length, and its width was measured with electronic digital calipers as milimeter value numerically.

Results: SNDP/C was observed in 79 (72.4%) cases totally, but it was not observed in 30 (27.6%) cases. SNDP/C length is

shorter than one-third of pubic bone among 42 (53.1%) people whereas it is longer than one-third of pubic bone among 37 people (46.9%). SNDP/C width was determined as 4.15±1.73 (1.5-10) mm (n=79). There was SNDP/C in 36 (83.7%), of females and 43 (65.2%) of males. The length of SNDP/C was identified as shorter than one-third of pubic bone in 15 (34.9%), of females and 21 (31.8%) of males. The width of SNDP/C was found as 4.49±2.03 mm in females and 3.86±1.40 mm in males.

Conclusion: In advance of surgical correction of external genitalia in transsexuals, posterior urethral surgery, revascularization surgery for hypospadias and erectile dysfunction, it is essential to prepare the dorsal nerve of penis thoroughly, thereby knowing by the course of nervus dorsalis penis/clitoritis. Via volumetric computed tomography, it is possible to visualize invivo the course of SNDP/C of this nerve on the pubic bone.

Key words: Human pelvis, hip bone, sex determination, computer assisted three dimensional Imaging.

O-27

Effect of sulfur dioxide inhalation on antioxidant capacity in experimental ulcer in duodenum: the correlation with histopathological changes

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Wistar male rats (aged three months) were exposed to sulfur dioxide ($S0_2$) for eight hours/day/7 days/one month (400 ug/m^3) and the effect on the duodenum antioxidant enzyme activities and histopathology were studied. Rats were divided into four groups. Groups; 1; Control (n=10), 2; SO_2 (n=10), 3; SO_2 +Experimental ulcer (n=10), 4; Experimental ulcer (n=10). Experimental ulcer was induced by intraperitoneally of cysteamine with a dose of 400 mg/kg body weight. Experimentally groups were exposed SO_2+filtered air while control group were exposed to filtered air in the same condition. After the end of the experimental period (one month later) rats were sacrificed under ethic condition and rat tissues were taken in order to antioxidant capacity at the level of duodenum. Antioxidant capacity was analyzed with CAT. Also, duodenum of rats were examined by stereo zoom and light microscopy for histopathological changes in order to correlation with oxidative and antioxidant capacity. Five of six cysteamine-treated rats developed ulcers in the proximal duodenum. Significant increases were found in CAT activities in the rats subjected to cysteamine, SO_2 and Cysteamine+SO_2. These results lead to two conclusions: (1) SO_2 is a systemic oxidative damage agent (2) it is suggested that the oxidative damage produced by SO_2 inhalation may influence or promote the progression or occurrence of ulcer of duodenum.

Key words: Antioxidant capacity, experimental ulcer, duodenum, sulfur dioxide, oxidative stress.

O-28

Alterations in brain electrical activity and vital parameters in cecal ligation and puncture: an experimental rat model of sepsis

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Sepsis and septic shock are the commonest causes of death in the intensive care units. Approximately, half of the patients with progressive sepsis develop encephalopathy. However our knowledge is insufficient about the sepsis associated encephalopathy (SAE) that contributes a diffuse brain dysfunction. In this study, we aimed at investigating the vital and hematologic parameters, blood cultures and brain electrical activity in cecal ligation and puncture model (CLP); a rat model of sepsis. Noninvasive methods were used for the monitorization of vital parameters at 0-2-6-12 and 24 hours within the all three groups (septic, sham-operated and un- operated). Electrocorticographic (ECOG) and somatosensorial evoked potentials (SEP) were further recorded for analysis of the brain electrical activity at corresponding times. Significant decreases in mean arterial pressure, increases in heart rate and detonation of neurological reflexes considered as clinical signs of sepsis. ECOG recordings revealed slight decrease in median frequency and spectral edge frequency amplitudes and increase in delta activity while significantly elongated latencies observed within some SEP recordings for septic group. In addition to positive blood culture results, thrombocytopenia and increased blood lactate levels also found in CLP group. In conclusion, although it would be premature to attempt to draw any strict parallel between sepsis and SAE observed in human beings and CLP model of sepsis, the results provided in this study renders a valuable reference point for future analyses of sepsis and SAE, as well as providing crucial data for comparison and preference of many animal models of sepsis described before.

Key words: Sepsis, sepsis associated encephalopathy, electrocorticography, somatosensorial evoked potentials, cecal ligation and puncture.

Poster Presentations

(P-01 — P-125)

P-01

3-D anatomical landmarks of the inferior orbital fissure used in orbital decompression surgery

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The inferior orbital fissure (IOF) is an important area in the neurosurgical decompression surgery, but the anatomical features of the IOF have not been detailed. The morphometric analysis of the were studied in 232 orbits of 118 adult human skulls. The specimes were uploaded onto a personal computer and spesific software 3D-Doctor with manuael segmentation technique was used to calculate the surface areas, 8 different distances and two angles of the orbital reflections of the IOF. The longest and shortest borders of the IOF were 18.2±4.9 and 1.9±1.3 mm, respectively. The outer angle and inner angle was 138.9±32.7° and 38.4±24.7°, respectively. The circumference and area of the IOF were 50.6±13.5 mm and 61.3±39.1 mm^2, respectively. The degree of outer angle between the upper and lower segments of the lateral border may be a factor that affects the size of the IOF. This findings of our study suggest that removal of lateral wall should be started inferiorly, just lateral to the IOF and then extented superolaterally. Knowing the 3D localization of the IOF encountered in the decompression procedure enables safe neurosurgical access to the area. Although the decompression surgery is commonly used during skull base or vascular surgery by neurosurgeons who may already be familiar with its nuances and anatomical relationships to the IOF, this knowledge may also be useful to the wider neurosurgical community.

Key words: Surgical anatomy, inferior orbital fissure, orbit, decompression surgery, 3D.

P-02

Anthropometric measurements of mouth and nose in patients with schizophrenia

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Objectives: The purpose of this study were to determine the anthropometric values of the mouth and nose ear in schizophrenia patients.

Methods: In this study, we evaluated 35 patients with schizophrenia (22 males and 13 females) and 50 non-psychiatric controls (30 males and 20 females), with a mean age of 32.27±10 years (range, 18-57 years). We placed a thin metal wire to demonstrade the Frankfurt horizontal plane and a ruler on the glabella of the face of the subjects. Then, each subject underwent standard facial digital photography (frontal views) from a fixed distance. Manual measurements were made using 30-cm head and neck caliper and digital photopgraphs were evaluated with software programs for Windows (Adobe Photoshop 10.0 and Screen Protractor 4.0). The means of these measurements were statistically compared using Independent- Samples T test.

Results: In the present study, patients with schizophrenia had significantly higher upper lip height (2.3±0.30 cm) ($p<0.001$). However, they presented a smaller nasal root depth (1.35±0.19 cm) and nasal root width (2.04±0.3 cm) ($p<0.05$). Nose height (5.42±0.62 cm), nose width (3.64±0.37 cm), lower lip height (1.86±0.67 cm) and mouth width (4.57±0.97 cm) were statistically unsignificant ($p>0.05$).

Conclusions: We believed that these results of our study will improve the understanding of the mouth and nose anatomy in schizophrenic patients.

Key words: Schizophrenia, mouth, nose, anthropometry, face.

P-03

Quantitative measurements of the ear in patients with schizophrenia

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Objective: The purpose of this study were to determine the anthropometric values of the ear in patients with schizophrenia and compare results with non-psychiatric controls.

Methods: Photographs and inclination measurements of the ear were taken of 35 patients with schizophrenia (22 males and 13 females) and 50 non- psychiatric controls (30 males and 20 females), with a mean age of 32.27±10 years (range, 18-57 years). We placed a thin metal wire to demonstrade the Frankfurt horizontal plane on the face of the subjects. Then, each subject underwent standard facial digital photography (lateral views from left and right side) from a fixed distance. Manual measurements were made using 30-cm head and neck caliper and digital photopgraphs were evaluated with software programs for Windows (Adobe Photoshop 10.0 and Screen Protractor 4.0). The means of these measurements were statistically compared using Independent-Samples T test.

Results: In the present study, patients with schizophrenia had significantly wider ear hight (6.38±0.49 cm), distance from the lateral palpebral commisure to the to both the helical root (7.7±0.53 cm) and insertion of the lobule (8.44±0.59 cm), lobular width (2.15±0.28 cm) and lobular height (1.98±0.27 cm) ($p<0.01$). There were no statistically relationship among ear width (3.37±0.57 cm) and ear height (6.34±0.72 cm) with schizophrenic patients ($p>0.05$).

Conclusions: Our study indicates that schizophrenia effect ear morphology. We believed that these results of our study will improve the understanding of the ear anatomy in schizophrenic patients.

Key words: Schizophrenia, ear, auricula, anthropometry, head.

P-04

Inclination measurements of face in schizophrenic patients

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Objective: The purpose of this study were to determine the average inclination measurement differences of the face in patients with schizophrenia and compare results with non- psychiatric controls.

Methods: Photographs and inclination measurements of the face were taken of 35 patients with schizophrenia (22 males and 13 females) and 50 non- psychiatric controls (30 males and 20 females), with a mean age of 32.27±10 years (range, 18-57 years). We placed a thin metal wire to demonstrate the Frankfurt horizontal plane on the face of the subjects. Then, each subject underwent standard facial digital photography (frontal and lateral views) from a fixed distance. Measurements from the digital images were made using software programs for Windows (Adobe Photoshop 10.0 and Screen Protractor 4.0). The means of these measurements were statistically compared using Independent-Samples T test.

Results: We found that patients with schizophrenia had significantly wider forehad inclination angle (16.59°±4.89°) ($p=0.001$). However, schizophrenic patients had a smaller inclination angle of the right eye fissure (2.39°±3.09°) and left eye fissure (1.62°±2.14°) ($p<0.05$). We did not find any significant differences of the other face angles (upper face profile angle (5.00°±3.00°), lower face profile angle (11.16°±5.17°), general profile line inclination (5.19°±2.36°), chin angle (16.41°± 2.75°), columella angle (76.27°±8.73°) and angle of the dorsum nasale (29.28°±6.62°) between schizophrenic patients and non-psychiatric controls ($p>0.05$)

Conclusions: We believed that these results of our study will improve the understanding of the cranio-facial profile angles in schizophrenic patients.

Key words: Schizophrenia, facial angles, anthropometry, head.

P-05

Quantitative measures of the head and face in patients with schizophrenia

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Objective: The aim of this study was to examine the head and face measurement differences between patients with schizophrenia and non-psychiatric controls.

Methods: It was conducted on 35 patients who were primarily diagnosed with schizophrenia (22 males and 13 females) and 50

non-psychiatric controls (30 males and 20 females), with a mean age of 32.27±10 years (range, 18-57 years). The schizophrenic patients were selected from psychiatry department of medical faculty of Gaziantep University. Different measurements were made from head (4 items), face (8 items) and eyes (6 items) with a 30-cm head and neck caliper for each subject . The means of these measurements were statistically compared using Independent- Samples T test.

Results: We found that patients with schizophrenia had significantly higher head height (10.49±1.39 cm), face height (12.27±0.90 cm), intercanthal width (4.53±2.71 cm) and palpebral fissure length (right eye) (2.74±0.19 cm) ($p<0.001$). However, schizophrenic patients showed a smaller biocular width (7.52±2.29 cm) ($p<0.05$). In our results head width (15.52±0.57 cm), head length (18.04±0.86 cm), circumference of the head (57.89±6.33 cm) and lower face height (6.57±0.67 cm) were not statistically significant among these subjects ($p>0.05$).

Conclusions: Our results showed that craniofacial morphologhy was influenced by the schizophrenia disorder. These values will improve the understanding of the cranio-facial morphology in schizophrenic patients.

Key words: Schizophrenia, facial measurements, anthropometry, head.

P-06

The number of driver and modulator terminals in the ventro-basal and posterior thalamic nuclei in normal and genetic absence epilepsy rats from Strasbourg (GAERS); using electron-microscopy

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The thalamus is divided into distinct nuclei which have different functions and each nuclei receives spesific impulses and convays it to spesific regions of the cortex. There are two types of thalamic afferents, driver (from the retina, inner ear and from somatosensorial pathways) afferents and modulator (modulates the mesage transmitted without producing changing its character) afferents. Modulater afferents are from the brain stem, hypothalamus, forebrain and cortex. The efferents of the thalamus are to the cortex. Absence epilepsy is a form of generalized non-convulsive epilepsy and is characterized by the sudden onset of 3 Hz spike-and-wave discharges in the electroencephalogram, accompanied by behavioral arrest, unresponsiveness and unconsciousness which lasts for 10-45 second. Three types of terminals were described in the thalamic nuclei RL (round vesicle, Large symetric postsynaptic terminal), RS (round vesicle, small terminal, asymetric postsynaptic terminal), and F (flattened vesicles, symetric postsynaptic terminal). The drivers are RL (excitatory) type and the modulators are RS (excitatory) and F (inhibitory) types. In the present electron-microscopic study normal (n=4) and Genetic Absence Epilepsy Rats from Strasbourg (n=4) (GAERS) were used. The present study aims to evaluate the number of RS, RL and F types of synapes in Wistar albino and GAERS rats in the venterobasal (VB), posterior (Po) thalamic nuclei. The present preliminary electron-microscopic results has shown that in normal rats the percentage of of RL in the VB thalamic nuclei were 16%, RS were 68% and F were 16%. In the Po thalamic nucleus RL were 7%, RS were 5% and F were 42%. In GAERS animals the percentage of RL in the VB thalamic nuclei were 9%, RS were 63% and F were 23%. In the GAERS Po thalamic nucleus RL were 3%, RS and 40% and F were 53%. The comparsion of the number of RL and RS terminals in the VB and Po thalamic nuclei of normal and GAERS animals showed that the GAERS animals had low percentage in both VB and Po thalamic nuclei. However the percentage of F terminals were significantly high in the VB and Po thalamic nuclei of GAERS animals. The mechanizm of absance epileys has been attributed to inhibitory system. The F type of terminals are GABAergic terminals to the thalamus from the thalamic reticular nucleus and the inter neurons. The results of the present study showed an increase in the GABAergic terminals in GAERS animals therefore, thalamic reticular nucleus and the inter neurons may plays an important rol in tha absence epilepsy mechanizm.

Key words: Epilepsy, thalamus, terminal type, GABA.

P-07

Longitudinal MRI of spinal cord injury in mouse: changes in signal patterns associated with the inflammatory response

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Objective: It is interesting to note that the evolution of the neuropathology in injured mouse spinal cord (SC) exhibits distinctly different course than what is observed in rat. Specifically, mouse exhibits a unique neuroinflammatory response, similar to the one seen in wound-healing or scarring, with typical characteristics of lesion site filling in with dense fibrous connective tissue. In the past, numerous studies have used Magnetic resonance imaging (MRI) modalities to extensively investigate SCI in rat and contributed our understanding of the lesion development and injury properties in this model. But similar studies in mouse are limited only to a few. Therefore, the goal of this paper is to demonstrate the evolution of the MR-observed neuropathology in wild type C57Bl6 mice subjected to a contusion-type SCI. Longitudinal changes in the MR intensity are presented to assess the direct consequences of the initial mechanical injury in the acute phase and to visualize the spatiotemporal progression of the secondary injuries towards the chronic phase.

Methods: Seven mice were subject to injuries at the T11 level of SC. The animals were then scanned on postinjury days 1, 7, 14 and 28 using a 9.4 T INOVA Varian system (Varian Inc., Palo Alto, CA) and inductively coupled surface coil. High-resolution anatomical images of the injured SC were acquired in sagittal and axial orientations using a spin echo (SE) sequence in multi-slice and interleaved fashion.

Results: Longitudinal data from injured SCs were produced in sagittal and axial views on postinjury days 1, 7, 14 and 28 and quantified. The primary and secondary injuries reflecting the complex neuroinflammatory mechanisms triggered at cellular and molecular levels combined with the endogenous attempts of the cord to repair itself. The MR intensity patterns on day 1 showed acute injuries as focal in one group of three mice and as diffuse in the remaining group of four mice. The focal injuries appeared as a region of hypointensity with well-defined boundaries. These injuries first enlarged on day 7, but then shrunk slightly by days 14 and 28. In contrast, the diffuse injuries were initially obscure on day 1, mainly because of loss of contrast between gray and white matters. On day 7, lesions expanded asymptotically in both rostral and caudal directions with respect to the epicenter, and maintained its size on days 14 and 28. The lesions on day 28 mostly appear shortened in length and contracted across compared to those seen on day 7, possibly suggesting shrinkage of the neuronal tissue with time.

Conclusion: The current results clearly demonstrate the power of longitudinal MRI in providing additional insights into our understanding of the endogenous pathogenesis of the SCI in the wild-type mouse. Applications of advanced MRI modalities and data acquisition protocols should expand this power further and provide robust quantitative information on the spatiotemporal course of the changes in the anatomy, pathology, structure and function of the injured cords in genetically engineered mice.

Acknowledgements: This work was funded in part by NIH grants NS-052610 and NS-054019.

Key words: Spinal cord injury, MRI, Mouse, inflamatory response.

P-08

Common temporal trunc originating from middle cerebral artery

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The internal carotid artery (ICA) terminates into the anterior and middle cerebral arteries. The middle cerebral artery (MCA) is the larger of the two terminal branches. The middle cerebral artery divides into truncus superior and truncus inferior after a variable distance. The first part which also contains the trunci is called the M-1 segment. Three main groups branches arises from proximal part of segment M-1: Lenticulostriate branches, orbitofrontal branch, anterior temporal arteries. A large anterior temporal artery (common trunc) may arise from the proximal M-1 segment. In the majority of cases, anterior temporal arteries arise from the horizontal segment, opposite to the lenticulostriate arteries, and courses over the temporal lob. In our case, a significant temporal branches (Rr. polaris temporalis temporalis anterior medius posterior) were arising from a common temporal trunc. Cerebral arter variations are of importance to several areas, including cerebral operations, interpretation of cerebral angiograms and anatomy education. Our case has been presented after comparison with the literature.

Key words: Middle cerebral artery, common temporal trunc.

P-09

Statistical shape analysis of Byzanthium and present period craniums: a geometric morphometric study

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Geometric morphometry is a new morphometric method that allows of shape analysis. Shape is defined as the sum of the surviving features after the removal of the effects of the location, orientation, and scale from the object. In shape analysis, it is focused on the key points called landmark. In our study, we aimed to compare the Byzantium crania and the present crania, to determine the cranium region with a dense deformation and to identify the most responsible landmark for deformation. In this respect, we carried out certain landmark positionings on 10 Byzantium and 11 present digital cranium images shot in standard mode in ventral and lateral configuration. Twenty one anatomic landmarks were marked in ventral images and 13 landmarks were marked in lateral images. When the shape deformation of Byzantium and present craniums were analyzed accordingly by the statistical shape analysis method, no notable deformation was seen neither in ventral nor in lateral. However, the maximum deformation was seen in the landmarks on the central line such as bregma, glabella, nasion, maxillofrontale, prosthion in ventral view; and in frontozygomaticus, nasion and bregma in lateral view. In our study aiming to investigate the similarities of the ventral and lateral views of the Byzantium and Turkish craniums within the basis of general and landmarks, although it was realized that the test-subjects in our study are seperated into two groups according to the general similarity in ventral and lateral view it was supposed that it was not due to population features.

Key words: Cranium, geometric morphometry, anthropometry, shape analysis.

P-10

Coexistence of anomalous peroneus tertius muscle and longitudinal tear in the peroneus brevis tendon

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The longitudinal tear in peroneus brevis tendon is being frequently seen and is recognized as a less uncommon cause of chronic ankle pain and disability. A rare association, longitudinal tear in the peroneus brevis tendon and anomalous peroneus tertius muscle origin, muscle bulk and insertion was found during routine dissection of left lower extremity. In this case, peroneus tertius muscle origins separately from the fibula rather than as a slip from extensor digitorum longus. The muscle bulk is more than that is normally found in the left ankle joint. The fanned-out peroneus tertius tendon inserts on almost entire dorsal surface of the fifth metatarsal bone. Unilateral presence of this variation may be related to longitudinal tear in the peroneus brevis tendon.

Key words: Peroneus tertius muscle; anomaly; peroneus brevis; tendon tear.

P-11

Morphometric characteristics and importance of the fibular incisura

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The purpose of this study was to determine the anatomical characteristics of the fibular incisura of the tibia and the distal end of the fibula, which are forming together the tibiofibular syndesmosis joint and to obtain the morphometric data in both genders. There are only few anatomic studies concerning this area on dry human bones in the literature. Current study performed on 35 dry adult tibia-fibula sets (22 male and 13 female). The mean height, width and depth of the fibular incisura were 29.43±4.07 mm, 15.49±1.56 mm, and 3.68±1.49 mm respectively. 35 of cases had shown significantly concave shape (depth of the fibular incisura >4mm) and 65 had shallow concave fibular incisura (4 mm) in both genders. The anterior facet was 10.89±2.08 mm, posterior facet was 13.28±1.49 mm. The posterior tubercle was bigger on 62 of cases, anterior and posterior facets were approximately equal on 32 (difference less than 1.5 mm), and the anterior facet was bigger only on 6 of cases. The angle between anterior and posterior facets was approximately 126º in both genders. The widths of the tibia, fibula and fibular incisura were significantly different between genders. Statistically significant, strong positive correlation was

found between width of the tibia and depth of the fibular incisura at the 1 cm proximal level from the tibial plafond. These morphometric data may help to easily understand and interpretation of plain radiographs, CT and MR images. Also it could be important to perform surgical reconstructions after dislocation fractures.

Key words: Fibular incisura; fibular notch; morphometry; tibia.

P-12

An investigation of the lumbosacral region anomalies in adult belong to sivas area by radiography

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Cumhuriyet University Medical Faculty, Department of Anatomy, SİVAS Aim of this study was to determine frequency vertebral congenital anomalies in the lumbosacral region. Direct graphies of urinary system belong to patients between the ages 17-74 were evaluted retrospectively who admitted to urology and physical therapy department with various reasons. Age mean of the cases was 44,31 + 1,35. Of 755 evaluated cases' graphies, 354 was belong male and 401 was female. Lumbalisation, sacralisation and spina bifida occulta were investigated on radiographies. Cases who detected anomalies according to interested areas were 155 (20.5%). Observed anomalies of 77 (10.2%) cases had lumbalisation, sacralisation in 42 of cases (5.6%), spina bifida occulta in 24 (3.2%), sacralisation-spina bifida occulta in 7 (0.9%), and lumbalisation-spina bifida occulta in 5 cases. It is still necessary knowledge of the frequencies congenital anomalies and dephormities of interested region, during the surgical interventions to the lumbo-sacral region and to understand ethiology of the lumbar region pains.

Key words: Lumbalization, sacralization, spina bifida okkulta, direct graphy.

P-13

Morphometric analysis of the foramen magnum by computed tomography

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In this study, images of 54 cases (29 female, 25 male) Computed Tomography sections were used for evaluation of measuring diamaters of the foramen magnum belonging to Turkish population. Result of the statistical analysis of diamater values of the foramen magnum showed variety in size. While analysis of antero-posterior measuring diameter (distance between the basion and the opisthion) values between the male and female were presented statistical significance ($p<0.05$), there was no significance at transverse diamater and index between the two sex. Moreover, clinical importance of the foramen magnum was discussed with related articles.

Key words: Computed tomography, foramen magnum, opisthion, basion.

P-14

C-2 intralaminar screw placement: a quantitative anatomical and morphometric evaluation

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Our aim was to investigate the feasibility of placing a screw in the C2 lamina and evaluate the reliability of the surface of the dorsal arch of C2 as a landmark for determining the optimal site of screw entry. Defining the anatomic zones for the placement of C2 intralaminar screws is essential for patient safety. Seventy-five adult dried human C2 spines were used in this study. Seven measurements were determined for screw entry points, trajectories, and lengths for placement of intralaminar screws. Also ideal angles for screw positioning were measured on dried C2 spines. The average maximal right screw length was 26.4 mm, the average maximal left screw length was 26.3 mm, the average width of right C2 lamina (1/3 upper segment) was 2.6 mm, the average width of left C2 lamina (1/3 upper segment) was 2.6 mm. The average width of right C2 lamina (1/3 middle segment) was, the average width of left C2 lamina (1/3 middle segment) was, the average width of right C2 lamina (1/3 lower segment) was 5.7 mm, the average width of left C2 lamina (1/3 lower segment) was 5.8 mm. Highly variable thickness of the C2 lamina necessitates preoperative evaluation to ensure that the patients anatomy can accommodate screws entirely within the bone. The width of the upper one-third of C2 lamina is not appropriate for the placement of intralaminar screws. On the other hand, the width of the middle and lower one-third of C2 lamina is more convenient for intralaminar screw delivery.

Key words: Intralaminar screw, lamina, C2, axis.

P-15

Klippel Feil syndrome: report of two cases

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Klippel-Feil Syndrome is an uncommon disorder characterized by the congenital fusion of any 2 of the 7 cervical vertebrae. The true incidence of Klippel-Feil Syndrome is unknown. The most common signs of the disorder are short neck, low hairline at the back of the head, and restricted mobility of the upper spine. Studies have shown that 34 to 74 of Klippel-Feil Syndrome patients present with such findings. Seventy five human C2 specimens of both sexes were examined for Klippel-Feil Syndrome. During the osteologic examination for Klippel-Feil Syndrome, we noticed two adult specimens with congenital fusion of C2 and C3 vertebrae. We present two specimens with congenital fusion of C2 with C3. Exhaustive macroscopic observations were performed on the specimens in order to describe the lesions as well as to identify other anomalies. The knowledge of Klippel-Feil syndrome may be of importance to Neurosurgeons, Radiologists, physiotherapists, and Orthopedic surgeons dealing with the pathologies of cervical spine. Awareness of the presence or absence of such a fusion, as demonstrated on lateral cervical radiographs, may be of value to the neurosurgeon planning the operative and medical approach to the patient.

Key words: Congenital, fusion, Klippel-Feil syndrome, cervical, block vertebrae.

P-16

Morphometric examination of dens axis

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Displacement fractures of the dens may lead to quadriplegia by injuring the spinal cord and to death due to compression of medulla oblongata. Corpus axis and dens axis are the target structures of vital decompression and fixation procedures following the cranio-cervical traumas. Hence detailed morphometric analysis of the dens axis is required to be conducted in different populations. The aim of this study is to conduct detailed morphometric measurements of the dens of second cervical vertebra and provide contributions to the planning of interventions to the region. Forty seven parameters of the 70 dry C2 vertebrae belonging to the Anatolian people were measured in our study. All measurements were done by the same person by the use of a caliper with a sensitivity of 0.05mm. Some of the measurements were as follows: collum diameter of the odontoid process (OP) 40.3±3.07 mm, width of OP=10.17±0.9 mm, thickness of OP=10.94±0.9 mm, anterior height of OP=17.5±2.5 mm, posterior height of OP=16.9±2 mm, the width of the joint anterior surface of OP=8.6±1.9 mm, the length of the joint anterior surface of OP=11.84±1.5 mm, the height of corpus anterior=19.2±1.9 mm, the height of corpus posterior=16.6±2.4 mm. The data obtained were discussed under the light of the literature. Our findings were in accordance with the general data in the world literature. In conclusion, we believe that our findings will provide contributions to transoral odontoidectomy, applications of plaques including C2 and anterior odontoid screwing procedures in Anatolian people. Nevertheless, each subject should be evaluated with the imaging techniques in the preoperative period due to the possibility of personal variations.

Key words: Axis, dens axis, C2 vertebra, morphometry.

P-17

Some anthropometric measurements of face in Turkish adults

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In history, many scientists had studied the body measurements of human. Body measurements were used by the Egyptians, but facial measurements were first performed by the Greeks as part of total body measurements. 1036 (543 male, 493 female) healthy students who were studying in Trakya University had taken place voluntarily in our study. The nasal height, nasal width, mouth width, interpupillary distance, face height, ear height and ear width were measured on each subject. Measurements were performed with Harpenden anthropometer in Department of Anatomy of Trakya University. In our study, the measurement distances, mean values and standard deviations for women and men respectively are; body height: 160.73±5.95; 173.68±6.03, face height: 11.35±0.65; 12.13

±0.73, nasal height: 4.86±0.43; 5.15±0.48, nasal width: 3.24 ±0.28; 3.57±0.3, mouth width: 4.98±0.42; 5.14±0.69, inter-pupillary distance: 6.19±0.31; 6.41±0.31, ear height: 5.95±0.41; 6.17±0.91, ear width: 2.95±0.24; 3.21±0.27. We intended to establish the standards of some face measurements in adult Turkish men and women with this study.

Key words: Anthropometry, artistic anatomy, proportion.

P-18

Paul Richer and artistic anatomy

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The science that studies the ratios and proportions of the human body named Artistic anatomy in art. İt is mentioned as a science branch till 19th century. At this stage the French school leadership is accepted by the scientists. Early in the 20 th century the best studies; which made by the painter and doctor Paul Richer, were the study named "Nouvelle Anatomie artistique du corpus humain- I'Homme" (new artistic anatomy about human body-man) published in 1906 and the study named"Nouvelle Anatomie artistique- la Femme" (new artistic anatomy-woman) published in 1920. Richer described the human beings by using scientific measurements without looking for an ideal beauty. He described both the man and woman figures detailed. He chosed head height as a modul and he announced the ratio of head height to body height as 1:7.5. He made his descriptions by using anterior view and posterior view of the body; more over he added medial and lateral views of extremites. By using anthropometric and statistical resarch methods, Richer converted the artistic anatomy to the science. He found major datas about the body proportions of an average European human.

Key words: Proportion, Ratio, artistic anatomy.

P-19

Artistic anatomy

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The artists, who use the human body as a narration symbol, had investigated the human anatomy by the vision of artistic anatomy throughly. They had accepted their work of arts have some proportions on human body. And they had used these proportions in their lots of evidence The proportions between the different parts of the human body had been called CANON. And the unit measure of every canon had been defined as MODULE. Artists had used different modules like foot length, hand length, head height and third finger length in different canons. The most olden canon which is in Egypt, accepts the foot length as module. From their graves and not-ended pictures in pyramids, we understand that the height of the human body is equal to six times of the foot length. But on the new Egyptian Canon, the module is the third finger length of the hand. As humanity history develops, lots of artists had defined different canons in their own cultural and social comprehension. Leonardo thought that God geometrized the human. And he used mathematics while he was searching the mystery of the human body. Da Vinci maintained that there are lots of equalities on the human body despite he didn't use any modul. Durer used geometry and perspective in his studies. And he is the first scientist who maintained the proportions of the human body do not change person to person. He had got lots of studies about the subject. Dürer did not use any modul in the described canons like Leonardo too. But he talked about lots of proportions.

Key words: Canon, modul, artistic anatomy, golden ratio.

P-20

Bilateral superficial ulnar artery variation

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During routine dissection of a white male cadaver, aging 60- 65 years, we found that the ulnar artery is lying superficially (SUA) on both forearms. These superficially lying ulnar arteries were originating from the brachial arteries and were running superficial to the flexor muscles in forearm. Variations of arterial system in the upper limb are well documented. Presence variations of the radial artery most frequently (14%), whereas prevalence of superficial ulnar artery is 0.7-9.4%. Its bilaterally prevalence is most rarely (0.01-0.62%). Presence of a superficial ulnar artery is a risk for a mistaken cannulation which may lead to ischemia of hand. In addition, SUA may also have a beneficial role in reconstructive surgery of forearm.

Key words: Superficially ulnar artery, variation, ulnar artery.

P-21

Bone length estimation and population specific features of calcaneus and talus of late Byzantine Era

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We aimed to evaluate osteometric data to distinguish the population affinity of Byzantine individuals as well as to estimation of length of calcaneus and talus from their bony markers, since the importance of talar bones on the assessments of the population specific features because of the preservationally favored properties of calcaneus and talus. Standardized measurements can be obtained from remains and further evaluated for estimations of population and race characteristics. Estimation of bone length from preferred markers leads to researcher or investigator to estimate the bone length from a fragmented bone, which not completely decomposed. Forensic anthropologists and bio-archeologists have also increased attention on the importance of the estimation of bone length from fragmented bones Adult dry, complete and non-damaged 160 calcanei (72 left and 88 right) and 84 talus (38 left and 46 right) of male individuals of Late Byzantine Era (13[th] Century AD) were included for this study. Total of 10 and 14 bony markers selected for measurements for calcaneus and talus respectively. Data were subjected to statistical analysis for assessing bilateral differences in the bony markers. Correlation coefficients were determined between maximum lengths of calcanei and tali against other markers. Dorsal articular facet length and dorsal articular facet breadth parameters of calcanei showed significant side differences (p=0.01). Length of the sulcus tali and width of the sulcus tali parameters for talus also showed significance for side differences (p=0.01). More than one of the bony markers significantly correlated with maximum lengths of calcanei and tali.

Key words: Bone length estimation, calcaneus, talus, byzantine era, osteometry.

P-22

Anatomical features of upper extremity veins as a vein graft source; a cadaveric study

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In hand surgery and reconstructive microsurgery, frequently vein grafts are used for vein and arterial construction. Using the same extremity for grafts is an advantage and ease both for anesthesia and surgical area preparation. This study was planned to investigate the features of and resources for vein grafts suitable for upper extremity arteries. 16 upper extremities of 8 cadavers, fixed with formaldehide, were investigated. Upper extremity evaluated in 9 anatomic regions. Anatomic localizations, diameters, wall thickness, valve types of veins and localizations of perforans were counted and evaluated. Wall thickness and diameters of veins were compared with brachial, radial, ulnar and digital arteries wall thickness and diameters. Three different types of valves were determined. For brachial arter, average diameter was 3.96 mm, wall thickness was 0.43 mm and these were 2.54 mm and 0.36 mm for radial artery, 2.12 mm and 0.35 mm for ulnar artery, 0.85 mm and 0.32 mm for digital artery, 1.81 mm and 0.25 mm for arm cephalic vein, 3.20 mm and 0.43 mm for basilic vein of arm, 2.04 mm and 0.33 mm for cephalic vein of forearm, 1.35 mm and 0.29 mm for basilic vein of forearm, 1.27 mm and 0.27 mm for dorsal hand medial vein. The upper extremity vein have diameter alternatives, especially for short segments and cephalic vein is advantegeous than vena basilica for long grafts but the high count of perforators and curly anatomic trace in the forearm regions,are disadvantages when compared with lower extremity veins.

Key words: Cephalic vein, basilic vein, anatomy, vein graft.

P-23

Determining the stature by the length of gastrocnemius muscle

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In mass disasters, the most important stage for identification is estimating the stature. To determine the stature, long bones lengths are used. Particularly in Europe tibia and femur lengths are the most reliable data. In mass disasters, tissues must be dissected down to bone. The length of gastrocnemius muscle from femur condyle to tuber calcanei can be used to predict the stature. It is aimed to develop a formula to determine the stature by the gastrocnemius muscle length. For this study in 14 male cadavers- in collection of Dokuz Eylul University Medical

Faculty Anatomy Department with head, body and extremity integrity- stature, medial and lateral lengths of gastrocnemius muscle and length of tibia were measured. Stature was measured with steel tape measure and length with compass. The relation of the stature and length measure was evaluated with Spearman correlation test and correlation coefficient r was 0.773 for gastrocnemius medial length (p=0.01), 0.656 for gastrocnemius lateral length (p=0.05) and 0.621 for tibia length (p=0.05). Linear regression analysis was used for stature estimation and a formula was developed. 56.1% of the stature change can be explained with gastrocnemius medial length and 36.8% with tibia length. As a result, gastrocnemius muscle measures give more significant results for stature estimation than tibia length. The length of gastrocnemius muscle has a linear relation with stature. This relation can be used in identification.

Key words: Gastrocnemius muscle, identification, stature, regression analysis.

P-24

Scalenus anterior muscle with three heads, and variation in formation and the course of the superior trunk

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During the routin dissections in 2007-2008, we observed that the left scalenus anterior muscle originated as three heads from anterior tubercles of the transvers processes of the C4-C5-C6 vertebrae, and inserted to the scalen tubercle of the first rib (Lisfranc's tubercle) in a 61-year-old- male cadaver. We observed that the anterior branch of the C4 spinal nerve passed in front of the C4 head of the anterior scalen muscle and joined the superior trunk as an additional branch. The anterior branch of the C5 passed between the C4 and C5 heads of the scalenus anterior muscle, and the anterior branch of the C6 passed between the C6 head of the scalenus anterior muscle and scalenus medius muscle. The variational formation and the differences in the relation of the superior trunk, which is one of the important reasons of the neurovascular impingment symptoms of upper extremities, and the anterior scalen muscle, have different clinical pictures and need different approachs for their therapeutic applications. After our literature investigation, we found that, to know these variations is important in surgical and anesthetic interventions in the region.

Key words: Anterior scalen muscle, brachial plexus, superior trunk, variation.

P-25

Compared to fetal kidney size with vertebral height by ultrasound

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Fetal prenatal parameters shows fetal evaluation so many disorders could be associated with changes in the sizes of the prenatal parameters. In this study, we compared fetal kidney size with vertebral height, In under one year it ranges approximately from 4 to 5, in preschool children from 3.5 to 4.5, and in older children it is about 3.5 to 4. In this study, fetal kidney size and vertebral height were measured by ultrasonography in 108 healthy pregnant who's gestational ages are between 17^{th}-34^{th}. weeks. Means value of measurements at 17^{th}, 21^{th}, 25^{th}, 29^{th} and 34^{th} gestational weeks were 18.9, 24.95, 34.90, 41.65, 43.34 mm for kidney length and 3.04, 4.08, 5.02, 5.34, 5.84 mm for vertebral height, respectively. The rate of kidney length to vertebral height were 6.21, 6.11, 6.95, 7.79, 7.42 respectively. The rate of fetal kidney size to vertebral height changes in different diseases like polycystic kidney disease or hydronephrosis.

Key words: Fetal evaluation, fetal kidney size, fetal vertebral height.

P-26

Gastrocnemius with three heads

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During the routine dissection in our department in 2007- 2008, we observed that the right gastrocnemius muscle consisted of three heads. The orginal medial head divided into two heads, and lateral of these two heads connected to the main lateral head of the muscle. Tibial nerve passed between the two heads of the medial head. Soleus, plantaris and popliteus muscles were normal. The case was discussed in clinical point of view.

Key words: Gastrocnemius, variation.

P-27

Vertebral artery with high access

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During the routine dissection in our department in 2007- 2008, we observed that the vertebral artery, after branching from the subclavian artery, run towards the skull base and entered the transvers foramen of the C2 vertebra. The left vertebral artery was normal. The case was discussed in clinical point of view.

Key words: Vertebral artery, variation.

P-28

The dorsal scapular artrey and the suprascapular artery originating from the subclavian artery

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During the routine dissection in our department in 2007-2008, we observed that the suprascapular artery and the dorsal scapular artery branched directly from the subclavian artery on the right side of a 52-year-old male cadaver. The arteries on the left side branched normally. The case was discussed in clinical point of view.

Key words: Subclavian artery, dorsal scapular artery, suprascapular artery

P-29

The obturator artery originating from the femoral artery

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During the routine dissection in our department in 2007-2008, we observed that the obturator artery originated from the femoral artery on the right side of a 61-year-old male cadaver. After originated from the femoral artery, the obturator artery run medially and passed in front of the pectineus muscle. The case was discussed in clinical point of view.

Key words: Obturator artery, femoral artery, variation.

P-30

A common trunk of profunda brachii and circumflex humeral arteries originating from the axillary artery with a superficial brachial artery

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Variations of the normal arterial pattern of the upper limb occur frequently but, multiple variations in one limb are infrequently encountered. In a routine dissection of the right arm of a 72-year-old male cadaver, we observed an unusual arterial pattern of the upper limb. A common trunk, originating from the axillary artery, which divides into the profunda brachii artery and a trunk of the circumflex humeral arteries were existing. Also, the brachial artery was crossing above the median nerve roots and then coursing anterior to the nerve in the upper third of the arm, which is called superficial brachial artery. These variations of the terminal end of the axillary artery which differ from the previously described cases, are not only of significant clinical importance to orthopedic and reconstructive surgeons but also have very significant medico-legal implications. We aimed to explain anatomical and embryological properties, and clinical significance of the superficial brachial artery and the common trunks, originating from the axillary artery.

Key words: Axillary artery, arterial variation, profunda brachii.

P-31

The course of the upper extremity arteries in cases with high origin radial artery

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Variations of the radial artery is of importance for the clinicians in order to perform angiographic interventions and surgical procedures. The high origin of the radial artery (HOR) has an incidence of 14.27% in dissection series and 9.75% in angiographic examinations. We observed HOR originating from the brachial artery in two cadavers -one bilateral and one unilateral- during our routine dissections. In the case with bilateral variations, an anastomose was detected between the brachial artery and HOR in the cubital fossa on the left side. In the same

cadaver on the right side a superficial ulnar artery originated from the HOR at the cubital fossa. The second cadaver only had an HOR on the right side. We did not find any variations regarding the other upper limb arteries in this cadaver. We believe knowing the course of the variations of the upper limb arteries is important not only for anatomists but for clinicians as well.

Key words: High origin, radial artery, variation, superficial.

P-32

The relationship between umbilical chorda and placenta morphology and the antropometric measurements of newborns

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The aim of this study is to determine the umbilical chord and placenta morphology and relationship to the anthropometric measurements of newborns. In this study, anthropometric indices of 303 newborns babies (151 girls, 152 boys) and the morphologic characteristics of their umbilical cords and placentas were studied. The cord length and vessel diameters of the umbilical cords and the weight and diameter measurements of the placentas were examined. The relationship between the newborns weight, height, head circumference, and the umbilical cord and the placenta were surveyed. The mothers age were between 17 and 44 (mean 26. 89) years. Of the newborns, 151 (49.8%) were female babies and 152 (50. 2%) were male babies. The mean value of body length was 49.58±2.12 cm, birth weight 3395 ±459.31 g, head circumference 34.26±1.44 cm. The mean cord length was 57.79±12.23 cm. The umbilical arteries diameters were 3. 86±0.55 mm and umbilical vein diameter 2.68±0.55 mm. The mean placental weight was 445.14±88 g. The examination of insertion section of the placenta of the umbilical cord, it was seen that 53.8 was central, 36 lateral and 10, 2 marjinal insertion. We found 3 single umbilical arteries and 1 accessory artery in the histological examination of the umbilical cord. There was a significant correlation between umbilical cord length and birth weight (p=0.001), head circumference (p=0.001), body length (p=0.05), placental weight (p=0.05) and birth number of mother (p=0.05). There was a significant correlation (p=0.001) between the mothers age and cord length. There was a significant correlation between the umbilical arteries diameters and placental weight (p=0.05). There was no significant correlation between newborn sex and placental weight. There was a significant correlation (p=0.001) between birth weight and placental weight.

Key words: Anthropometry, umbilical cord, placenta, newborn.

P-33

Motor neuron disease with nervus fibularis profundus lesion

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Motor Neuron Disease is progressive mortal neurodegenerative disease which is due to lesion of ramus ventralis. The disease is seen with spinal or bulber symptoms like asymetric weakness in adults. Moreover, the clinical findings rarely begin with foot-drop according to nervus fibularis profundus lesion in lower limb. But presenting of fasiculation and no sense loss sypmtoms are distinctive diagnosis for motor neuron disease from fibuler neuropaty. In this study, two cases which have Motor Neuron Disease beginning with the lesion of fibular nerve are presented. Two male patients (Fifty-two years and forty-four years old age) were come to Neurology Department of our university with gait problems. When the gait problem was first began (10 month ago and 1 year ago respectively) in both cases, they went to a medical centre and in their electrophysiologic investigation n.fibularis had no response to stimulus and diagnosis was considered as polineuropaty. Furthermore, some new symptoms were added like weaknesses in hands. In neurologic inspection; atrophy of the muscles of anterior region of the leg (m. tibialis anterior, m. extensor digitorum longus, m. peroneus tertius, m. extensor hallucis longus) and fasiculation of proximal muscles (m. biceps brachii, m. triceps brachii, m. deltoideus ve m. rectus femoris) were determined. Additionally, deep tendon reflexes were absent in lower limb. Steppage gait was also seen. In EMG, n. fibularis profundus had no response to stimulus in both of the cases. However, other motor and sense functions were normal. In the muscles; denervation potentials, fasiculation, chronic giant units and decreasing of units were observed. Treatment were given and in the following period bulber symptoms like disfa-

gia, speech problems were also determined. In conclusion, Motor Neuron Disease could rarely begin with the symptoms of n. fibularis profundus lesions. Therefore, for the right diagnosis especially for differential diagnosis with polineuropaty, the detailed inspections such as history and physical examination of the patient and also electrophsiological investigation are very essential.

Key words: Motor neuron disease, n. fibularis profundus, foot-drop.

P-34

Several morphometric characteristics of lumbar vertebrae

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The aim of this study was to define some of the morphometric characteristics of lumbar vertebrae comparatively in both sexes. The study was conducted on the lateral lumbar radiographs of 94 healthy subjects (45 male and 49 female) between 17-22 years old. Heights and weights of the subjects were determined. Anterior and posterior heights and superior and inferior widths of the vertebral bodies were measured from the radiographs. Measurements of the two sexes were compared statistically with t test. All values significantly higher in males except the anterior heights of L2 and L3 ($p<0.05$ Vertebral heights of the females were multiplied with the ratio of the mean heights of the males to females and the vertebral widths of the females with the ratio of the mean weights of the males to females. The new values derived from this calculation were defined as corrected values and compared statistically with the values of the males. All the corrected values were significantly higher than the measurements of the males except the superior widths of L1 and L2, and the posterior heights of L1, L2, L4 and L5 ($p< 0.05$). Proportionally, anterior heights of vertebral bodies were significantly higher in females than in males. It seemed to explain why lumbar lordosis was more prominent in females. We suggested that the differences of vertebral bodies defined in this study provided important clues for discriminating the sex from lumbar vertebrae which might be very useful for anthropologists and forensic scientists.

Key words: Vertebra, lumbar vertebra, lumbar lordosis, sexing.

P-35

Orbital restoration surgery in the zygomaticotemporal and zygomaticofacial nerves and important anatomical landmarks

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A variety of etiologies may result in functional and aesthetic deficiences requiring orbital reconstruction. Fractures of the zygomaticomaxillary complex in the acute stage are frequently accompanied by sensory disturbances of the zygomatic nerve (ZN). The purpose of the present study was to describe the anatomic and topographic landmarks of the ZN in 18 adult human cadavers regarding the localization and dimensions in the orbit. The zygomaticotemporal (ZTN) and zygomaticofacial nerves (ZFN) along the lateral wall of the orbit, passed through the zygomaticotemporal and zygomaticofacial foramens, respectively. The angle between the ZTN and the ZFN within the orbit was about 42.21°. The distance between the orbital opening of the ZTN and the meeting point of the ZTN was measured as 9.21±5.18 mm. The distance between the orbital opening of the ZFN and the meeting point of the ZTN was calculated as 11.22±4.25 mm. The distance between the orbital opening of the ZFN and the infraorbital margin of the orbit was 13.04.±3.21 mm. A detailed knowledge of the zygomatic nerves passage in the orbit is necessary for a surgeon while performing maxillofacial surgery. If these measurements are taken into account, there will be little surgical risk, and this will be helpful in identifying the extent of the operative field.

Key words: Zygomaticotemporal nerve, zygomaticofacial nerve, orbital reconstruction, orbital restoration, orbitozygomatic complex, sensory disturbance.

P-36

Anatomic basis of percutaneus Kirschner wire insertion in zygoma fractures

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Closed-reduction techniques currently are favored especially in isolated arch fractures and minimally displaced noncom-

minuted zygomatic fractures. Even so percutaneus Kirschner wire insertion has been used frequently in the treatement of zygoma fractures. The aim of this study was to determine the safest course of the Kirschner wire in zygoma fractures. In this study a topographical anatomic examination of the maxilla and zygomatic region were performed on 10 skulls (20 sides). The course of the wire begining from the joint of zygomatic arcus and zygomatic bone to the medial maxillary wall was analyzed by using points on the medial and inferior wall of maxillary sinus, inferior orbital rim, infa-orbital foramen, anterior nasal spine and zygomatic bone. Determined parameters were measured using digital caliper. The mean length of the wire was found to be 43.68 mm. The mean distance between anterior nasal spine and the end of the wire was measured as 25.54 mm and the mean distance from infra-orbital foramen to inferior wall of maxillary sinus was measured as 21.62 mm. A route beginning from the midpoint of the junction of zigomatic arc and zigomatic bone, passing from the midpoint of the infra-orbital foramen and inferior wall of maxillary sinus and ending at the medial wall of the maxillary sinus was determined as the safest course of Kirschner wire. The orientation of the surgeon to this course can be improved by using the data shown in this study that may result in the decrease of complications.

Key words: Zygoma fractures, infraorbital canal, Gilles approach.

P-37

Morphometric evaluation of the jugular foramen

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The anatomical description of the jugular foramen is very important for the surgical approach to the diagnosis and treatment of the tumors originate from the neurovascular contents of the jugular foramen. For this reason to know the complex structure, dimensions and the symmetric features of the jugular foramen is essential. In our study the 31 skulls (62 jugular foramen) from the collection of our laboratory were investigated. The length of jugular foramen, the width of the pars nervosa and the vasculare were measured. The presence of the bony bridge between the pars nervosa and pars vasculare was investigated. The differences in the length and width on each side were evaluated. The results were summarized that the jugular foramen mean length on the left was 13.38 mm (8.80-20.30 mm), on the right was 13.48 mm (10.10-20.0 mm), the mean width of the neural part on the left was 4.90 mm (3.00-9.10 mm), on the right was 5.20 mm (2.90-8.80 mm), the mean width of the vascular part on the left was 7.22 mm (3.80-12.40 mm), on the right was 6.61 mm (1.20-12.00 mm). Pars vasculare was larger in 12 (60%) skulls on the left while in 8 (40%) skulls on the right. Pars nervosa was found larger on the right [left 4 (36.3%), right 7 (63.6%)]. Four sigmoid sinus were larger on the right (57.11%) and 3 sigmoid sinus were larger on the left (42.85%). There was no correlation between the widths of the vascular part and sigmoid sinus. These values showed the asymmetry of the vascular part was more evident. Furthermore we observed 4 (13.90%) bony bridge unilaterally. We thought that these parameters and the others of previous reports will give a more detailed idea to a surgeon dealing with jugular foramen.

Key words: Foramen jugulare, cranium, morphometry.

P-38

The feedback evaluation of problem based learning at Faculty of Medicine, in Akdeniz University

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The study was performed in Akdeniz University, Faculty of Medicine, in 2007-2008 academic year. Feedback of students was taken at the end of the problem based learning (PBL). PBL consisted of regional anatomy of head and neck. Servical disc herniation was used to access the learning objective of PBL. 69.8% of students (n=187) were satisfied with PBL and 15.1% were not satisfied. The learning objectives of PBL were as follows: 1. regional anatomy of the neck (cervical vertebras and paraspinal muscles) 2. spinal nerve anatomy and their radices. 3. reflex concept and the upper extremity reflexes 4. ''hypoesthesis'' concept (dermatomal hypoesthesis) 5. the reasons of brachialgia 6. what the EMG is and its primary indications 7. the diagnosis of servical disc herniation 8. the medical treatment of cervical disc herniation (including the patient education)

Key words: Problem based learning, feedback, anatomy.

P-39

An accessory foramen on skull base: foramen ovale accessorium

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Three foramina can be identified in the greater wing of the sphenoid bone. The foramen rotundum is situated just below and behind the medial end of the superior orbital fissure, and leads forwards into the pterygopalatine fossa, to which it conducts the maxillary nerve. Posterolateral to the foramen rotundum is the foramen ovale which transmits the mandibular nerve. Behind the foramen ovale is the foramen spinosum, which transmits the middle meningeal artery. In addition to that there can another foramen called foramen ovale accessorium or foramen vesalius connects the fossa cranii media (middle cranial fossa) to the fossa pterygoidea (pterygoid fossa). It was described an opening with smooth walls in front and medial to foramen ovale which leads to an oblique channel directed towards the fossa pterygoidea. The canal was opened near the root of the pterygoid process. In order to determine the frequency of the foramen ovale accessorium, we examined it in 29 sides of the skull bases and 8 sides of the cadavers present in our lab. We measured the dimensions of the foramen ovale accessorium as well as its distance from the foramen ovale and foramen rotundum. The foramen was present in 8 sides (5 right, 3 left) out of the 29 skull bases and 2 sides (1 right, 1 left) out of the 8 cadaver. The existence and contents of the foramen ovale accessorium is important in surgical interventions on the trigeminal nerve and/or ganglion Gasseri and adjacent structures.

Key words: Foramen ovale accessorium, skull base, human.

P-40

Validity of acetabulum-pubis index in sex determination

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Objective: Hipbone (os coxae) has got an important role in sex determination. The purpose of the current study was to evaluate the validity of the A-P index as a sex determinant.

Methots: In this study, 60 dry, adult hipbones that sex was determined (30 male and 30 female) were assessed for morphometric analysis. Two measurements were recorded (done) on all of the hipbones. The first one was pubis length (PL) and second one was acetabulum diameter (AD). Pubis length, distance between the most superior point of the pubic symphysis to the nearest rim of the acetabulum in the long axis of pubis. Acetabulum diameter, maximum diameter of acetabulum parallel to the above measurement. Acetabulum- pubis index was derived for each bone by using the formula. A-P index = AD PL x 100. T-test was used to evaluate the differences between the sexes.

Results: In all the hipbones that were examined, pubis length was greater than acetabulum diameter in both sexes. Difference between the mean pubis length and the acetabulum diameter was 23.7 mm in females and 20.5 mm in males. A-P index derived from the above parameters varied from 55.4 to 88.7 in females with a mean of 66.5, and from 57.7 to 87.3 with a mean of 71.9 in males. The derived index showed a statistically significant difference between males and females (p=0.01).

Conclusion: The results of the present study demonstrate that the A-P index was significantly greater in males compared to that in females. Therefore, it is concluded that the A-P index can be used as a reliable sex marker.

Key words: Os coxae, pubis length, acetabulum diameter, acetabulum-pubis index.

P-41

Morphological insertion patterns of the fibularis brevis

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Mechanism of acute fracture of the fifth metatarsal at the junction between the proximal diaphysis and metaphysis of the fifth metatarsal (Jones fracture) is believed to be a result of the abduction force applied to the forefoot with simultaneous ankle plantar flexion. Because the fibularis brevis and tertius are the main muscle contributes to the abduction force its insertion area is clinically important. The aim of our study was to determine and measure the insertions of peroneus brevis and tertius,

to identify the differences of their tendons and to discuss their contribution to the avulsion or Jones fractures of fifth metatarsal. In this study; fibular tendons and their insertions were dissected in eleven formalin fixed cadaver feet. Parameters concerned with their insertions were measured using digital caliper and morphological patterns of their insertions were described. The mean width of fibularis brevis was found 13.15 mm at its insertion. In 4 of 11 cases a thin accessory slip extended to proximal phalanx of the fifth toe and in 3 of 11 inserted with two bands. Fibularis tertius existed in all cases and usually inserted to fourth interosseous space (1011) and additionally to the basis of fourth metatarsal bone (611). But this tendon was inserted neither to the fifth metatarsal in 6 of 11 cases nor to the fourth metatarsal in 5 of 11 cases. The insertion areas of fibularis brevis and tertius and their morphological patterns may play important role in mechanism of avulsion and Jones fractures.

Key words: Peroneal muscle, metatarsal bone, avulsion fracture, tendon attachment.

P-42

The quantity and course of paraumbilical veins in adults, and their topographic relation with the umbilical vein (lig. teres hepatis)

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The paraumbilical veins surrounding umbilical vein and running within falciform ligament is of the following three types: Burows veins, Sappeys superior group veins and Sappeys inferior group veins. Sappey's veins are referred to as accessory portal veins. They form the connection between portal vein and systemic veins. Burows veins terminate in the middle third of umbilical veins and do not enter the intrahepatic portal system directly. In this study, the falciform ligament specimens from 20 adult cadavers were used to determine the number and course of paraumbilical veins and to expose its topographic relationship with umbilical vein (hepatic ligamentum teres). Following routine histological procedures 5 µm thick cross-sections were prepared along the falciform ligament and were examined under light microscopy. Lig. teres hepatis was, topographically, in the middle-superior part of the lig. falciforme hepatis. The falciform ligament separated into four quadrants and examined. Mean numbers of paraumbilical veins were found 6.65±2.1 in microscopical examination. Mean numbers of paraumbilical veins were found 1.9±1.3 in right-superior part, 1.9±1.5 in left-superior part, 1.6±1.2 in right-inferior part, 1.4±1 in left-inferior part. Percentages of the right-superior, left-superior, right-inferior and left-inferior parts were found 27.82 , 27.82 , 23.31 and 21.05, respectively. In the relevant literature, there is a lack in studies about the quantity of paraumbilical veins and their topographic relation with the umbilical vein. Detailed information on quantitative parameters of paraumbilical veins may prove helpful in determining pathologies of paraumbilical veins and portal-systemic circulation.

Key words: paraumbilical vein, ligamentum teres hepatis, ligamentum falciforme hepatis.

P-43

Mendosal suture

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The knowledge regarding the mendosal suture is still on debate in the literature. Though reports of the closure of this childhood suture are variable, a few reports show the presence of the suture in the adults. This study was conducted to find out the occurence of mendosal suture and to determine a new method for the differential diagnosis of it from cranial fractures. We measured the morphometric traits and the angle between the mendosal suture line and lambdoidal suture line on 133 dry skulls, including 131 adults and 2 pediatric specimens. We found mendosal suture on 21 specimens, 13 of them were bilateral and 8 were unilateral. The length of these sutures ranged from 10.4 mm to 23.8 mm on the right side and 10.1 mm to 31.6 mm on the left side, respectively. The angle between two suture lines ranged from 36° to 71° on the right side and 32° to 75° on the left side, respectively. We hope these data will be of use to both anatomists and clinicians in order to avoid any misinterpretation of the mendosal suture.

Key words: mendosal suture, cranial fracture, dry skulls, morphometry.

P-44

Importance of sella turcica morphometry for middle skull base surgery

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The aim of this study was to investigate the measurements of sella turcica (ST) on dry skulls and to provide an important guide for neurosurgeons in this complex area. Linear measurements (depth, width, length) of the sella turcica were undertaken in 42 dry adult Anatolian skulls of indeterminate age and sex. The sellar volume (SV) was estimated applying mathematical formula of Di Chiro and Nelson [SV (mm^3) 0.5 x (depth x width x length) 100]. The mean depth, width and length of the ST were 8.57 mm, 14.92 mm and 11.96 mm, respectively. In addition assessment of SV was 764.6 mm^3. Racial differences are apparent in ST morphology, which must be taken into account during transsphenoidal approaches at surgery involving tumors of the middle skull base and hypophysis. In this reason, knowing to morphometric measurements of ST is important to prevention of surgery complications of neurosurgeons. The data presented here will also be of use in the neurosurgical investigations.

Key words: sella turcica, skull, middle skull base, hypophysis, surgery.

P-45

Clinical significance and morphometric analysis of the nasal bone and piriform aperture

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Linear measurements of the nasal bone (height, width) and piriform aperture (height, upper and lower widths) were undertaken in 56 dry adult Anatolian skulls of indeterminate age and sex. From these measurements the shape of the nasal bones was classified into one of five groups (A-E) using the Hwang et al. (2005) criteria. The mean height and width of the nasal bones was 19.3 mm and 12.4 mm, respectively. For the nasal bones type A was observed in 39.3%, type B in 3.6%, type C in 12.5%, type D in 10.7% and type E in 33.9% of skulls. The mean height, upper and lower widths of the piriform aperture were 36.3 mm, 16.6 mm and 23.9 mm, respectively. The shape of the piriform aperture was observed to be triangular in 51.8%, narrow in 25.0% and oval in 23.2% of skulls. The proportions of the different types of nasal bones and the shapes of the piriform aperture show racial differences from previously reported values and need to be taken into consideration in plastic and reconstructive surgery, as well as in forensic anthropology. The data presented here will also be of use in the anthropological classification of human skulls.

Key words: Nasal bone, piriform aperture.

P-46

Morfometric analysis of small cardiac veins (Thebesian vein)

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Small cardiac veins that are significant in myocardial collateral circulation collect considerable amount of myocardial venous blood usually drain into the right atrium. The aim of this study was to investigate the distribution of these veins on atrial walls, their numbers and their ostial diameters and after their evaluation to indicate their role in atrial and ventricular myocardial collateral circulation. Eight formalin fixed human hearts were examined under surgical microscope in GATA Anatomy dissection laboratory. The veins with larger ostial diameters as diameters of anterior cardiac vessels which may emptied directly to the anterior wall of right atrium easily has been distinguished from thin small cardiac veins. Number and localizations of the openings of these veins to the atria were determined by establishing them for each wall. According to this on inner wall of right atrium their number was established between 1-10 and for its on anterior wall between 1-11. This number was found for lateral wall between 1-4 and for basal wall between 1-4. In addition this number was found between 2-3 for superior wall and between 1-4 for posterior wall. On anterior wall of left atrium they were established between 2-4 and on its superior wall they were found between 2-11, and only in one case 4 ostia were founded on posterior wall. Small cardiac veins, vessels that can transport the blood from one of

the atria or ventricles have a great compensatory importance in obstructions of coronary arteries.

Key words: Small cardiac vein, thebesian vein, openings of smallest cardiac veins.

P-47

Importance of the fourth intermetacarpal extensor surface for donor tissue: a combined histologic and anatomic study

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Background: Extension to the little finger metacarpopharyngeal joints are provided by the extensor digiti minimi (EDM) and the extensor digitorum (ED). Damages given to extensor tendons of the little necessitate a detailed knowledge of tendons for transfer and repair. The purpose of this study is to study the structures which can be used as donor tendons. Methods: Fifty-four dissected hands were examined to study the pattern of the extensor tendons and their junctural relationships in the fourth intermetacarpal space of the dorsum of the hand.

Results: An absent (68.5%) or a single (24.1%) or double (7.4%) ED-5 was seen. A single (1.8%) or a double (88.9%) or a triple (9.3%) EDM tendons were seen in the fourth intermetacarpal space. In the triple EDM tendons, third tendon was inserted into fourth digit (EDM-4). The width and thickness of the EDC-4 was lower than the average in hands with EDM-4 tendon (p=0.05). The most frequent pattern of extensor tendons to the fifth digit was a slip of tendon from the ED-4, two tendons from the EDM. A juncturae tendinum (JT) was present in all hands in the fourth IMC space. In the 49 of them, the JT has tendinous slip extending from the ulnar aspect of the ED of the fourth digit (type3JT). We observed type3Y JT in 29 specimens (53.7%), type3r in the 20 specimens (37%).

Conclusions: The EDM was the dominant muscle in the extension of the fifth digit in the hand. Suitable excessive tendon and the thickest JT as donor tendon were found in the fourth intermetacarpal space. The present findings especially the fourth intermetacarpal space may explain why incisions on the dorsum of the hand should be large and performed with particular care.

Key words: Extensor digitorum, extensor digiti minimi, little finger, hand surgery, extension.

P-48

Clinical anatomy of lumbar plexus in fetuses

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The anatomy of the nerves of lumbar plexus is quite important for the surgical procedures performed on the posterior abdominal wall. Although there are studies on lumbar plexus of adults in the literature, we could not find any studies about the lumbar plexus in fetuses. The aim of the study is to describe the anatomy of lumbar plexus in fetuses and to establish the relation between the measurements of lumbar plexus in adults and fetuses. This study investigates the lumbar plexus bilaterally in 8 formalin fixed fetuses (5 females, 3 males), ranging from 34-37 weeks of gestation. Measurements were made using digital caliper and included the distance laterally from midline to each nerve's emerging site through the psoas major muscle and the distance of each nerve superior or inferior to the supracristal plane. Bone landmarks, such as the midline vertebral bodies, anterior superior iliac spine, and supracristal plane were used to identify the mean distances of the nerves of lumbar plexus. The ratios between the measurements of fetuses and adults were calculated. The mean distances from the midline to the emergence sites of the iliohypogastric, ilioinguinal, lateral femoral cutaneous, genitofemoral, and femoral nerves through the psoas major muscle were 13.5, 11.7, 8.1, 15.2 and 16.6 mm, respectively. And the ratios of the measurements of fetuses to the measurements of adults were calculated as 0.23, 0.18, 0.18, 0.25 and 0.37 respectively. We think results of this study will aid the surgeon while performing operations on the posterior abdominal wall.

Key words: Lumbar plexus, peripheral nerves, surgery, fetus.

P-49

Possible anatomic structures causing entrapment neuropathy of the ulnar nerve

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Ulnar nerve compression at the elbow is encountered as the second most common compression neuropathy after carpal tunnel

syndrome. The traumatic injury of ulnar nerve is common because it is the most commonly exposed nerve to tension and compression by upper extremity movements. One of the reasons of exposition to direct trauma is that it lies superficially in a big part of the upper extremity. Other causes are bony deformities of the elbow, external compression, fractures, compartment syndromes, muscle hematomas and causes of systemic neuropathy. Although there are detailed anatomical studies on hand and wrist, there are not enough studies about probable compression sites and the course of ulnar nerve in the elbow. In the present study primary aim was to explore the course of ulnar nerve in the elbow and forearm and determine possible compression points. Ulnar nerve was dissected in the elbow for 15 cm proximally and distally from elbow on 10 extremities of 5 cadavers. The possible structures that cause compression on ulnar nerve like fibrous bands, fascial thickenings and neurovascular anomalies were examined. The length of these bands and the distances from epicondylus medialis were calculated. On 6 examples the average length of the fibrous bands coming from septum intermusculare mediale attaching to epicondylus medialis and crossing the ulnar nerve before entering the cubital tunnel was determined 5.8 cm. The average length of ulnar nerve was calculated 4.2 cm inside the cubital tunnel. On 4 examples ulnar nerve was covered by muscle fibers after leaving the cubital tunnel, which originated from m. flexor digitorum superficialis extending to m.flexor carpi ulnaris. In addition, neurovascular structures were observed on all cadavers forearms which crossed n.ulnaris from above vertically. It is important to know the possible compression sites of n.ulnaris for an effective surgical decompression and to avoid complications during surgical procedures.

Key words: Ulnar nerve, cubital tunnel, entrapment neuropathy.

P-50

Intramuscular course of the sural nerve

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The sural nerve is a sensory nerve supplying the skin of the lateral and posterior parts of the inferior third of the calf and the lateral side of the foot. Because of its length, thickness and its being easy to harvest, the sural nerve is the most commonly used donor nerve for peripheral nerve grafting. During our routine dissections, we encountered bilateral variations of the sural nerve in a 77 year old female cadaver. The sural nerve, bilaterally, was a branch of the tibial nerve in the popliteal fossa, between the two heads of the gastrocnemius muscle. On both sides, the sural nerve penetrated the gastrocnemius muscle mass at the point where the two heads of the gastrocnemius muscle united. Until the sural nerve became superficial at the point where the calcaneal tendon was formed, it lied inside the muscle. Afterwards the sural nerve continued its way posterior to the lateral malleolus, accompanying the short saphenous vein. We believe that the intramuscular course of the sural nerve we have reported is important as the sural nerve is used as a peripheral nerve graft frequently.

Key words: Sural nerve, variation, intramuscular course.

P-51

Bilateral variations of the renal and testicular arteries: a case report

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The variations of the arteries which develop from the mesonephric arteries - including renal, gonadal and suprarenal arteries -are common. Understanding the anatomy of the variations of this region is essential for the clinicians to perform procedures such as renal transplantation, interventional radiologic procedures and renal and abdominal vascular operations more safely and efficiently. In order to facilitate the clinical approaches, we present a male cadaver with bilateral double renal arteries accompanied with doubled right testicular arteries and a left testicular artery of high origin and we have discussed surgical, radiological and possible embryologic aspects.

Key words: Renal artery, testicular artery, variation, double, bilateral.

P-52

Absence of the hemiazygos and hemiazygos accessoria veins

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Absence of the hemiazygos and hemiazygos accessoria veins were observed during routine dissection. The posterior inter-

costal veins between 4th to 11th and subcostal vein on the left side were crossed behind the descending aorta and drained into the azygos vein independently. This rarely reported variation must keep in mind in mediastinal surgery and radiological interpretations.

Key words: Hemiazygos vein, accessorial hemiazygos vein, variation.

P-53

Morphometry of the anterior fontanelle in human fetuses

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The dimensions of anterior fontanelle are important in point of the period of fetal development. Previous studies report that the fontanelle sizes increase with gestational age. The aim of this study was to determine the development and relations of the anterior fontanelle during the fetal period by morphometric analysis. Thirty two fetuses were medicolegally provided from Ankara Maternity and Women's Health Academic and Research Hospital. All data about the gestational age of the fetuses was collected from the hospital. The gestational age ranged from 13 to 27 weeks. Head length, biparietal diameter, coronal and sagittal diameters of the anterior fontanelle were measured in all cases. The mean anterior fontanelle size and the anterior fontanelle area were calculated. Significant positive correlation was found between the head length and biparietal diameter parameters and gestational age (r=0.872, p=0.001; r=0.875, p=0.001, respectively). In addition, similar correlation was found between head length and biparietal diameter parameters and coronal (r=0.411, p=0.037; r=0.374, p=0.050, respectively) and sagittal (r=0.537, p=0.005; r=0.533, p0.003, respectively) diameters of the anterior fontanelle. The anterior fontanelle size and area increased with biparietal diameter (r=0.484, p=0.009; r=0.456, p=0.015, respectively) and with head length (r=0.505, p=0.009; r=0.483, p=0.013, respectively). The mean anterior fontanelle size was found 23.91±5.86 (mean±sd) for both sexes. The dimensions of the anterior fontanelle for each gestational age not only.

Key words: Anterior fontanelle, morphometry, anterior fontanelle size and dimensions, fetus.

P-54

The collateral circulation of the spinal cord of the Guinea pig

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Spinal cord is affected by mechanical traumas or pathologies. These traumas are important to be caused to the neural deficits. It has been known that vascular structures of the spinal cord are associated with spinal cord injuries by direct or indirect ways. It is important to know the vascular and collateral circulation of the spinal cord in order to understand the evaluation of the neuropathology after traumas and injuries and also it is important to preserve vascular structures during surgical procedures in this region. In the present study, we aim to form a vascular cast made by polyester resin of the vascular structures of the spinal cord in the 20 adult male Guinea pigs. The casts were examined by stereomicroscope. We observed that the collateral circulation of the spinal cord in the Guinea pig was supplied by anterior, posterior, anterolateral and posterolateral spinal arteries. The great part of this collateral circulation was formed especially between anterior and posterior spinal arteries. The pial arterial plexus also plays an important role for the collateral circulation. We think that these results are important for further studies and worthy of note for researchers dealing with vasculature of the spinal cord.

Key words: Spinal cord, collateral circulation, guinea pig.

P-55

Densitometric analysis of the foot in ballerinas and the woman with high-heeled shoes

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Objective: Some daily syndromes appear like stress fracture of second metatarsal bone, problems in first metatarsophalangeal joint in the ballerinas. The studies about bone densitometry can give information not only about anthropometric, hormonal, nutrition, but also about the choice of the shoes and the mechanic traumas specific to sports. So that we executed this study.

Methods: In this study, a total number of 40, volunteers as ballerinas (n=13), high-heeled shoe wearing woman in social life

consistently (n=15), and the volunteers who are not making sport and wearing high heeled shoes regularly (control group n=12). First of all we have taken the radiographs of the volunteers. Then the physical examination have been done. In order to identify the bone mineral density (BMD), subchondral bone (first and second tarsometatarsal and metatarsophalangeal joints') densitometries are identified by using DEXA-Dual Energy (Norland). Friedman and Kruskavals tests are used for the statistical analysis ($p<0.05$).

Conlusions and Results: The BMD's of the ballerinas was higher than the other groups that active sports increase BMD in females. The high heeled shoe wearing woman has less BMD then the control group that wearing high-heeled shoes decreases the subchondral BMD. As a result we think that the observations of this study can be used as main anatomic knowledge and can help the clinicians to understand the problems better in the foot region.

Key words: Densitometric analysis, DEXA, bone mineral density, ballerina, foot.

P-56

Integration of e-learning and problem based learning in medical education

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The aim of this study is to determine students' satisfaction with a e-learning environment which is developed to support classical problem based learning (PBL) in Anatomical education and its effect on academic achievement. For this reason, students were provided with a web-based learning environment including learning materials related to objectives of the subject of problem based learning module, which could be used during independent study period. The study group comprised of all of the second year students (164 students) of Akdeniz University, Medical Faculty, during 2007-2008 education period. No selection was made among the study group. In order to gather data about students' satisfaction with learning environment, a questionnaire developed by the researchers was administered to the students. 156 of first year students answered the questionnaire (We were able to contact to 95.1% of the students). Comparison of students' academic achievement was based on their performance score in PBL exam. Findings indicated that 72.6% of the students were satisfied with e-learning practice while 16.4% were indecisive and 11% were unsatisfied. The mean PBL performance scores of users and nonusers of the e-learning programme were 103.58 (±14.62) and 100.88 (±17.51) respectively and there was no statistically significant difference between them ($p=0.320$, student t test). In conclusion, considering its positive effect on academic achievement and students' satisfaction with it, e-learning can be helpful to support traditional methods in medical education.

Key words: Problem based learning (PBL), e-learning, medical education, anatomy.

P-57

Clinical supervisor and peer consultation of faculty members a case study

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Objective: Clinical supervision in education is the sum of planned, co-operative activities that aim to change behavior patterns. The aim of this case study was to analyze the effect of peer consultation and clinical supervision on the development of educational competency for faculty members.

Methods: Our study was performed on students who attended a single lecture given by one of the faculty members from department of anatomy. The result was that in general in-class performance of the afore-mentioned faculty member was found very successful.

Conclusion: These findings reinforced the benefits of clinical supervision and peer consultation and may be used to improve the quality of in-class activities in medical schools.

Key words: Clinical supervisor, peer consultant, faculty member, competency.

P-58

Correlation of the summary method with the learning styles: a questionnaire survey for anatomy lessons

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Objective: Summary is the last part but one of the important parts of the theoretical lesson. Different summary methods

have been used by medical teachers. In the present study, we aimed to study the relationship between preference of the summary method (video demonstration, question-answer, brief review of slides) and learning style (accommodator, diverger, converger, assimilator).

Method: A total number of 131 students were included to the present study. An inventory was prepared to understand the students' learning style and a questionnaire for summary method selection. The questionnaire and inventory were collected and analyzed.

Results: Comparison of the data revealed that summary method with video demonstration received the highest score among the other methods. Additionally, there was no significant difference between learning styles and summary method with video demonstration.

Conclusion: We suggest that such summary method should be incorporated into anatomy lessons. Since anatomy has a large number of visual materials, we think that it is the right lesson to use this summary method. We think that finalization of the lesson with a video demonstration would facilitate to get a "home-take message".

Key words: Learning style, summary, video demonstration, anatomy, lesson.

P-59

Comparison of body measurement of children growth aged 8-15 years old with or without participating school for basketball and swimming

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The measurements of the part of the body during growth of children are always variable. Some factors such as genetics, sports, nutrition, cause these variations. In this study, anthropometric measurements of body parts of children aged between 8-15 years old with participated summer school including basketball, swimming activities and not participated such kind of activities during summer in Trabzon were compared. It was determined that there was no important difference between the children who participate basketball and swimming courses and who not. But, there were important differences in measurements of body parts between children those who do not participate any school for basketball, swimming and those who participate both of basketball and swimming activities. Consequently, it is thought that sports influences the body measurements during growth.

Key words: Anthropometry, sport, body composition.

P-60

The positioning of superficial veins in the cubital fossa and the relations between superficial veins on fetus cadavers

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This study was performed in Karadeniz Technical University, Faculty of Medicine, Department of Anatomy between October 2007 and June 2008. In the study, 59 cubital fossa of 32 fetus cadavers (20 girls, 12 boys) aged between 18.0 and 36.0 in weeks were analyzed. The distance of between medial epicondyl and lateral epicondyl, the width of wrist, the length of forearm and the location of superficial veins in the cubital fossa were examined and the morphometric measurements were done according to selected anatomical landmarks. The results of the measurements were statistically compared as girls to boys, rights to lefts, and anencephalic fetus to normal fetus. As a result of this study, the statistically meaning difference was found between anencephalic and normal fetus according to some parameters. It is thought that knowing the topografic locations of veins in the cubital fossa will shed light on the every kind of surgical evaluation concerning these veins and reduce the risk of complication.

Key words: Cubital fossa, superficial vein.

P-61

The osteoarthrit sighting localization in old cadaver knee joints; radiological, morphological and histopathological comparison

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Art. genu is a great joint that is formed by medial, lateral and patellofemoral components. Osteoarthritis (OA) is the most

frequently seen rheumatic disease in advanced ages and affects this region separately or in different combination. In this study the general properties such as the location, situation, intensity and the lesion of OA was identified and compared radiologically and morphologically. We aimed to determine the relationships between them. Radiological observations; The general properties of OA was studied by knee antero-posterior and lateral graphies of cadaver radiologically and scored by Kellgren Lawrence score sheet. Morphological observation; Each joint surface obtained from formalin fixed cadaver such as ventral, dorsal, lateral, medial and central. The location of the cartilage downloads, situation, intensity and the lesion were evaluated. Histopathological observation; The general properties of the joint surface and the synovial capsule obtained from formalin fixed cadaver's knee was studied by hematoxilen eozin and toluen blue histological techniques. As a result the degenerative alterations of the knee joint of cadavers overweighted lower extremite joints, were studied morphologically, histologically and radiologically and the correlations of each stages of the methods were identified. By this way how the radiological evaluation for the diagnosis effects the degenerative occurrence is began to understand. Additionally this study will improve the knowledge of prevention of OA in knee joints.

Key words: Osteoarthrit, knee joint, anatomy.

P-62

Interscalen approach for brachial plexus in cadavers

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Objective: The purposes of the peripheral nerve blocks are to take the informed affirmation of the patient, to monitories, to choose the best and appropriate blocking technique and to apply the anaesthetics in the convenient volume and concentration. Interscalen block is applied in shoulder surgeries, causalgia, phantom pains, peripheral neuralgia for surgical anaesthesia, decreasing the pain, resolving the vascular spasm and to settle down the pain after traumas. It is also ideal application for shoulders dislocations. In this study we aimed to emphasize the importance of the anatomy in clinical procedures, and to reveal out the distribution of the interscalen brachial plexus in cadavers.

Method: We used four fresh cadavers by single injection technique. The anatomical landmarks were used as reference for interscalen block. 20 G spinal needle was used for every blocking procedure and skin, and subcutaneous structures were separated. 20 ml 0.1 methylane blue was injected from anatomical landmarks and minute dissection was performed.

Results and Conclusion: Interscalen block achieve effective analgesia for shoulder and upper extremity. Upper roots of the brachial plexus can be easily blocked. But for a robust blockage the lower roots must be blocked. After dissection of the four cadavers we observed that the trunk, cord and branches of the brachial plexus was coloured with methylane blue and the colour was getting lighter as long as the nerve trace. So we think that it is an easy, reliable, robust and free of position method for anaesthesia and analgesia of the upper extremity.

Key words: Brachial plexus, interscalen block.

P-63

Supraclavicular and infraclavicular brachial plexus block techniques in cadaver

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Objective: The brachial plexus is a network of nerves that controls muscle movements and sensation in upper limb. Since brachial plexus block is applied during pain treatment, surgery, diagnose and orthopedic manipulations of upper limp. In every brachial blockage technique injection of local anesthetic is applied in the axillary sheet. Every surgery landmark has advantages and indications according to the anatomic properties of the point, the skills of anesthetist and the individual properties of the patient.

Method: Eight upper limbs from four fresh cadavers were used for this study. Injections were made using a standard 20G needle and an injection of 40 mL 0.1% methylene blue dye was performed into the axillary sheet. The skin and subcutaneous tissue dissection was carried out according to the normal anatomical procedures.

Results: In all 4 cadavers dye was found darker in the truncus, cord and it became lighter distally.

Discussion: We didnot demonstrate any difference between the two techniques. The supraclavicular method can be preferred

because of the application easiness and the risk of the infraclavicular method such as pneumothorax, hemothorax, chylothorax.

Key words: Brachial plexus, supraclavicular block, infraclavicular block.

P-64

Morphometry of the femoral intercondylar notch and its clinical importance

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In this study, one hundred human femoral bones (51 right, 49 left) from the skeletal collection of Ege University Faculty of Medicine, Department of Anatomy, were used for the morphology and morphometry of the femoral condyles and the intercondylar notch. Length of the femoral bones were measured as 42.89 cm (min. 37.2-max. 48.1). Bicondylar width and intercondylar notch width were measured as 72.49 mm (min. 61.52-max. 82.76) and 20.14 mm (min. 13.79-max. 29.01), respectively. Notch width index was 0.28 (min. 0.21-max. 0.36). Condylar depth and intercondylar notch depth were measured as 60.49 mm (min. 50.32-max. 72.29) and 28.73 mm (min. 23.43-max. 36.11), respectively. Notch depth index was 0.47 (min. 0.43-max. 0.53) and the intercondylar notch angle was 51.18º (min. 35º-max. 76º). Morphology and morphometry of the intercondylar notch between two condyles plays an important role on the cruciate ligaments' stability, especially for the anterior cruciate ligament. A clinical relevance between the anterior cruciate ligament injuries and the intercondylar notch stenosis has been suggested. This study gives detailed information on the morphology and morphometry of the intercondylar notch on a large series of femoral bones from a Turkish population.

Key words: Human anatomy, femur, intercondylar notch, morphometry, anterior cruciate ligament.

P-65

Morphological evaluation of the lateral thoracic and thoracodorsal arteries in coronary bypass surgery as an alternative arteral graft

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Internal thoracic artery and great saphenous vein are actually the two most commonly used coronary by-pass grafts. Arterial grafts have better patency ratios than venous grafts. The aim of this study was to determine whether the lateral thoracic and thoracodorsal arteries are eligible as graft for use in coronary by-pass operations. Lateral thoracic and thoracodorsal arteries, bilaterally obtained from 9 adult male cadavers with an average age of 56.67±6.38, were used. The morphometric features (length, lumen diameter, tunica intima and media thicknesses, features of the internal and external elastic lamina, elastic and nonstriated muscular tissue contents of the tunica media layer) of the proximal, middle and distal portions of these arteries were compared with the morphological features of the internal thoracic, radial and coronary arteries (anterior interventricular branch, circumflex branch, right coronary artery). It was determined that the lateral thoracic and thoracodorsal arteries have well developed internal elastic lamina. Moreover, it was observed that the tunica intima and media thicknesses of the lateral thoracic and thoracodorsal arteries were usually similar to or thinner than those of the internal thoracic and radial arteries. The length and lumen diameter of the lateral thoracic artery were found to be insufficient for being a free, arterial graft alone while the values for the thoracodorsal artery were sufficient. However, regarding their length and lumen diameter, it was concluded that both arteries are sufficient for being composit grafts (e. g. Y graft) when used together with other arteries.

Key words: Alternative arterial graft, lateral thoracic artery, thoracodorsal artery, coronary bypass surgery.

P-66

Effect of formaldehyde inhalation on the intercellular junctions of the nasal mucosa in rats

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The irritable properties of formaldehyde inhalation for the nasal mucosa is known. But the cytological features are not well known. In this study we aimed to examine the deformation of the intercellular junctions caused by formaldehyde inhalation by immunohistochemical and TEM methods. In this study we used a total number of 20 adult, female rats. Rats were divided as 10 rats for experimental and 10 rats for control groups. Experimental group was exposed to 15 ppm formaldehyde for

6h/day, 5days/week for 12 weeks. In each group, at the end of experimental procedure, the animals were sacrificed and samples of nasal mucosa were taken. Then routine histological embalming procedures were performed. We semi-quantitatively evaluated the staining density of the Plakoglobin, Occludin and E-Cadherine by immunohistochemical staining and compared to the TEM results.

Key words: Formaldehyde inhalation, e-cadherine, occludin, plakoglobin, rat.

P-67

The anatomy of the orbit and its contents in lateral orbital approaches

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The microanatomy of the orbit and its contents has not been well defined in clinical anatomy studies utilizing cadavers. Lateral orbitotomy is a classical approach which is performed along the lateral orbital wall to excise masses located at the lateral wall of the orbit. The regional anatomy and the relationships between anatomical structures were investigated on 18 orbit specimens taken from adult cadavers. A triangle was defined to ease the localization of the structures during lateral approach. This triangle was bounded by the superior rectus, lateral rectus and the globe. Among the intraorbital structures, various measurements were performed on extraocular muscles, optic nerve, abducent nerve, orbital part of the lacrimal gland, ciliary ganglion and the central retinal artery. Additional measurements were performed using the defined triangle and variations were documented. Layer-by-layer dissection eased the identification of the structures. While some of our data were in concordance with some of the previously published data, some others were unique. The lacrimal gland was observed to be innervated by two lacrimal nerves in one cadaver. And a third branch of the oculomotor nerve was identified just before passing through the lateral compartment of the common tendinous ring in another cadaver. This branch was innervating the levator palpebrae superioris muscle. Our results showed that the contents of the orbit may have variations which can complicate the operation during lateral approaches to the orbit. We suggest that the results of this study would be of benefit for the surgeons dealing with this region.

Key words: orbital anatomy, lateral orbitotomy, orbit.

P-68

Formation of the new vessels around the sciatic nerve after epineural devascularization

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Objectives: Local vascular pathologies on peripheral nerve trunks can be compensated by dense vessels and also by well-developed collateral branches. In the present study, we aimed to study the formation of the epineurial vessels around the sciatic nerve after devascularization of the epineural vessels.

Methods: A total number of 40 male rats were divided into 4 groups (control, sham, Group 1, and Group 2). Devascularization of the epineurial vessels around the sciatic nerve were performed approximately one cm (narrow devascularization) and two cm (wide devascularization) in Group 1 and 2, respectively. The devascularized part of the sciatic nerve was inspected and photographed by stereomicroscope for three weeks by seven days intervals.

Results: In the present study we found that neovascularization depends on severity of the devascularization. Neovascularization was originated from the branches of the new longitudinal vessels in Group 1. However, new longitudinal arteries and muscular perforators gave off new branches around the sciatic nerve in Group 2.

Conclusion: Due to the new vessels originated from the muscular perforators, wide devascularization resulted more damage than the narrow devascularization in the sciatic nerve. This should be kept in mind in understanding of the vasculitic neuropathies and microenvironment after the vascular damage of the nerve.

Key words: Sciatic nerve, devascularization, neovascularization.

P-69

A comparison of some anthropometric measurements among young male versus female university volleyball players

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Objective: A player's anthropometric and physical characteristics may represent important prerequisites for successful partic-

ipation in any given sport. Indeed, it can be assumed that a player's anthropometric characteristics can in some way influence higher level of performance, as well as helping to determine a suitable physique for a certain sport. The aim of this study is to compare some anthropometric measurements in young male versus female university volleyball players who competed in 2008 Interuniversity Volleyball Championship in Turkey.

Methods: Fifty male volleyball players (aged 20.9±2.3 years) and fifty female volleyball players (aged 20.4±1.9 years) participated in this study. The height, body weight, chest girth, waist girth, right upper extremity length, right arm length and circumference, right forearm length and circumference, right lower extremity length, right thigh length and circumference, right leg length and circumference were measured. The measurements were done using an anthropometric set and tape measure. Right claw strength was assessed using dynamometer. Agility and vertical jump were assessed using a digital mat. Skinfold thickness was measured using skinfold caliper. The sites of skinfold measurement were the triceps, sub-scapular, abdominal, suprailiac and chest regions on the right side.

Results: The strength, vertical jump and anthropometric measurements of male volleyball players were found to be higher than the ones of the female volleyball players, and the differences were statistically significant ($p<0.001$). Female volleyball players' agility were higher than the male ones and this was also statically significant ($p=0.005$). However, there was no statistical significance between the measurements for skinfold thickness in male versus female volleyball players except for biceps and triceps thickness ($p>0.05$).

Conclusion: The differences suggest that the female players seems to be more agile than the male players, while the male players have higher body sizes and stronger in terms of muscle power than the female ones.

Key words: Antropometry, volleyball, skinfold caliper.

P-70

The effects of hair colouring materials to the corneas of newborn rats

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Objective: This experimental study, in the intrauterine period, has been realized to investigate histopathological effects of hair colouring materials, like 2 amino-5-nitrophenol (2A5NP) and 2-Nitro-p-phenylendiamin (2NPPD), to the corneas of new born rats which are exposed to said materials.

Method: Experiment has been performed on 26 Wistar-Albino rats as explained below: A dosage of 100 mg/kg/day of 2A5NP was injected on the 7th and 15th day of pregnancy into subcutaneous space of 10 rats which were randomly selected, a dosage of 150 mg/kg/day of 2NPPD was injected again into subcutaneous space of other 10 rats, sterile saline was injected to remaining 6 rats which are used to form a control group. Fetuses were taken out by the caesarian section in the 20th day of pregnancy. After the decapitation of 90 fetuses -30 fetuses by group, from group 1 (2A5NP), group 2 (2NPPD) and group 3 (control group); enucleated right eyeballs of all fetuses and fetuses' corneas were investigated histopathologically in the 1st postnatal day.

Results: Significant histopatological alterations were determined in the corneas of group 1 and group 2 comparing to control group ($p<0.05$). These alterations in group 1, 2 and 3 were, epithelial proliferation; 2 eyes, 5 eyes, 1 eye, endothelial proliferation; 5 eyes, 3 eyes, 0 eye, stromal proliferation; 5 eyes, 6 eyes, 0 eye, teratogenic corneal agenesis; 10 eyes, 9 eyes, 4 eyes, respectively. No histopathological alterations were determined at 6 eyes in group 1; at 5 eyes in group 2; at 25 eyes in group 3 ($p>0.05$).

Conclusion: Cornea epithelium is smooth and multilayered whereas endothelium has a unique layer containing regular stromal fibrils within the structure of normal eyes. However, corneal histopathological alterations have been observed within the corneas of rats which are exposed to hair colouring materials in the intrauterine period of pregnancy. As a result, it can be advised that pregnants have to avoid using hair colouring products especially in the first trimester.

Key words: Hair colouring materials, histopathological effects, cornea.

P-71

The anatomic features of the hypoglossal canal in human skulls

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Because of low incidence of lesions of the hypoglossal nerve that exit the skull base via hypoglossal canal, little has been found in the literature about the anatomic features of the

hypoglossal canal. The aim of present study was to demonstrate the anatomic features of the hypoglossal canal. The methodology in present study was based on the classification of Hauser and De Stefano (1985). Ninety seven dry skulls, 16 skull bases and 118 occipital bones were used in this study. The total number of specimens was 462 (right and left sides). The average width of the hypoglossal canal was 4.6±0.9 mm and the average length of the canal was 7.6±1.5 mm. The variations of the canals were identified as five types with subgroups. The most common type was type 1 (66.2%). No trace of division was present in this type (classic type). One of the types (type 4b) observed in this study was not described previously in the literature. There was a partial division with osseous spines and a complete osseous bridge inside the hypoglossal canal in type 4b. The failure to identify a bipartiate or a tripartiate hypoglossal canal as observed in present study in preoperatively can lead to damage to hypoglossal nerve during the surgery. We believe that knowledge about the features of the hypoglossal canal and use of preoperative imaging methods for it can be helpful in choosing the correct approach for surgery.

Key words: Hypoglossal canal, hypoglossal nerve, occipital bone, anatomical variation.

P-72

Absence of middle hepatic vein combined with retroaortic renal vein: a very rare case report

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Hepatic and renal veins drain into inferior caval vein. Upper group of hepatic veins consists of three veins and these extend to the posterior face of liver to join inferior caval vein. Left renal vein passes anterior to the aorta just below the origin of superior mesenteric artery. We detected a variation in the hepatic and renal veins in multislice CT angiogram of a 9 year old male patient in Radiology Department of Afyon Kocatepe University Medical School. The upper group hepatic veins normally drain into inferior caval vein as three separate trunks, namely right, left and middle. In our case we found that only the right and left hepatic veins existed and the middle hepatic vein was absent. Furthermore, the left renal vein, which normally passes anterior to abdominal aorta, was retroaortic. Left renal vein variations are of great importance in planning retroperitoneal surgery and vascular interventions. The knowledge of hepatic vein and renovascular anatomy and determining their variations and anomalies are of critical importance to abdominal operations, transplantations and preoperative evaluation of endovascular interventions.

Key words: Variation, vena hepatica media, left renal vein, CT.

P-73

Body height estimation from head and face dimensions

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A different Studies on stature estimation depending on head and face dimensions are not so common. Limited studies on this subject emphasize a little or mild correlation between head and face dimensions and stature. In the present study in order to increase the reliability of the estimations the correlations between head and face dimensions and body height have been evaluated according to different head and face types. The study was hold on 286 healthy meal subjects aged between 22.71±4.86. Our results indicate a low correlation between head and face dimensions, and body height (0.122 and 0.229). In the second step of the study the sample was classified according to different head or face indexes and correlations were reevaluated for each group. Such a classification did not cause a significant increase in the correlations. However in acrocephalic subjects according to height -width index (100 head heighrt head width) a significant increase was observed between minimum frontal breadth and stature, and head circumference and stature. On the other hand it is known that the incidence of acrocephalic subjects is relatively low in Turkish population. In addition to this for the subjects with a wide lower jaw according to zygomandibular index (100 bigonial with bizygomatic width) the correlation between bizygomatic breadth and stature was observed increased when compared with the general population. However it could be concluded that such a method does not cause an increase in the reliability of the stature estimations based on head an face dimensions.

Key words: Forensic antropology, head, face, body height estimation.

P-74

What fascial tissue thickness measurements present medicine

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Objectives: Soft tissue and bone, altogether determine facial (face) harmony and balance. The changes in the proportions of the soft tissues and other regions especially during the embryological growth play an important role in the normal appearance of the face. The aim of this study is to determine the facial tissue thickness, the methods to measure it and the importance of using those measurements scientifically as well as analyzing the facial tissue thickness measurements of Turkish population.

Results: Facial soft tissue thickness constitutes an important information that is used in forensic facial reconstruction, in facial reconstruction in plastic surgery and in planning and following the orthodontic treatments. Previous studies indicated that the tissue thickness varied with age and gender. Facial soft tissue thickness is measured using different methods in cadavers and in the living. The simplest method is the needle sticking method. The technological improvements frequently used are of cephalometry, ultrasonography (USG), computerized tomography (CT) and magnetic resonance imaging (MRI) recently.

Conclusion: Performing facial tissue measurements at different ages and in different geographical regions is important to determine varibilities and obtaining statistically reliable results.

Key words: Facial tissue, cephalometry, forensic anthropometry.

P-75

Ameliorative effect of caffeic acid phenethyl ester (CAPE) on histopathological and biochemical changes induced by cigarette smoke in rat kidneys

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It was aimed to investigate the histopathological and biochemical changes in kidney tissues of rats exposed to cigarette smoke and possible protective effects of caffeic acid phenethyl ester (CAPE) on these changes. To this end, 21 male Wistar albino rats were divided into three equal groups. Animals in Group I were used as control. Rats in Group II were exposed to cigarette smoke and rats in Group III were exposed to cigarette smoke and daily administration of CAPE. At the end of the 60-day experiment period, all the animals were sacrificed by decapitation. The serum samples obtained from the animals were studied for uric acid, creatinine, and blood urine nitrogen (BUN) levels. Following routine histological procedures, kidney tissue specimens were examined under a light microscope. In addition, catalase (CAT), superoxide dismutase (SOD), glutathione peroxidase (GSH-Px), nitric oxide (NO) and malondialdehyde (MDA) enzyme activities were spectrophotometrically determined in the tissue samples. In our study, serum uric acid and BUN levels of the rats exposed to cigarette smoke alone were elevated, although serum creatinine levels did not significantly change. Furthermore, renal SOD, GSH-Px, NO, and MDA levels were significantly increased, while CAT levels were decreased. Contrarily, in the rats exposed to cigarette smoke and injected with CAPE, BUN, renal SOD, GSH-Px, NO, and MDA levels were decreased, whereas CAT levels were increased. In light microscopy evaluation of the tissues from the rats exposed to smoke, mesengial cell increase in the renal corpuscle structure, dilatation and congestion in peritubular vessels, and degeneration in proximal tubules were noted. There were also atrophic renal corpuscles. However, these histopathological changes were partially disappeared in the rats exposed to cigarette smoke plus CAPE. In conclusion, the cigarette smoke caused decreased renal functions, which could be prevented by CAPE administration.

Key words: Kidney, cigarette smoke, caffeic acid phenethyl ester, light microscope.

P-76

The morphological changes on the lung tissue of newborn rats of mothers exposed to diazinon and the effects of cafeic acid phenyl ester on these changes

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Diazinon is an organophosphate insecticide used in agriculture and has some harmful effects on nervous, metabolic and

endocrine, cardiovascular and urogenital systems. Also organophosphates pass through placenta.Caffeic acid phenethyl ester (CAPE) has antiinflammatory, antimicrobial, and antioxidant properties. The aim of present study was to investigate weight gains of pregnant rats, newborn weights and microscobic changes in the lungs of newborns whose mothers were exposed to diazinon during their pregnancy. Wistar Albino rats divided into 3 groups as follows; Group 1: control group, Group 2: 25 mg/kg/day diazinon in 14-18. days of pregnancy, Group 3: 25 mg/kg/day diazinon + 10 µmol/kg/day CAPE in 14-18. days of pregnancy. Maternal weight gains and the weights of newborn rats were recorded. Three days after the end of pregnancy, newborn rats were decapitated and their lungs dissected and prepared for light microscobic examinations. Weight gains of pregnant rats in group 2 and their newborn rats weights were lower than the control group ($p<0.05$). In examination of newborns lungs, some blooding spots were observed macroscobically and intraparenchymal inflammatory infiltration, alveolar and bronchial hemorragie, intraparenchymal vascular congestion and thrombosis, emphysematous changes in lung tissues of the newborn rats microscopically. It is also observed that administration of CAPE in group 3 considerably reduced these pathologies ($p<0.05$). This study concluded that diazinon causes low weight gain, low birth weights in newborns, and macroscobic and microscobic changes in lung tissues of newborn rats, and that CAPE has ameliorating effects on these changes.

Key words: Diazinon, CAPE, lung, rat, morphology.

P-77

Immunohistochemical investigation of morphological structure of hippocampus in testosterone administrated rats

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In our study, morphological changes of hippocampus were investigated in the orchidectomized rats. In addition, the effects of testosterone administration was investigated on these changes. For this aim, twenty one Albino-Wistar male rats weighing 230-250 g were used. All animals were divided three equal groups. The rats of group I was used sham-orchidectomi (control). The rats of group II were operated orchidectomi. The rats of group III was administrated testosterone propionat (0.5 mg/kg) for 30 days after orchidectomi. All animals were decapitated at the end of the study. The hippocampus tissues of the rats were removed and tissue samples were processed by using routine paraffin techniques. Paraffin sections were stained with different dyeing methods. In addition, the samples were immunohistochemically stained using avidin-biotin-peroxidase method for bax immunoreactivity. In orchidectomized rats increased number of picnotic cells were observed under the light microscopic examination. In addition, bax immunoreactivity were significantly increased compared to those in control group. Administration of testosterone to orchidectomized rats significantly decreased bax immunoreactivity and ameliorate the other histopathological changes. In conclusion, the present study showed that orchidectomi induced changes in morphological structure of hippocampus was significantly suppressed by testosterone administration.

Key words: Hippocampus, testosterone, orchidectomi, immunohistochemistery.

P-78

Anatomy of the supraorbital region and surgical importance

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Damaged supraorbital neurovascular bundle during anterior orbital approach, fronto-glabellar reconstruction flap, supraorbital injection, blepharospasm, and Graves disease surgery is an important complication reported with varying frequency. The origin, calibration, and branches of the supraorbital artery and its topographical relations were investigated by injection of the arterial bed with red-dyed latex in 38 forehead regions. The supraorbital artery with the supratrochlear artery arose from the orbit as two separate vessels in 33 out of 38 forehead sides (%87). The supraorbital artery entered the frontalis muscle between 20 and 30 mm in 20 cases (%52.6), and between 30 and 40 mm in 16 cases (%42.1). The transverse supraorbital vein coursed at the level of the orbital rim on 22 sides (%58)

and between 6.1 and 11.2 mm (mean: 9.4 mm) above the supraorbital rim on 16 sides (%42). All branches of supraorbital nerve were located between 2.0 and 3.2 cm from the midline at the level of the orbital rim. In 23 cases (%60), the lateral branch of the supraorbital nerve exited the bone as two branches, usually one large and one much smaller. A better understanding of the midline forehead neurovascularity should allow modification of reconstructive techniques, afford better localization of the supraorbital nerve during blepharoplasty and ptosis surgery, and reduce the incidence of postoperative hematomas and nerve injuries.

Key words: Supraorbital artery, supraorbital nerve, supraorbital vein, plastic surgery, anaesthetic block.

P-79

Evaluation of the sole morphology of the professional football players

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Foot is the contact point of the body with ground and transmits the body weigth. Footprint analysis is one of methods to diagnose the sole pathologies. Football is the most popular sports in the world and in order to reduce risk of injuries and increase the performance suitable and ergonomical soccer boots can be designed. The aim of this study is to evaluate the sole morphology of the professional Turkish football players and compare with the healthy volunteers with no sports history. 110 Turkish professional football players and 104 healthy volunteers participated in the study. Footprint images of both feet were obtained by a scanner system. Images of the right and left static weight bearing footprints acquired under 50% of the body weight and 90% of the body weight. Measurements were performed using AutoCAD 2004 software. Arch angle, Chippaux-Smirak, Staheli, arch length, arch, footprint and truncated arch indices were calculated for both left and right feet. Arch angle, Chippaux-Smirak, Staheli and truncated arch indices of right footprints and arch angle, Staheli indices of left footprints of football players acquired under 50% of the body weight were significantly higher than the control groups'. Arch angle and truncated arch index of right footprints and arch angle, footprint and truncated arch indices of left footprints of the football players were acquired under 90% of the body weight were significantly higher than the control groups'. Foot morphology of Turkish football players may help to design suitable shoes.

Key words: Foot, footprint, footprint index, football.

P-80

Surgical anatomy of presacral area

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Objective: L5-S1 instabilities can be fixated using minimally invasive presacral approach. The close relationship between the sacrum and neurovascular as well as intestinal structures may complicate the procedure during this approach. This requires knowledge regarding the normal anatomy of the presacral area to avoid the iatrogenic injuries. The aim of this study is to measure the distance between the sacrum and the structures anterior to it.

Methods: The measurements were performed on 10 cadavers and 10 MR imaging studies on individuals without any pathology in the presacral area. The distances between the sacrum and the presacral structures were measured.

Results: Cadaver study showed that the middle sacral artery was located on the right side in 50%, on the left side in 35.18%. The distance between the sacral midline and middle sacral artery was found to be 8.0±5.4 mm, 9.0±4.9 mm, 8.7±6.0 mm, 8.6±6.4 mm, and 4.7±5.0 mm, at the levels of S1-2, S2-3, S3-4, S4-5, and S5- coccyx, respectively. The distance between the sacral midline and the sympathetic trunk ranged between 22.4±5.8 mm and 9.5±3.2 mm in different levels between S1 and coccygeal level. The study also showed that the distance between the posterior wall of the intestine (colonrectum) and the anterior surface of the sacrum can be as close as 11.44±7.7 mm on MR images.

Conclusion: This study showed that there was close distance between the sacral midline and the structures anterior to it. The close relationships, as well as the potential for anatomical variations require the use of sacral and presacral imaging before presacral approach.

Key words: Presacral area, median sacral artery, presacral approach.

P-81

The morphometric study of V3 segment of the vertebral artery for antero-lateral and posterior approaches to upper cervical spine

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Objectives: The vertebral artery (VA) V3 segment extends from the C2 transverse foramen to the duramater of the foramen magnum. C1 and C2 vertebras are the most mobile segment of the cervical spine and cervical traumas mostly effect this segment. For transarticular screw fixation and also decompression of neural structures surgeons must know this portion of cervical spine very well. Perfect knowledge of the anatomy and the surgical technique permits a safe exposure and control.

Methods: We performed our study on 6 formaldehit fixed cadavers in Anatomy laboratory of Dokuz Eylül University. The cadavers were decapitated from C4 level of cervical spine. We performed silicon injection to all cadavers. The did microdissections under Zeiss microscope. V3 segment and its relationships to C1 and C2 bones also to other adjacent structures were studied. Measurements done with 0.1 mm sensitive caliper.

Results: Distance between medial border of VA on groove vertebral artery (C1) and midline measured 16.1±2.6 mm, distance between VA medial border in transvers foramen is measured 28.5±2.3 mm. Distance between lateral border of VA on groove vertebral artery (C1) and midline measured 20.9±4.0 mm, distance between VA lateral border in transvers foramen is measured 32.6±2.8 mm Diameter of VA measured is 4.4±0.6 mm. Distance between foramen magnum and transvers foramen (C1) is measured 9.0±3.7 mm and distance between transvers foramen C1 and C2 vertically is measured 15.5±2.8 mm.

Conclusion: We believe that to define the relationship of C1 and C2 vertebras which are the most mobile segment of cervical vertebra and vertebral artery V3 segment will reduce surgical complications and increase safe surgical approaches.

Key words: VA V3 segment, suboccipital region, C1, C2.

P-82

An anatomic study of the peripheral nerves innervating the occipital region

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Objective: Occipital region surgical procedures or for occipital neuralgias clinicians perform nerve blockades to great occipital nerve (GON). We may see occipital neuraligias or neuropraxis of this region just because of compression to GON. To prevent complications and to perform nerve blockades safely we showed occipital nerves with their external bone landmarks.

Metods: We performed our study on 6 formaldehit fixed cadavers. We performed silicon injection to all cadavers and than performed microdissections under Zeiss microscope. The nerves of this area, the lesser occipital nerve (LON), the greater occipital nerve (GON) and the great auricular nerve (GAN), and occipital artery (OA) were dissected. All measurements were made with 0.1 mm sensitive calipers.

Results: GON diameter is 2.5±0.3 mm on point of perforation to SSCM(semispinalis capitis muscle) by GON. Distance between point of perforation to SSCM by GON and external occipital protuberencia (EOP) is measured 53.6±5.0 mm distance between this point and midline is measured 9.0±1.9 mm, distance between this point and intermastoid line is measured 11.5±3.9 mm and distance between this point and mastoid process is measured 65.5±5.9 mm, Distance between EOP and point of perforation to trapezius muscle (TM) by GON is measured 47.9±8.0 mm, distance between this point and midline is measured 15.1±7.0 mm, distance between this point and intermastoid line is measured 17.1±2.8 mm, and distance between this point and mastoid process is measured 59.4±2.3 mm. Distance between point of perforation to TM by OA.

Conclusion: Our study has documented potentially useful superficial bony landmarks for the identification of the cutaneous nerves of the posterior head and neck.

Key words: Occipital region, greater occipital nerve, lesser occipital nerve.

P-83

Comparison of hands sizes and fingers abduction capacity between dominant and nondominant hand

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People have to use their hands in daily life. Therefore, one of the hands is most dominant than the other hand to perform specialized and complicated manual skills. Dominant cerebral

hemisphere select this hand. In this study, it was tried to answer whether there are differences between dominant and nondominant hands in relation with hand sizes and abduction capacity of fingers. This study was done at Karadeniz Technical University, Faculty of Medicine, Department of Anatomy between May 2008 and June 2008. Subjects of the experiments was selected first and second classes of The Faculty of Medicine, and The Faculty of Dentistry. A poll was applied to volunteers to select their dominant hand. Two hands of the volunteer were scanned in the scanner and the images were transferred to computer. Then, hand sizes and fingers abduction capacities were compared between dominant and nondominant hands on these images. There were no difference significantly for all comparisons in males ($p>0.05$). Abduction capacity of thumb on the dominant hand was significantly more then its nondominant hand in females ($p=0.002$). Also, abduction capacity of thumb on the right hand was more than thumb on the left hand in females who preferenced hand is pure right ($p=0.008$). It was analyzed all of the volunteer's measurements; abduction capacity of thumb and little finger on the dominant hand were more then abduction capacity of thumb and little finger on the nondominant hand ($p=0.000$, $p=0.023$) and abduction capacity of thumb and little finger on the right hand were more than thumb and little finger on the left hand in persons who preferenced hand is pure right ($p=0.004$, $p=0.027$).

Key words: Hand preference, abduction.

P-84

Vessels of the heart: a terminological evaluation

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Heart is one of the organs which draw attention of the mankind since ancient eras. There are too many studies related with heart and its vessels within last 6 decades in the literature. It is seen that nomenclature of vessels of the heart, especially their branches has changed since then. The aim of this study is to identify such changes, reveal terminological differences and emphasize these differences between anatomy and some other clinical sciences (cardiology, cardiovascular surgery, etc). In this study 10 thesis, 32 classical textbooks and 4 atlases of Anatomy, published between 1951-2007 were evaluated. The most prominent terminological differences were found to be in the nomenclature for branches of coronary arteries and veins of the heart. Although there were no such terms in the Terminologia Anatomica (1998) regarding the veins of the heart, some of the above mentioned resources displayed names for veins such as "coronaria dextra" or "coronaria sinistra" resembling the names given to the arteries of the heart. Using common terminology or mentioning the source for different nomenclature in basic and clinical sciences will be useful for educational purposes. The benefits of using common terminology during the education of medical students in various clerkship rotations and among various reference books for subspeciality students is obvious in avoiding dilemmas about terminology. To our point of view, using common terminology is going to be advantageous in speaking a common scientific language.

Key words: Terminology, coronary artery, veins of the heart, coronary vein.

P-85

Light microscobic evaluation of cinnamon extracts on diabetic nephropathy in experimental diabetes

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Objectives: Diabetic nephropathy is one of the important cause of mortality in diabetic patients. Cinnamon extract reduces glucose concentrations in diabetic patients, but its effects on diabetic neuropathy are still unclear. The aim of this study was to investigate the effects of oral cinnamon supplementation on diabetic nephropathy at light microscopical level in diabetic rats.

Methods: Fifhteen Spraque-Dawley rats were divided into 3 groups; control (C) , diabetic without cinnamon (D) and diabetic with cinnamon (D-C). Diabetes was induced with intraperitoneal alloxan administration. All diabetic rats were treated with 4 IU/d human insulin. All rats were fed with standard pellet chow. (D-C) group rats were fed with standard pellet chow plus cinnamon (Cinnamomum cassia) at the dose of 400 mg/kg. All rats were sacrified after 3 months and kidney tissues were fixed in Bouin solution, embedded in paraffin, stained with Hematoxylin-Eosin and Periodic-Acid-Schiff.

Results: Glomerules and tubules were seen in normal histological structure in control group. Hypertrophy in glomerules, narrowing in Bowman's space, dilatation of glomerule capillary were observed in diabetic group. In the same group, hydropic degeneration on tubules epithelial cell and degeneration of brush border in tubules were seen. The thickness of glomerular basale membrane were detected. In diabetic with cinnamon group, we were seen that the glomerules and tubules were protected the normal histological structure. Cinnamon extracts may have beneficial effects on the prevention of diabetic nephropathy in ligth microscopical levels in alloxan-induced diabetic rats.

Key words: Experimental diabetes, cinnamon extracts, diabetic nephropathy.

P-86

The anatomical variations of wrist in MRI with the correlation of median nerve conduction studies in CTS patients

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The aim of the study was to evaluate the morphological findings determined by MRI in patients with Carpal Tunnel Syndrome(CTS) and to research the correlation between MRI and nerve conduction studies which inform about median nerve function. For this reason, a case group which consists of 30 female patients that diagnosed as CTS and classified electrophysiologically was compared with volunteer control group that includes 20 female individuals without any wrist complaints. Evaluation of MRI of the patients with CTS showed that, there was an increase in signal intensity in median nerve proportionally with the severity of the case. There was a flattening and smaller section area than control group images at the hook of the hamate level which reflects CTS, when the median nerve section areas were compared at 3 different levels. In five cases, interposition of median nerve (median nerve lies deeper than normal situation, between M.flexor pollicis longus and M.flexor digitorum superficialis) was detected. As a result, MRI findings were in correlation with clinical and electrophysiological findings.

Key words: Carpal tunnel syndrome, MRI, the morphology of median nerve, nerve conduction studies.

P-87

Anatomical variations of superior rectus muscle

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Variations of superior rectus muscle (RS) have been considered as an etiological reason for congenital strabismus. Most strabismus cases are encountered just after birth. Studies in the literature have shown that anomalies of RS which would lead to strabismus were mostly constituted in the intrauterine period. 11 female and 6 male fetuses with no major anomaly were studied in the present study. Their gestational ages were 26 to 38 weeks. 3 variations of RS were observed in 8.82% of 34 eye bulbs of 17 fetuses. Variation 1: RS was beginning as two separate parts from annulus of Zinn. Although these two parts were separate superficially, they were continuing with each other in deeper sections. The superficial separation was terminating in the mid length of the muscle. Variation 2: the muscle was commencing as three separate parts from annulus of Zinn. In deeper sections, proximal 1/3 of levator palpebra superioris muscle (LPS) was found between the medial and intermediate parts of RS. 12mm after the origin, LPS was found to be superficial to RS. The lateral and intermediate parts were separate superficially but continuous with each other deeply. The origin of the medial part was completely separate. Variation 3: a muscular mass of 1 mm width and 6.75 mm length was arising from the beginning of RS and attaching to inferior rectus (RI) muscle. Possible embryological reasons and clinical effects of the detected variations were discussed.

Key words: M. superior rectus muscle, variation, strabismus.

P-88

Bilateral ectopic submandibular salivary glands: case report

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During the neck dissection of a 86 years old male cadaver, ectopic salivary glands were encountered bilaterally on the submandibular region. These glands which had anterior, posterior and superior surfaces were symmetrical, capsulated and lied deep to the superficial lamina of the superficial cervical fascia.

The length and width of the left and right gland were 44.2 mm and 42.4 mm, and 31.6 mm and 38.8 mm respectively. Both glands had an extension from the antero-superior edge which coursed deeply. Both glands were superficially located in the submandibular and carotid triangles. Deep to the glands was the posterior belly of the digastric muscle. Branches from the facial artery supplied these glands and a sulcus was formed on the superior surface of both glands by the facial artery. The submandibular glands were smaller than normal and lied in their usual region. Sublingual glands were in their normal anatomic position. Innervation of the right ectopic gland was from the lingual nerve directly and from the branches departed from the right submandibular gland. However, the left ectopic gland was innervated only by the branches departed from the left submandibular gland. Both ectopic glands had a duct which emerged from the deep superior surface of the gland and coursed deep, up and medially and united with the Wharton canal and ended on the sublingual caruncula. Histopathologic examination of the glands revealed seromucous (mainly serous) type. Such an ectopic and capsulated salivary gland was not reported in the literature. Up to date only heterotypic or ectopic tissue masses of salivary glands were reported. This case is discussed on the basis of its clinical, differential diagnosis and embryological significance.

Key words: Ectopia, salivary gland, variation.

P-89

The effects of rose oil on sperm concentration, sperm quality and serum testosterone levels of formaldehyde exposured rats

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In this experimental study, the effects of formaldehyde (FA) inhalation on sperm concentration, sperm quality and serum testosterone levels were investigated. In addition, the possible protective effects of rose oil against to these harmful effects was evaluated. For this aim, 21 albino-Wistar rats were used. The rats of group I was used as control group. The rats of group II were exposed FA (10 ppm/1hour) for 35 days. The rats of group III inhaleted rose oil (1 ml/1 hour) with FA. At the end of the experiment, when the epididymis tissues were taken for sperm analyzing, testosterone levels were determined from the blood samples taken from animals. While the testosterone levels, the epididymal sperm concentration and the progressive sperm motility were significantly decreased, the abnormal sperm rate was significantly increased in FA treated group when compared to control group. In the group in which the rose oil was applied with formaldehyde exposure it was determined that the testosterone levels and the epididymal sperm concentration were significantly increased, the abnormal sperm rate was significantly decreased when compared to FA treated group. The progressive sperm motility increased but not significantly. In conclusion, it can be expressed that serious damages occured via formaldehyde exposure in reproductive system and that the rose oil had protective effects against these damages.

Key words: Formaldehyde, epididymis, rose oil, testosterone, rat.

P-90

The histologically evaluation of the testes which applied formaldehyde and lavender oil

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In our study, harmful effects of formaldehyde (FA) inhalation on the testes were investigated histologically. In addition, the possible protective effects of lavender oil which often used in aromatherapy, were examined against these damages. For this purpose, 21 albino-Wistar rats were used. The rats of group I was used as control group. The rats of group II were exposed FA (10 ppm/1hour) for 35 days. The rats of group III inhaleted lavender oil (1 ml/1 hour) with FA. At the end of the experiment, all rats were sacrified and testes were removed for histological examination. In this examination, the diameters of seminiferous tubul, leydig cells and leydig cells with damaged nucleus were determined. When the rats were exposed to formaldehyde compared with the control group, it was determined that the diameter of tubuls and number of leydig cells were decreased and leydig cells with damaged nucleus were increased. And also it was seen that there were atrophic changes in the tubuls. In the group in which the lavender oil was applied with formaldehyde exposure it was determined that the histological changes of testes occured via FA exposure were improved. In conclusion, it was shown that harmful effects of FA on testes occured via formaldehyde exposure and lavender oil have protective effects to the these damages.

Key words: Formaldehyde, lavender oil, testes, histology, rat.

P-91

A case of unilateral multiple vascular and nerve variation on the neck

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The variations of the vessel and nerve were detected in the left neck side of 65 years old male cadaver during the routine dissections. It was observed that the linguofacial trunk was originating from external carotid artery and that the ascending pharyngeal artery was originating from the occipital artery 9.7 mm above the carotid bifurcatio. It was determined that after the laryngeopharyngeales rami originated from the superior cevical ganglion, the branch winded around the origin of the superior thyroid artery. As an additional variation, the internal juguler vein divided into 28.6 mm above the clavicle. The cervical ansa and the inferior venter of the omohyoid muscle passed through the parts of the vein. We think that these kind of variations can entail important difficulties during radyologic and surgical procedures of the neck region and it is beneficial for the surgeons to know these variations.

Key words: External carotid artery, internal juguler vein, branch, variation.

P-92

A case of unilateral sternocleidomastoid and anterior scalene muscles variation

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The variations of the sternocleidomastoid and the anterior scalenus muscles were determined unilaterally in a 70-year-old male cadaver during the routine dissections. In the left neck side, it was observed that the sternocleidomastoid muscle had also a third portion in addition to known sternal and two clavicular heads. At the same time the anterior scalenus muscle attached to the clavicle instead of the first rib. To the half of the proximal part of the clavicle, beginning from extremitas sternalis the second part of SCM in 12.3 mm width, third part of SCM in 12.6 mm width and scalenus anterior muscle in 16.5 mm width were attached. An awareness of this variations may be important because of its close relationship with neurovascular structures during neck operations and the function of the anterior scalenus muscle may be influenced during the force inspiration.

Key words: Sternocleidomastoid muscle, anterior scalenus muscle, variation.

P-93

The changes in the levels of trace elements MK-801 induced neurotoxicity in cortex

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The aim of this study is to determine brain Cu, Zn, Mn, Fe, Ca, Mg, Na, K levels in MK-801-induced experimental psychosis model. It is known that repeated injection of MK-801 was proposed in an animal model in psychosis. In this study, fourteen Wistar Albino rats were divided into two groups. 1st group: Control, 2nd group:MK-801. MK-801 was given intraperitoneally at the dose of 0.5 mg/kg/day for 5 days. In control group, saline was given intraperitoneally at the same time. Rats were killed by decapitation. Parietal cortex of rats were removed. Brain tissue Cu, Zn, Mn, Fe, Ca, Mg, Na, K levels have been measured with atomic absorbtion spectrophotometry method. Cu, Zn, Mn, Fe, Ca, Mg, Na, K levels in MK-801 group were lower than controls. The results of this study determined that MK-801 induced neurotoxicity caused to decrease in the levels of trace elements in brain of rats.

Key words: MK-801, neurotoxicity, trace element, rat.

P-94

Development of the nose during the fetal period

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Objective: The aim of this study was to investigate the morphometric development and localization of the nose during the fetal period.

Methods: This study is carried out on 211 (male: 100, female: 111) human fetuses with no cranofacial or any other external

anomaly and aged between 8-40 weeks of gestation. In this study, vertical and transvers morphometric parameters of fetal nose, face and head were measured. The relation between morphometric parameters, age and sexes were investigated statistically.

Results: The means and standard deviations of the nasal, facial and cranial morphometric parameters according to gestational weeks, months and trimesters were determined. All parameters were increasing with age during fetal period and no significant differences were observed between sexes ($p>0.05$). Also, there was significant correlation between nasal and craniofacial vertical and transvers morphometric parameters ($p=0.001$). There was significant differences between trimester groups in all parameters ($p<0.05$).

Conclusion: In this study, nasal development and the relation between nasal and craniofacial development are presented. We hope that data acquired in this study will facilitate other studies on diagnoses and treatments of fetal anomaly, pathology and variations of the nose.

Key words: Nose development, fetal period, morphometry, human fetus.

P-95

Anti-apoptotic actions of Omega-3 fatty acids on testes in experimental formaldehyde intoxication: an immunohistochemical study

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Objective: In this study, which we have performed immunohistochemically, it was aimed to investigate effects of formaldehyde toxicity on the testes, especially on apoptotic changes. Potential antioxidant effects of omega-3 fatty acids against these toxic effects were also evaluated.

Methods: A total of 21 adult male Wistar- albino rats used in our study were divided into three equal groups. Rats in group I were used as control. Rats in group II were injected intraperitoneally with formaldehyde every other day while the other ones received omega-3 fatty acids daily via intragastric gavage (Marincap capsule®) with injections of formaldehyde. At the end of two-week experimental period, all animals were killed by decapitation and their testes were removed. For light microscopic examination, tissue specimens were embedded in paraffin blocks following routine histological procedures. Section obtained from paraffin blocks stained with Bax protein immunohistochemically for the determination of apoptosis. The intensity of immunohistochemical Bax stain within cell cytoplasm was scored semi-quantitatively.

Results: it was found an intensive immunohistochemical Bax staining in tissue specimens of formaldehyde-exposed rats, while no staining was seen in tissue sections of control testes. On the other hand, immunohistochemical Bax staining was observed minimally in tissue sections of testes of rats administered with formaldehyde plus omega-3 fatty acids.

Conclusion: According to results of this study performed immunohistochemically, omega-3 fatty acids prevent apoptosis caused by formaldehyde in the testes.

Key words: Omega-3 fatty acids, formaldehyde, testis, apoptosis, immunohistochemistry.

P-96

Hippocampal oxidative damage due to formaldehyde neurotoxicity and protective effect of melatonin hormone: an experimental study

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Objective: In this study, neurotoxicity of formaldehyde on hippocampus and protective effects of melatonin hormone against these toxic effects were investigated.

Methods: Twenty one adult male Wistar-Albino rats were divided into three equal groups. Rats in group I were used as control. Rats in group II were injected with formaldehyde every other day. Rats in group III were received melatonin daily with administration of formaldehyde. At the end of two-week experimental period, all rats were killed by decapitation. Then the brain tissues of rats were removed. Superoxide dismutase (SOD), glutathione peroxidase (GSH-Px) enzyme activities and malondialdehyde (MDA) levels were determined in the hippocampus specimens by using spectrophotometric methods. The hippocampal tissue activities of SOD and GSH-

Px were significantly decreased in formaldehyde-exposed rats compared to controls, while MDA contents were significantly increased. It was observed an increase in activities of SOD and GSH-Px enzymes and a decrease of MDA levels in animals treated with formaldehyde plus melatonin. In this experimental study, it was determined that exposure of formaldehyde caused oxidative damage in hippocampus and this damage was suppressed by administration of melatonin.

Key words: Formaldehyde, melatonin, hippocampus, neurotoxicity, oxidative damage.

P-97

The clinical importance of the superior and inferior medial palpebral arteries: an anatomic study

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Objective: The aim of the study was to investigate diameters and connections of the superior and inferior medial palpebral arteries.

Methods: Twelve formalin-preserved adult male and five female cadavers were used in the study. The cadavers preliminarily underwent pink latex solution injection. The superior medial palpebral and inferior medial palpebral arteries were dissected by performing tangential dissection of the skin, subcutaneous fat, fascia, and muscular layers. Connections and diameter of these arteries at their origin were evaluated and Student's t-test was performed for stastistical analysis.

Results: The superior and inferior medial palpebral arteries contributed to form the marginal arcades in each eyelid. The average diameter of superior and inferior medial palpebral artery was 0.9 mm (range, 0.6-1.2) and 1.0 mm (range, 0.7-1.4), respectively. No difference was detected between the right and left sides' parameters by Student's t-test analysis ($p>0.05$).

Conclusion: The periorbital vascular anatomical details are very important for surgical cosmetic and functional results. Such a rich anastomosis and vascular supply in periorbital region enables the surgeons with a wide range of regional surgical options with quite reduced morbidity decreasing the risk of infection, hematoma, and necrosis. The surgeons should have awareness of the location, course, anastomoses, variations, and diameter of the regional arteries in reconstruction of defects in the periorbital area.

Key words: Medial palpebral artery, anatomy, anastomosis.

P-98

The effects of maternal low protein and estrogen on sexual behavior and testicular maturation in male rats

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In recent years, disorders related to the development and function of the male reproductive tract has increased, thus generating a surprising decrease in semen volume and sperm count. We examined the effects of low protein and estrogen on sexual behavior and testicular maturation in male rats. We also examined FSH, LH and testosterone levels and histological damage of testis tissue. The male rats were subjected to standard long-term treatment with estradiol by oral and paranteral delivery. The following measures were recorded or calculated: ejaculatory latency, the number of mounts without intromission prior to ejaculation; copulatory efficiency, and a measure of intermissive success (calculated as percentage of mounts in which the male gained vaginal insertion). The number of mounts, copulatory efficiency and ejaculation latencies for the paranteral protein diet (PPD) group was significantly lower than those in a group nourished with a low protein diet (LPD) and oral protein diet (OPD) groups ($p<0.05$). The mean values of body weight, testis weight, and testosterone level (378±34, 10.5±1.90, 0.592±0.22 respectively) in the PPD group were found to be lower than those in the OPD group (380±31, 14.7±3.50, 1.436±0.30 respectively). However, we observed that OPD was not affected by body weight, testis weight or testosterone level according to the PPD group. Testes and epididymis sections were examined by four grades, according to the level of damage of epithelium in the testes and epididymis. Higher histological damage was also detected in the PPD group. In conclusion, the present study confirmed that unwanted estrogen effects were higher in the paranteral administered group on examination of sexual behavior and histological damage of epithelium in the testes and epididymis of male rats.

Key words: Estrogen, low protein diet, seksuel behavior, histological damage.

P-99

Myocardial ischemia caused by an uncommon coronary artey anomaly: a single coronary artery anomaly without atherosclerosis

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The heart itself is supplied with blood delivered by the two coronary arteries and their branches. The right coronary artery takes its origin from the aorta just distal to the aortic valve and appears on the surface of the heart between the pulmonary trunk and the auricle of the right atrium. The right coronary artery is distributed to the right atrium, right ventricle, and variable portions of the left atrium and left ventricle. The left coronary artery also arises from ascending portion of the aorta. It is at first located between the pulmonary trunk and auricle of the left atrium. Thus, the left coronary artery supplies ventricles, the interventricular septum and the left atrium. The incidence of coronary artery anomalies is reported less than 1% of adult population according to the literature. A single coronary artery is a rare congenital anomaly with an incidence of 0.02-0.04%. We present two cases of an anomalous left coronary artery that arises from the right sinus of Valsalva. A 56 year-old male patient has applied to the hospital with complaints of chest pain and positive myocardial syntigraphic results. Coronary angiography showed that the left coronary artery arose from the right coronary ostium. Also the second patient, a 57 year-old male has applied to the hospital for chest pain and positive treadmill test. Similarly, coronary angiography showed that the left coronary artery arose from the right coronary ostium.

Key words: Coronary artery anomaly, myocardial ischemia, single coronary artery

P-100

Evaluation of fetal measurements during pregnancy

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The aim of this study is to evaluate fetal parameters obtained from ultrasonography (USG) due to pregnancy weeks of the women who applied for routine pregnancy follow up and to determine whether there are differences between fetal parameters [head circumference (HC), biparietal diameter (BPD), femur length (FL), abdominal circumference (AC) and humerus length (HL)] before and after 21st week according to last menstrual period (LMP) or not. Maternal and fetal parameters were obtained from healthy 44 pregnant women aged from 17 to 45 years and their fetuses (24 male and 20 female) with the fetal age of 16 to 30 weeks. Fetal ages and weights were obtained by measuring fetal ultrasonographic paramethers (AC, HC, BPD, FL, HL) Gravity, parity, abortus, alive children, fetal ultrasonographic parameters, gestational age due to LMP, amnion fluid, presentation, number of fetuses, mother's vitamin usage history were asked. Mean maternal age was 28.8±6.7 years, their mean gravity was 4.0±2.6, mean parity was 2.5±2.4, mean abortus was 0.8±1.1 and mean alive children number was 2.2±2.1. We found statistical meaningful results between gravity and parity, gravity and alive children, and parity and alive children (p=0.0001). There were not any meaningful differences between the pregnancy weeks obtained from USG and LMP before and after 21st week (p>0.05). The presentation of the fetus, maternal vitamin usage history and pregnancies before or after 21st week were not relevant with the gender of the fetus. In our study, Different ultrasonographic measurements of the fetuses those before or after 21st week were not statistically different.

Key words: Fetal USG, fetal parameters, pregnancy follow up.

P-101

A study on the reflex mother rats for saving their babies

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There are various studies reported for animal behaviors on subjects such as couple selection for copulation, saving from wild birds, perception limits without escape response from danger and economic decision, decisiveness for fight. There is no study on mother rats for rescuing their babies from a dangerous situation. We studied the instinctive behavior of 17

mother rats for rescuing their babies. Each baby group of mother rat was numbered as a separate group. 17 groups were composed of 4 groups with 3 babies, 3 groups with 4 babies, 3 groups with 5 babies, 2 groups were with 6 babies, 2 groups with 7 babies and 2 groups were with 9 babies, 1 group was with 10 babies. Mother rats and babies were studied separately as they were kept in their fences silently. A disturption of silence and peace was started by knocking their fences in order to check their behaviors. Mother rats sensing the danger and they were found to rescue one of the babies to a place away from the danger either directly or after checking the weight of some others. We weighted all babies including the rescued baby rat. In all the 14 groups except 3 mother rats were found to have rescued the heaviest baby. We predicted that the sex difference was not a point in selection and the weight difference was neglected for following rescues after the first.

Key words: Rat, saving reflex, animal behaviour.

P-102

Morphometric analysis of cranium in relation to age and gender

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The aim of this study was to determine the linear craniometric measurements and to evaluate their relation to gender and age. Cranial magnetic resonance images (MRI) of 116 subjects (77 women, 39 men) aged between 20 and 84 were reviewed. Any subject with expansive intracranial process (tumor, subacute ischemia, hemorrhage, etc.) was excluded from the study. Eight landmarks (glabella, bregma, vertex, lambda, opisthocranion, inion, opisthion, basion) were individualized for each examination. Six distances between these eight landmarks were measured using DicomWorks v1.3.5 software (vertex-basion=VB; glabella-inion=GI; glabella-opisthocranion=GO; basion-opisthion=BO; bregma-basion=BrB; and glabella-lambda=GL). Ratios of linear measurements were also calculated. Independent samples test was used to compare the linear measurements and ratios between genders. Pearson correlation analysis was used to evaluate the relationship between age and linear measurements or ratios. Our findings showed that all the linear measurements of the men determined by eight landmarks were significantly than those of women ($p<0.05$). A significant negative correlation was detected between age and BO distance in women ($r=-0.329$, $p<0.05$). Moreover, significant negative correlations were detected between age and the BO-VB, BO- BB, BO-GI, and BO-GL ratios in women ($r=-0.286$, $r=-0.289$, $r=-0.258$, $r=-0.287$, $p<0.05$ respectively). Positive correlation was detected between age and VB-BO and BB-BO ratios in women ($r=0.301$ and $r=0.307$, $p<0.05$ respectively). There were no significant correlations between age and any of these measurements and ratios in men ($p>0.05$). These results may be useful for evaluating age-related morphological changes that occur in cranium of men and women.

Key words: Craniometry, MRI, cranium, age, gender.

P-103

Development of the pancreas during the fetal period

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Objective: The aim of this study was, to investigate the localization and morphometric development of the pancreas during the fetal period.

Methods: This study is carried out on 222 (male=114, female=108) human fetuses with no external anomaly and pathology and aged between 9-40 weeks of gestation. The fetuses were divided into subgroups according to gestational weeks, months and trimesters. Abdominal dissection was made after the general external measurements of fetuses. The localizations of the pancreas and its relation with the neighboring structures, during the fetal period were established. Morphometric data of pancreas (the length and the height of pancreas) were obtained.

Results: Localization of the pancreas during fetal period and means and standard deviations of the all parameters with respect to gestational weeks, months and trimesters were determined. There was significant correlation between gestational

age and all parameters (p=0.001). No significant differences were observed between sexes for any of the parameters (p>0.05). All results obtained in our study were compared with the previous studies and discussed.

Conclusion: Results of our study would contribute to evaluate the development and localization of pancreas and to the studies which will be conducted in other medical sciences such as obstetrics, perinatalogy, forensic medicine and fetopathology to find out anomalies, pathologies and variations regarding pancreas in the future.

Key words: Pancreas, morphometry, developmental anatomy, fetal period, human fetus.

P-104

Morphometric evaluation of proximal femur in patients with total hip arthroplasty

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Objective: Morphometric features of proximal femur widely research and investigation to people database standardization discrepancy for risk factors, preoperative treatment and prosthesis component design is important. In our study aimed morphometric featured of proximal femur in with unilateral total hip arthroplasty patients at healthy side was measured.

Method: In our study included 148 unilateral with total hip arthroplasty who patients (105 female and 43 male) pelvic radiographs. In radiographic measurements femoral head diameter (FHD), femoral neck width (FNW), femoral neck length (FNL) femoral neck axis length (FNAL), intertrochanteric line width (ITW) and neck-shaft angle (NSA), were measured on computer with digital measure program.

Results: In pelvic radiographs followings FHD, FNW, FNL, FNAL, ITW and NSA were measured as 48.0±4.0 mm, 35.0±4.0 mm, 31.0±6.0 mm, 99.0±10.0 mm, 81.0±8.0 mm, 130.0±5.2°, respectively. Between gender expect IA other parameters different as statistical is significant (p<0.0001). In correlation test between age and parameters is not significant (r=0.20, p>0.05).

Conclusion: We think in radiographic images our results femoral arthroplasty component and its design selection our people asserts as database is beneficial.

Key words: Proximal femur, radiology, arthroplasty.

P-105

Origin variations of wich blood supplied proximal femur medial and lateral circumflex femoral artery

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Objective: Variational state of medial and lateral circumflex femoral arteries (MFCA and LFCA) are known that will make surgical attempt this area decreasing for complication risk is important. Our study was being investigation variational state of MFCA and LFCA prevention at this area vasculary damages our results contribution.

Method: In our study at University of Dokuz Eylül, Faculty of Medicine, Department of Anatomy for which education and research bilateral hip joint of 10 adult male cadavers were employed. At morphological evaluation origin variations of MFCA and LFCA was investigation.

Results: LFCA at 7 joints from femoral artery (FA) (35%) (5 right, 2 left), at 13 joints from deep femoral artery (DFA) (65%) (5 right, 8 left); MFCA at 7 joints from femoral artery (FA) (35%) (4 right, 3 left), at 13 joints from deep femoral artery (DFA) (65%) (6 right, 7 left) originated.

Conclusion: We think about in except hip prosthesis surgery for prevention to damage of LFCA and MFCA in our study variation results to consider is beneficial.

Key words: Proximal femur, variation, circumflex femoral arteries.

P-106

Morphologic and morphometric evaluation of wich blood supplied to proximal femur medial and lateral circumflex femoral arteries

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Objective: We aimed in this study morphologic and morphometric properties of proximal femur how to discrepancies and effect to results in connection with proximal femur built morphometric studies as measured to vascular parameters.

Method: In our study included bilateral hip joint of 10 adult male cadavers In cadavers either hip joint diameter of femoral artery (FA) and relationship to femoral nerve, deep femoral

artery (DFA), lateral circumflex femoral artery (LCFA) and medial circumflex femoral artery (MCFA) origins, diameters, courses and distances to midpoint of inguinal ligament were measured with a sliding calipers.

Results: In cadavers as following diameter of FA, DFA, LCFA and MCFA were measured 8.4±1.7 mm, 5.8±1.3 mm, 4.3±1.1 mm, 3.3±0.7 mm, respectively. As following distance from midpoint inguinal ligament DFA, LCFA and MCFA were measured 40±11.9 mm, 53.7±13.3 mm, 40.1±16.8 mm. LCFA and MCFA distance from DFA were measured as 16.1±9.8 and 11.1±7.9 mm. As joint branch from main branch separated of MFCA and LFCA diameter 2.0±0.5 mm were measured.

Conclusion: We think In our study morphometric and morphologic measurement results prevention damage to LFCA and MFCA to consider is beneficial.

Key words: Proximal femur, morphometry, circumflex femoral arteries

P-107

Age related morphologic and immunohistochemical changes in collagen fibril organisation in rat's tendo calcaneus

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In human body, Achilles tendon is the strongest but also most common ruptured ligament due to the age, over use, mechanical factors, systemic diseases and drugs. Over the years, several researchers have been investigated its biomechanical structure in rat and rabbit. In human, the structural changes of the ruptured ligament after repair operation has been investigated but the age related morphometric, immunohistochemical and ultrastructural changes in healthy rat remains unclear. In our study, we investigated the age related morphometric and immunohistochemical changes in rabbit and human Achille ligament. In the experimental protocol, thirthy Wistar Albino rats with their control groups were used and divided into 3 different age groups (young, 2-3 weeks old, adult -6-7 months-old and older than 1 year old) each for 10 animals. All the animals were anaesthetized by ketamine hydrochloride 30 mg/kg intramuscularly. For muscle relaxation, 2 xylazine hydrochloride 6 mg/kg was used. Both Achilles tendons were removed for morphological and immunohistological studies. Samples were then embedded in paraffin blocks for light microscopy and stained picrosirius. After routine light microscopic follow up, picrosirius and immunohistochemistry staining was performed for type I collagen, TGF- 946; and S-100 and sections were evaluated in photo light microscope. In picrosirius light microscopic investigation, we observed age-related structural changes. Dark red colored collagen fibrils showed decreased ondulation with round tenocyte nuclei and increased stromal component and capillaries. The decreased number of the tenocyte was statistically meaningful. The immunohistochemical evaluation showed increased reactivity for collagen type I, TGF946; S-100 and FGF-1 immunoreactivity was slightly stronger in adult group than other groups. We believe that the age-related degenerative changes starting in adult age could provoke lesions of the Achilles tendon due to the functional decrease of the flexibility of the ligament.

Key words: Tendo, collagen, immunohistochemistry, picrosirius.

P-108

Effects of methylphenidate on dopamine 2 receptor in rat pituitary gland

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Methylphenidate is the drug most often used as psycho stimulant to treat attention deficit hyperactivity disorder. This drug blocks dopamine transporter, thereby elevating extracellular dopamine levels. Dopamine is a neurotransmitter of the pituitary gland and plays an important role on its metabolic activity. Our aim was to determine dose-dependent changes of dopamine 2 receptor after methylphenidate administration in pituitary gland. In this study, 27 female Whistar albino rats, divided into three different dose groups (5, 10 and 20 mg/kg) and their control groups, were used. Prepubertal (35 days) rats were treated orally with methylphenidate dissolved in saline solution for 5 days per week during three months. At the end of the third month, after perfusion fixation, pituitary gland was removed. After routine light microscopic follow up, indirect immunohistochemical staining was performed for dopamine 2 receptor and sections were evaluated in photo light microscope. In the adenohypophysis of the control group; some cells

showed a weak immunoreactivity of the membrane, while another group of cells showed no reactivity at all. In the adenohypophysis of the low dose treated group results were similar to the control group. In the adenohypophysis of the curative dose treated group; cell membranes showed reactivity varying from moderate to strong while nuclei and cytoplasm displayed no reactivity. In the adenohypophysis of the high dose treated group; most cells showed a strong reactivity in the membrane while some others displayed reactivity in nuclei and cytoplasm. In conclusion, we believe that methylphenidate is dose-related activating dopaminergic expression and the increased number of dopamine 2 receptor might affect the metabolic activity of the pituitary gland.

Key words: Methylphenidate, pituitary gland, dose-dependent, D2 receptor.

P-109

A projection to postgraduate education in anatomy: a sample from Selçuk University

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Objective: Postgraduate education in anatomy is given by Ministry of Health via Medical Spezialiation Exam (TUS) and postgraduate sertifications (Master: MSc, Doctorate: PhD) of Institue of Medical Sciences. We aimed to define the capacity of Selcuk University Meram Medical Faculty in postgraduate education of anatomy since the organization.

Methods: In this study, the records of Meram Medical Faculty since the beginning years of TUS and postgraduate education were evaluated, retrospectively.

Results: Since 1985, 56 individuals via masterdoctorate, since 1992, 16 individuals via TUS began to educate in anatomy. The 71.11 (n=44) percent of them were women. Five of the postgraduate students (31.5%) who began via TUS completed their education and continued with an academic degree. The 47.6 percent of the master students (n=10) graduated from the Occupational High School of Physiotherapy and Rehabilitation. The 10 of master students (47.61%), nine of doctorate students (25.71%) completed the education program. While 54.28 percent (n=35) of the doctorate students were medical doctors, the 14.28 percent (n=5) were veterinaries.

Conclusion: In the recent eight years, individuals who applied to study in anatomy postgraduate programms were increased higher than twofold. Although there were no gender difference between postgraduate students of TUS who completed their education, there were gender difference in master program students in favor of woman and in doctorate students in favor of men. We think that, it is important to define postgraduate education profiles of all univercities for future planning of anatomy education in Turkey.

Key words: Anatomy, postgraduate education, MSc, PhD.

P-110

Radiological and anatomical examination of the cavernous sinus

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Injuries of the cavernous sinus may occur during the resection of tumors of the hypophysis. Therefore, we dissected in cadavers and examined with the magnetic resonance imaging in volunteers this region. Fifty patients were chosen for the magnetic resonance imaging and 10 fetal and 5 adult cadavers were used for anatomical study. Shape of the cavernous sinus, numbers and courses of the nerves in its lateral wall, the locations of internal carotid artery and the abducent nerve within the sinus and the trabeculated venous space within the sinus were investigated. The trigeminal ganglion in the Meckel's cave was examined during the magnetic resonance imaging. Shapes and locations of the intercavernous sinuses were examined during dissection. Asymmetric cavernous sinuses and the abducent nerve locating different points around internal carotid artery were found during the magnetic resonance imaging. Course differences of the cranial nerves in the lateral wall of the sinus were identified. Shape and size of the trigeminal ganglion shown side-related differences. Limits of cavernous sinus of dissected fetal and adult cadavers were identified. The cranial nerves in its lateral wall showed course and diameter differences. Although the trabeculated venous space within the sinus was densely observed in adult, not observed in fetus. Knowledge of anatomy in the important structures presenting in the middle cranial fossa will provide a great benefit in minimizing the rate of complications which may occur during the resection of tumors of the cavernous sinus and the hypophysis.

Key words: Cavernous sinus, oculomotor nerve, trochlear nerve, ophtalmic nerve, maxillar nerve, Meckel's cave.

P-111

Localization and types of pterion for surgical approaches

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The pterion is defined as the junction of frontal, parietal and greater wing of the sphenoid and squamous part of temporal bones. Pterional approach is a method commonly used by surgeons in brain tumors and aneurysm. In this study, location and type of the pterion in West Anatolian People was conducted on 128 cranium (256 sides). The distances on the right and left sides respectively from the center of the pterion to the zygomatic arch were 40.02±4.06 mm and 39.88±4.01 mm, to the frontozygomatic suture 31.80±4.51 mm and 31.44±4.73 mm, to the zygomatic angle 41.54±4.95 mm and 41.35±5.14 mm, to the mastoid process 82.48±5.45 mm and 81.81±5.50 mm, to the upper border of meatus acusticus externus 53.29±4.55 mm and 56.22±4.60 mm. In skulls with an epipteric bone variation, the distance between the most anterior junction of pterion and the nearest lateral border of the orbit was 31.02±5.78 mm and 32.31±5.79 mm in right and left sides, respectively. When the morphologic features of pterion were taken into consideration, we observed that 218 (85.2%) were sphenoparietal type, 21 (8.2%) were epipteric type, 14 (5.5%) were stellat type and 3 (1.1%) were frontotemporal type, in all sides. In conclusion, we thought that the knowledge of the morphometric and morphologic features of pterion is useful for regional surgery.

Key words: Pterion, pterional approaches, morphometry, morphology.

P-112

Morphometry and morphology of supraorbital foramen

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Objective of this study is to determine the incidence of supraorbital foramen (SOF) on skulls and the distances between this foramen and anatomic landmarks. This study was conducted on 100 cranium. Foramens and notches on supraorbital margin are counted and in the cases which had more than one foramen or notch, foramens or notches were named according to their existence on either medial or lateral side of supraorbital margin. The distances between the SOF and nasion, zygomaticofrontal suture and the superior margin were measured. The average distances between the SOF and nasion, zygomaticofrontal suture and the superior margin on the right and left sides were found as 25.58±4.40 mm and 26.73±4.47 mm; 29.02±4.34 mm and 27.55±3.51 mm; 2.56±1.59 mm and 3.15±2.01 mm, respectively. The distances between the SOF-nasion and SOF-zygomaticofrontal suture showed significant difference between two sides. SOF, supraorbital notch, frontal foramen and frontal notch were found 27.7% and 24.8%; 66.3% and 67.3%; 5.0% and 2.0%; 8.9% and 11.0% on the left and right sides, respectively. The incidence of unilateral supraorbital notch and supraorbital foramen on the other side was found as 20%. There were no foramen or notch on 3 of skulls. The localization of supraorbital and frontal foramen (notch) is important in maxillofacial and orbital surgery. It is necessary to know this anatomic area for avoiding to damage supraorbital vessels and nerve.

Key words: Supraorbital foramen, frontal foramen, morphology, morphometry.

P-113

The localization and morphometry of mandibular foramen

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Mandibular foramen is located just posterior to the middle of the ramus of mandible which transmits the inferior alveolar nerve and vessels. Objective of this study is to determine the localization and morphometric measurements of mandibular foramen. This study was conducted on 102 dry mandibles. Six morphometric measurements were taken from mandibular foramen. The distances between mandibular foramen and head of mandible, posterior margin of ramus of mandible, anterior margin of ramus of mandible, inferior margin of mandibular body, the deepest point of mandibular notch and the most prominent point of mandibular angle were measured and the average distances were 41.73±3.97 mm; 14.32±2.09 mm; 12.86±2.46 mm; 29.51±3.93 mm; 23.65±3.38 mm; 22.80±4.32 mm on the right side and 41.36±4.37 mm; 14.59±2.13 mm; 12.77±1.90 mm; 26.39±4.05 mm; 24.18±3.02 mm; 22.18±3.90 mm on the left side, respectively. The average distance of

mandibular foramen-the deepest point of mandibular notch and mandibular foramen-the most prominent point of mandibular angle on the left and right side were showed significant difference. The localization of mandibular foramen is important in mandibular anesthesia, oral procedures, restoration of dentofacial deformities and maxillofacial surgery. It is necessary to know this anatomic area for avoiding to damage mandibular nerve. In this study, we determined the localization and morphometry of mandibular foramen. This information may be helpful for maxillofacial surgery and dentistry.

Key words: Mandibular foramen, morphometry, mandibular anesthesia.

P-114

The effect of methylphenidate on FSH receptor level in rat ovary and tubae uterinae

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Methylphenidate hydrochloride (Ritalin) is a dose dependent physiological agent that stimulates the motor activity and used for the therapy of attention deficithyperactivity disorder. Some researchers demonstrated that chronic use of MPH during adolescence adversely affects the maturation and functionality of the female reproductive axis. Our aim was to determine dose-dependent changes of FSH receptor in rat ovary and tubae uterinae, which is very important hormone for the follicular maturation and ovulation. In this study, 27 female Whistar albino rats, divided into three different dose groups (5, 10 and 20 mg/kg) and their control groups were used. Prepubertal rats (35 days) were treated orally with methylphenidate dissolved in saline solution for 5 days per week during three months. At the end of the third month, after perfusion fixation, ovaries and tubae uterinae were removed. After routine light microscopic follow up, indirect immunohistochemical staining was performed for anti-rabbit FSH-R with the use of DAB as chromogen and Mayer's haematoxylin for counterstaining and sections were evaluated in photo light microscope. In the control group; FSH-R activity was observed in ovarian follicles and in the epithelial cells of the tubae uterinae. In the methylphenidate-treated groups; atresic changes in ovarian follicles and apoptotic bodies in tubae uterinae epithelium were observed dose-dependently. FSH-R activity was dose-related decreased in follicle cells and in tubae uterinae epithelium. In conclusion, we believe that adverse affects caused by methylphenidate on female reproductive system may be related to the cellular degeneration on ovaries and tubae uterinae and to the decrease

Key words: Methylphenidate, ovary, tubae uterinae, dose-dependent, FSH-R.

P-115

Analysis of the effects of Aloe Barbadensis and soybean oil on liver

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Objective: Aloe Barbadensis, which is a species of Aloe vera, is a popular plant used by the common people and in alternative medicine. This plant is known to have anti- inflammatory, anti-ulcer, anti-neoplastic, anti-viral, anti-genotoxic and chemopreventive effects. This study aimed to analyze the effects of Aloe Barbadensis and soybean oil on liver.

Method: Eighteen Wistar Albino female rats were used. After the rats were divided into 3 equal groups, the first group was taken as the control group. The dissolved form of Aloe Barbadensis in the soybean oil was applied to the second group (25 mg/day), while only soybean oil was applied to the third group (500 mg/day). Rats are taken from each group at 21. day and deeply anaesthetized with sodium thiopenthal and then abdomen is opened with perfusion of 10% formaldehyde. Biopsy materials were taken from the lobus dexter of the livers of the rats and they were analyzed with light microscope after the necessary histological follow-up was performed.

Results: Group I demonstrated normal structural characteristics of rat liver. In Group II and Group III, we observed nuclear enlargement, mild increase in chromatin and hydropic degeneration and binucleation in some hepatocytes. Liver histology demonstrated congestion in portal veins, sinusoids and the central veins. Merely in Group III, portal venous congestion and in Group II sinusoidal congestion was evident parenchyma of the liver. Additionally in Group III liver histology demonstrated plasmocyte infiltration in portal areas.

Conclusion: Our study showed that using soybean with Aloe Vera is synergystic and increasing each other effects. Mononeuclear infiltration in Group III prove inflammatory reaction. However we didn't observe mononeuclear infiltration

in Group II and as in literature this show antiinflammatory effects of Aloe Vera. Also we determined that in appropriate doses neither soybean oil nor Aloe Vera has toxic effects in hepatocytes.

Key words: Aloe Barbadensis, soybean, effect, liver.

P-116

Connection types between the spinal root of accessory nerve and the posterior roots of the C2-C6

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The connection type between the accessory nerve and the posterior roots of the C2-C6 and their frequencies were demonstrated in the cranial cervical regions of 49 specimens from 27 human cadavers (25 male and 2 female) under a dissection microscope in this study. Five different connection types between the accessory nerve and the posterior roots were recorded (types A-F) and one of these types was not described previously in literature (type F). All connections between the posterior roots of the C2-C6 and the accessory nerve were at the level of C2 segment. Type B was the most frequently seen type in our series (29). The posterior root joined the accessory nerve without a connection to spinal cord in type B. The bridging fiber was medial to the accessory nerve and below the posterior root in type F (2). We believe that our results with some differences from the previous studies will be helpful for head and neck surgeons during the planning neck dissection.

Key words: Accessory nerve, posterior root of the cervical nerve, trapezius, shoulder syndrome.

P-117

The proximal ulna anatomy with respect to olecranon osteotomy and fracture fixation

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Complex fractures of the olecranon have always been a difficult condition to treat and present a surgical challenge. Successful reconstruction of posttraumatic elbow instability depends on restoration of the anatomic contributors to stability. The purpose of this study was to define the proximal ulna anatomy with respect to olecranon osteotomy and fracture fixation. An anatomic study of normal ulnas was carried out to calculate a clinically relevant of olecranon length that could be applied reliably by the operating surgeon to guide the maintenance of articular geometry during the fixation of comminuted olecranon fractures. In 80 normal adult ulnas; olecranon height (OH), olecranon width (OW) trochlea height (TH), trochlear notch width (TW), trochlear width distance (TWD) parameters were studied. Four mean ratios were then derived: TWD/TW, OH/OW, TH/ TW and OH/TW. Tension band wiring by using 2 Kirschner wires and a cerclage wire is a recognized standard treatment for olecranon fractures. We also studied the ideal anatomic zones located at the olecranon for placing the Kirschner wires. Our findings will guide the surgeon to obtain a more reliable length of the olecranon and will be helpful to offer a safe place for Kirschner wire replacement concerning humero-ulnar joint functionality.

Key words: Olecranon, anatomy, osteotomy, fracture.

P-118

Solitary osteochondroma: observations on four cases with different sites of appearance

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Solitary osteochondroma, or osteocartilaginous exostosis, is a hyperplastic/dysplastic bone disturbance originating from displaced or aberrant cartilage of the growth plate. A collection of interesting four cases of osteochondroma were presented in this study. The different sites of appearance of the osteochondroma, which are clinically important to remember, were also evaluated. The ages of patients varied between 17 and 38 years. Three of the cases were women; and one was a man. The patients had applied with different clinical symptoms, including pain, stiffness, swelling and cosmetic disturbance. Conventional X-ray studies were performed to visualize the

lesions. Radiological diagnoses were made according to the protruding appearances of the bony lesions, which were in continuation of the host bones. The osteochondromatous lesions were situated in different sites of the body, including the distal femur, fibula and fifth lumbar vertebra. The patients were operated; and the post-operative pathological tissue analyses verified the radiologic diagnosis. This study confirmed that the common sites of the osteochondroma are the long- bone metaphyses, but it may be encountered in any bone developed by enchondral calcification.

Key words: Solitary osteochondroma; exostosis; bone growth; bone neoplasm, radiography.

P-119

The effect of vertebral body and intervertebral disc shape on the lumbar curvature angle

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The aim of this study was to quantify the morphology or shape of L4-L5 vertebral bodies and intervertebral discs, and to examine the association of lumbar curvature with these shape parameters. Vertebral and disc morphology (anterior, posterior and middle heights and intervertebral angles at L4/L5 and L5/S1 levels) were quantified on axial MRI plane. Lumbar curvature was measured by the Cobb's method. One hundred and twenty-three volunteers (51 male and 72 female) were participated to this investigation. The mean age was 32.9±6.3 years. Intraobserver reliability was high (intraclass correlation coefficient=99.5%). There were significant differences between males and females for the vertebral body heights at L4 and L5 level ($p<0.001$). The mean lumbar lordosis (Cobb angle) was 31.28±10.98. The intervertebral angle at L4/L5 was highly predictive of lumbar curvature ($r=0.456$ and $p<0.001$), while a poorer association was noted for posterior height of L4 and anterior height of L5 vertebra ($r=-0.267$ and $p<0.003$; $r=0.296$ and $p<0.001$, respectively). Since the L4-L5 and L5-S1 levels are most likely to be subjected to fusion procedures or arthroplasty and contribute to more than half of normal lumbar lordosis, it is crucial to identify a reproducible and accurate means of measuring segmental lordosis at these levels. This study provides data on the healthy lumbar spine, particularly the characteristics of intervertebral angle and their contribution to lumbar lordosis. Future directions for morphology studies should encompass more detailed examination of the lumbar segments at the other levels.

Key words: Lumbar vertebra, Cobb angle, lumbar lordosis, intervertebral disc.

P-120

Can sex be determined via "crista phallica angle"? Results of an anthropometric measurement by computed tomography with 64 detectors in virtual environment

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Objective: Crista phallica (CP), is the bilateral protuberance on the bone in the medial part of ischiopubic ramus. In this study, the independent availability of that structure which has taken place in anthropology and forensic medicine literature in recent years, from other criteria in the determination of gender was investigated.

Method: In the study, CP angle (CPA) in three-dimensional (3D) images of pelvic bone obtained via multidetector computed tomography (MDCT) was measured in-vivo. Healthy 66 male (41.56±14.86 age) and 43 female (41.14±14.15 age) subjects were examined with the method mentioned above. Via MDCT with 64 detectors, the volume images involving bony structures that form pelvis were obtained. CP was visualized from the mediolateral view of right pubic bone on the workstation in virtual environment and the angle formed by the blister was measured numerically. The differences in angle between females and males were detected statistically.

Results: CPA was determined as 110-180° (150.3±9.4) in Turkish population. A significant relationship between this parameter and age was not determined for both genders (in males $p=0.822$, in females $p=0.634$). This parameter was measured as 110-162o (146.3±8.6) in males, 140-180° (156.3±7.3) in

females. According to the distinctive analysis results, the accuracy of CPA on gender estimation was 80.3 in males and 76.7 in females (mean=78.9, p<0.0001). Based on the ROC curve coordinates, the sensitivity and specificity reached were 77% and 80% respectively via 151.5°, which is cut-off point used in the sex discrimination.

Conclusion: The accuracy rate obtained with CPA measurement is slightly higher than the isolated values given devoted to the other structures of pelvis. Virtual anthropometric method applied in this study, which is devoted to the research for the distribution of this parameter in the population analyzed, has become an alternative to the population studies that cannot be fulfilled owing to the limitation in the number of well-protected cadaver.

Key words: Human pelvis, hip bone, sex determination, computer assisted three dimensional imaging.

P-121

Sex determination in Turkish people via subpubic angle: anthropometric evaluation of living beings via computed tomography with 64 detectors in virtual environment

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Objectives: The determination and evaluation of the criteria that will be used for sex determination for various races is one of the main occupational areas of forensic anthropometry. In that context, pelvis is one of the most studied structure. In this study, the value of subpubic angle which is relatively easy to be evaluated and the availability of subpubic angle as an isolated value in gender determination were investigated in Turkish people.

Method: The study was conducted on 66 males (41.56±14.86 age) and 43 females (41.14±14.15 age) experimental subjects all of whom were healthy. Via multidetector CT with 64 detectors, the volume images involving bone structures that form pelvis were obtained. The images were examined by analysis station in the digital media and subpubic angle was measured based on the method defined by Reynold.

Results: Subpubic angle was identified as 49-104° (79.6±10.7) in Turkish people. A significant relationship between this parameter and age was not determined for both genders (in males p=0.623, in females p=0.160). This parameter was measured as 49-89° (73.6±7.4) in males, 66-104° (89.1±8.0) in females. According to the distinctive analysis results, the accuracy of subpubic angle on gender estimation was 89.4% in males and 90.7% in females (mean 89.9%). Based on the ROC curve coordinates, the sensitivity and specificity reached were 91% and 89% respectively via 81.5°, which is the cut-off point used in the sex discrimination.

Conclusion: Although subpubic angle is used as an isolated value, it has presented a value which is close to 96.5% accuracy rate being obtained via getting many parameters together that belong to pelvis in literature. Partially protected pelvis bones provide a quick and reliable determination of gender by making it possible to evaluate the subpubic angle even in the absence of many bones constructing the skeleton. This study is also one of the first models for the use of volumetric computed tomography in forensic anthropometric studies.

Key words: Human pelvis, hip bone, sex determination, computer assisted three dimensional imaging.

P-122

The relation of the lymph nodes and the retroperitoneal plexus

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Objective: The lumbar lymph nodes encircle the aorta abdominalis and the vena cava inferior. They are supplied with the arterial blood directly from the aorta and from its branches, but not very many further details are known. Small branches of the aorta abdominalis can form a communication with the mesenteric circulation as reported for the first time by Turner in 1863. As for venous drainage, the lumbar lymph nodes veins terminate directly in the vena cava inferior. Both vessels arrangement can have serious clinical consequences.

Method: India ink injections of the aorta abdominalis and the vena cava inferior in the extent of L1 to L5 were performed in 18 cadavers (autopsy specimens) via the arteria mesenterica superior, with ligated vasa renalia, vasa mesenterica superiora et inferiora and vasa iliaca communa. The injected vessels were

cut out with a wide band of the retroperitoneal tissue and fixed in 8% formaldehyde. Then they were dissected under the microscope.

Results: The injections showed branches from the arteriae renales, lumbales et ovaricae (or testiculares) which supply the retroperitoneal tissue, fat pad, lymph nodes and large vessels' covers, including their vasa vasorum. The veins from the retroperitoneal space, especially from the lymph nodes, drain directly into the vena cava inferior, especially in its lower third, above the arteria iliaca communis dextra. The plexus retroperitonealis (of Turner) forms a network or very fine arteries within the whole retroperitoneal space.

Conclusion: The study presents qualitative results describing the course and arrangement of the lumbar lymph nodes feeding arteries and emptying veins, which can help surgeons to better orientation in the retroperitoneal space.

Key words: Lumbar lymph nodes, retroperitonal plexus, plexus of Turner.

P-123

Histological and anatomical nomenclatures – History and presence

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The anatomical and histological nomenclatures are the oldest and the best processed ones in the medicine. Their development dates back to 1895, although the basics of the terminology were laid BC by the Greeks. Last revision of the histological nomenclature, approved by International Federation of Associations of Anatomists (IFAA) was published by the Federative International Committee on Anatomical Terminology (FICAT) in 2007 as Terminologia Histologica (TH) and last revision of the anatomical nomenclature, approved by IFAA was published by the Federative Committee on Anatomical Terminology (FCAT) in 1998 as Terminologia Anatomica (TA). Our programme includes the comparison of these latest revisions to the older versions of both nomenclatures, such as Nomina Histologica (1975), Basiliensia Nomina Anatomica (1895), Ienaiensia Nomina Anatomica (1935) and Parisiensia Nomina Anatomica (1955). The eponyms are excluded from the official versions. All the terms were filled in a free license program YOUDA, created de novo for this purpose. The database contains the code, Latin and English term, terms of older nomenclatures and eponyms according to the pattern of TH and TA. This version (some parts are still under construction) is accessible at our website: http://www.anatomickenazvoslovi.cz.

Key words: Anatomical terminology, anatomical nomenclature, histological terminolog, histological nomneclature.

P-124

Arteria mesenterica media – a case report

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Objective: The aorta abdominalis can rarely have an aberrant branch, the arteria mesenterica media. It is a part the mesenteric blood supply and stemmes from the aorta abdominalis between the arteria mesenterica superior and inferior. Its irrigation area and course are various, covering the area from the terminal ileum as far as the colon sigmoideum.

Method: One hundred forty-nine preparations of cadaverous material (Czech population) fixed with formaldehyde were dissected.

Results: A case of the arteria mesenterica media was reported. A large artery originated from the anterior wall of the aorta abdominalis 2 cm above the arteria mesenterica inferior origin, having the diameter 0.9 mm. It had a horizontal course to the left and sent off branches supplying the colon descendens and flexura coli sinistra.

Discussion: This variant corresponds to the normal feeding area of the arteria colica sinistra and the term "aberrant arteria colica sinistra" should be applied, instead of the arteria mesenterica media. Only eight cases of the true arteria mesenterica media have been reported since 1952.

Conclusion: The arteria mesenterica media is a vessel sent off by the aorta abdominalis in the area between both constant mesenteric arteries origins (arteria mesenterica superior and inferior) and should be called "aberrant artery" with an adjective of that vessel which it repalces or which area it irrigates.

Key words: Arteria mesenterica media, middle mesenteric artery, variant.

P-125

The effect of alendronate sodium on trabecular bone structure in the osteoporotic rat model

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This study was performed to assess the effect of Alendronate treatment on biochemical, densitometric, biomechanical and histomorphometric parameters in the osteoporotic rat model. 60 female Wistar rats each 3 months old from Cukurova University Medical Experimental Research Center were used in this study. 40 of the rats were ovariectomized and 20 went under sham operation. After that; the rats were divided into three groups as shm operated (n=20), ovariectomized alendronate (Ovx-A, n20) and ovariectomized vehicle (Ovx-SF, n=20) Shm operated grup was given no pharmocological treatment but the Ovx-A group recieved 1 mg/kg/day Alendronate through gastric gavage for 56 days. Ovx-SF group was given 1ml/kg/day vehicle through gastric gavage for 56 days. In the Ovx-SF group in which experimental osteoporosis was initiated an increase in the plasma osteocalcin and creatinin values and a decrease in plasma calcium values and an increase in urinary creatinin and calcium levels were noted. In the Ovx-A group to which alendronate was given a decrease in the plasma ostecalcin and creatinin values an increase in the plasma calcium values and a decrease in the urinary creatinin and calcium levels were noted. As for the densitometric measurements bone mineral density decreased in the Ovx-SF group and increased in Ovx-A group. The biomechanical measurements showed a decrease in the breaking force in the Ovx-SF group and an increase in the Ovx-A group. Histomorphometric measurements showed that the Shm group had normal trabecular structure. Ovx-SF group had detoriated trabecular structure, along with a loss in the trabecular count and thickness with an increase in trabecular space. In the Ovx- A group an increase in trabecular number and thickness together with an improvement in trabecular structure and a loss in the trabecular space is noted. The results of this study support that alendronate is a valuable treatment of osteoporosis in postmenopausal women.

Key words: Osteoporosis, alendronate sodium, histomorphometry, densitometry, biomechanical.