ABSTRACTS

1. STUDY OF COELIAC TRUNK & ITS VARIATIONS

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Introduction : The coeliac artery, also known as coeliac trunk is the first ventral branch of the abdominal aorta. It arises from the aorta at the level of (T12-L1) vertebrae immediately below the aortic hiatus of the diaphragm. It gives three branches, Left Gastric Artery, Common Hepatic Artery and Splenic Artery**.** The Knowledge of variations in origin, course and branching pattern of coeliac trunk is not only of anatomical and embryological interest but also clinical significance. Recognition of coeliac trunk variation is important for Anatomist & Surgeons while planning surgical & Interventional procedures in the gastro-hepatic and spleen region.

Aim: The aims of our study to show variation in

1. Vertebral level of origin
2. Diameter of the artery
3. Length of the artery
4. Variation in origin and course
5. Branching pattern

Method: A paramedian longitudinal Incision will be given on the anterior abdominal wall, the flap of the skin will be reflected to expose the superficial fascia of the anterior abdominal wall. The remaining different layers will be reflected in order and the peritoneal cavity approached. After cutting the falciform ligament the abdominal cavity will be exposed. The coeliac trunk will be identified and studied.

Conclusion: Variations of the coeliac trunk were found. The observations will be presented and discussed in the conference.

Key words: Coeliac trunk variation, Left Gastric Artery, Common Hepatic Artery, Splenic Artery, surgical intervention

2. SKIN FOLD THICKNESS MEASUREMENT – A TOOL FOR DETERMINING THE BODY FAT

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Introduction:-Excessive body weight is a very common problem in the modern society. Studies have shown that obesity is accumulation of extra fat in the body which can be measured by BMI (body mass index).

Aim & Objectives: - Correlation anthropometric measurements and obesity.

Material & Method:- BMI is measure by measuring the individual's height and weight, and calculated by dividing the person's weight (Kg) and square of their height (m). for prediction of percentage of body fat , there are 4 published equation of (1) Durin and Rahaman, (2) Johnston, (3) Brook and (4) Deurenberg by measuring the skin fold thickness by skin fold caliper from front of arm, back of arm, subscapular region and suprailiac (waist) region.

Result:-We have determined the percentage of fat in the 160 subjects aged 35-60 years comprising of 36 males and 124 females. Out of 36 male subjects, 12 subjects are overweight having 32.26% of body fat and 16 subjects are obese having 35.61% of body fat. Out of 124 female subjects, 52 subjects are overweight having 37.96% of body fat and 56 subjects are obese having 40.46% of body fat.

Conclusion: - The percent of body fat relevant with the category of BMI.

Key words:-Anthropometric measurement (height, weight, BMI, skin fold thickness), body fat.

3. MORPHOMETRIC ASYMMETRY OF TEMPORAL LOBE OF CEREBRUM: A CADAVERIC STUDY

Archana Rani, A.K. Pankaj, R.K. Verma, R.K. Diwan, Deepshikha Kori & Aruna Arya

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Aims of the study: The temporal lobes play an important role in organizing sensory input, auditory perception, language and speech production, as well as memory association and formation. Structures of the limbic system, including the olfactory cortex,

amygdala and the hippocampus are located within the temporal lobes. Damage to this area of the brain can result in problems with memory, understanding language, and maintaining emotional control. Therefore, the present study was undertaken to observe the various parameters of temporal lobe for asymmetry. As the Sylvian fissure divides both the frontal lobe and parietal lobe above from the temporal lobe below, length of Sylvian fissure was also taken into consideration.

Materials and Methods: 29 adult human brains irrespective of sexes, preserved in formalin were obtained from the Department of Anatomy, King George's Medical University, Lucknow. Sylvian fissure length, distance from posterior Sylvian point to inferior margin of temporal lobe, maximum length and width of temporal lobe of right and left sides were taken with the help of Vernier calipers.

Results: The mean length of Sylvian fissure was 7.54 on right and 7.69 cm on left side, mean distance from posterior Sylvian point to inferior margin of temporal lobe was 5.57 cm on right and 5.14 cm on left side, length of temporal lobe was 10.69 cm on right and 10.70 cm on left side. The mean width of temporal lobe was more on right side i.e. 4.17 cm as compared to left i.e. 3.79 cm which was statistically significant.

Conclusion: Usually there is a morphological partial asymmetry between the right and left hemispheres for any individual. Some of our measurements were found to be compatible with the ones in the literature, while others were incompatible. Further studies are required to establish correlation of this structural asymmetry with speech and language.

4. IDENTIFY AND CORRELATE THE MULTIPLE INTELLIGENCE AND FINGER PRINT PATTERN AMONG STUDENTS OF SHARDA UNIVERSITY

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Aims and Objectives: - To identify dermatoglyphic pattern and multiple intelligence in students of Sharda University and find if there is any correlation between dermatoglyphic pattern and multiple intelligence.

Methods - The study was conducted at Sharda University, Greater Noida on 300 students, consisting of four groups of 75 students each from Medical, Engineering, Law and Journalism and Mass Communication courses. Multiple intelligence profile of the students was determined by using a validated questionnaire designed by Kirsi et al (2013)based on multiple intelligence theory of Gardner. Finger print patterns of the students were obtained by the ink print method by Cummin and Midlo.

Results - Intrapersonal intelligence had highest mean score (74.5 ± 22.93) followed by interpersonal intelligence (69.59 ± 30.83) and spatial intelligence (65.69. ± 26.45). Linguistic intelligence had the lowest score (52.45 ± 28.55). Ulnar loop pattern (61%) was the most common followed by whorls (33.2%), arches (3.3%) and radial loops (2.8%).The %age of ulnar loop was highest in students with high score for kinaesthetic and that of whorl was in students with logical intelligence. Highest %age of arches was seen in students with high score in linguistic intelligence, whereas high performers in logical intelligence had the lowest number of arches. No significant correlation was observed between the multiple intelligence types with any of the FPPs, except for logical intelligence, which showed a significant negative correlation with prevalence of arches.

Conclusion - The results of the study confirm that every individual has different types of intelligences with different level. However, the results on correlation between the MI types and FPPs showed weak correlation and were not conclusive.

4. MORPHOLOGICAL STUDY OF GREAT CARDIAC VEIN IN HUMAN HEARTS

Dr. Jolly Agarwal, Dr.Virendra Kumar,

Introduction:

Great cardiac vein is the main tributary of the coronary sinus. Coronary sinus is the main venous drainage channel of human heart. Great cardiac vein is the longest venous vessel of heart. It drains anterior wall of the left ventricle and interventricular septum.

Aims of the study: The aim of present work is a) to study the morphology of great cardiac vein b) to study effect of age on the diameter of GCV.

Materials and Methods: The study was performed in the Department of Anatomy, SRMS IMS, Bareilly on 30 hearts from embalmed cadavers. The hearts were procured from the cadavers (age ranging from 15 to 65 years) available in the department of Anatomy SRMS IMS, Bareilly.

Results: In this study, we found the presence of GCV in entire length of anterior interventricular sulcus in 43.33% cadaveric hearts & its presence in upper 2/3 part of anterior interventricular sulcus in 56.67% and in 3.33% hearts the presence of great cardiac vein which start from the apex of heart. The diameter of GCV showed increase in diameter with increase in age.

Conclusions: The knowledge of anatomy of coronary venous system is important for the therapeutic options of arrhythmias and heart failure. The venous system is also a useful conduit for delivery of percutaneous transcatheter treatment. Further great cardiac vein can be used for implanting defibrillation coils to lower defibrillation thresholds.

5. A STUDY OF INSULAR SEGMENT OF MIDDLE CEREBRAL ARTERY IN NORTHERN INDIA

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Introduction : The microsurgical anatomy of middle cerebral artery is of particular interest to the cerebrovascular surgeons as it supplies most of the superolateral surface of cerebral hemispheres and is the most commonly involved artery in stroke . The insular segment (M2 segment) begins at the limen insulae and runs on the surface of the insula in the sylvian insular cistern with a superoposterior direction. It consists of two or three branches that arise from the bifurcation or trifurcation of the M1. **Objective**: Certain clinical conditions like aneurysms and glioma of the M2 segment demands special attention due to vascular complexity of the insular area and peculiar clinical characteristics. The present study was carried out for a better understanding and to define further the microsurgical anatomy of the insular segment of middle cerebral artery, hoping to find immediate application of our findings in the field of microsurgical cerebral revascularization and better interpretation of radiological angiographic investigations performed in cases of young cerebral haemorrhages. **Materials and methods** : Total 20 middle cerebral arteries (MCA) were studied obtained from 10 brains .Meticulous dissection was done and branches of middle cerebral artery were exposed and cleaned in lateral sulcus on the inferior surface of brain. Digital photographs were taken.

Result : In all 20 MCAs bifurcation was noted . In 15 out of 20 specimens more than one major cortical branch was given by M1 segment before its division into secondary trunks at insula. No trifurcation was found .

Conclusion : Some structural and statistical variations were noted in our study as in origin of major cortical branches before bifurcation in 75% of cases.

6. SUBCLAVIAN STEAL SYNDROME

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Background : Subclavian steal is the physiological protective phenomenon of reversal of blood flow in vertebral artery due to narrowing of ipsilateral proximal part of subclavian artery and is seen usually during the strenuous work by upper extremity. It may be asymptomatic or may lead to features of subclavian steal syndrome including upper limb ischemia and /or vertebrobasilar insufficiency.

Aim and Objective : The present study aimed to discussthe subclavian artery stenosis and its applied anatomy.

Material and Method : During the clinical practice at Life Span group of Diabetic clinic, a 46.7 year old male patient reported with the complaints of persistent numbness in fingers of left hand . On general physical examination, his systolic blood pressure inter arm difference was 22 mm Hg. CT angiography revealed significant narrowing of proximal part of left subclavian artery.

Discussion : The literature reports prevalence ofInter arm difference of SBP > 15 Hg to be 10% in population with significant cardiovascular risk factors. The significant subclavian stenosis is present in approximately 7% of clinical population. Angiographic prevalence of left subclavian artery stenosis has been reported to be 0.5 to 4% in patients with coronary artery disease, and >18% in patients with peripheral artery disease.

Conclusion : The findings suggest that bilateral brachial blood pressure should be measured routinely in patients with an elevated risk factors such as smoking, diabetes, peripheral artery disease, coronary artery disease to screen for subclavian stenosis and to avoid missing hypertension , since it is a challenge for a physician with high index of suspicion.

Key words : Subclavian artery stenosis, Inter arm blood pressure difference .

6. NULLIPARA DOMINATE MULTIPARA IN PIH

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Background: -Hypertension is the most common medical problem in pregnancy, complicating up to 15% of pregnancies.

Aim and Objective: - The aim of this study to understand the effect of Pregnancy induced hypertension (PIH) on the parity of pregnancy.

Material & Method: -This study was done in Rama Medical College, Kanpur. Forty four cases of PIH studied who were either nulliparous, primiparous or multiparous.

Result: - Observational study revealed that nulliparous women are at high risk of PIH followed by primiparous then multiparous.

Conclusion: - PIH affect the parity.

7. HISTOLOGICAL STUDY OF HUMAN PLACENTA IN NORMAL VERSUS PREGNANCY INDUCED HYPERTENSION AMONG NORTH INDIAN POPULATION

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AIMS & OBJECTIVE: To demonstrate the histopathological changes of placental tissue in pre-eclampsia with that of normal placenta by using histological techniques.

MATERIALS & METHODS: The present study was done at Anatomy Department in collaboration with Department of Obstetrics & Gynecology and Department of Pathology. A total of 90 placentas was studied, 45 each from mothers with and without Pregnancy Induced Hypertension(PIH). Histological examination was performed using Hematoxylin and Eosin staining.

RESULTS: Increased number of Syncytial Knots with exfoliated trophoblast cells, Cytotrophoblastic Cellular Proliferation, Fibrinoid Necrosis and Hyalinised Villous spots were observed per low power field in the hypertensive group as comparison to control group.

CONCLUSION : Histological changes in PIH placentas are indicative of the pathogenesis of maternal and fetal morbidity and mortality in women with PIH.

8. Heterotopic Ossification in Radioulnar Interosseous Membrane – A Case Report

Authors: Verma A., Chopra J., Deewan R.K., Verma R.K.

Introduction:

Interosseous membrane is a broad thin collagenous sheet whose fibers slant distomedially between the radial and ulnar interosseous borders. The membrane gives attachment to muscles. Its fibers help in transmission of forces which act proximally from the hand to the radius, thence to the ulna and humerus. Anteriorly in its proximal three-quarters, the membrane is related to the anterior interosseous vessels and nerve. Heterotopic ossification is the abnormal formation of true bone within extra skeletal soft tissues such as muscles, fascial planes, tendons, other mesenchymal soft tissues.There are various causes of interosseousmembranecalcification like trauma, fluorosis, X linkedhypophosphatemic rickets, osteogenesisimperfecta type V etc.It is seen in 2% of all forearm injuries leading to ossification of interosseous membrane and causes significant functional impairment.

Case Report:

During routine osteology demonstration classes for the 1st year MBBS students in the Department of Anatomy, King George Medical University, Lucknow, we observedleft radius and ulnaconnected by an abnormal piece of bone at the site of proximal part of interosseous membrane. This bony bridge was the heterotopic ossification in the interosseous membrane hence resulting in fusion near the proximal ends of radius and ulna. On measurement, the bony bridge between radius and ulna was 1.5 cm x 0.5 cm x 1cm.,both anterior, posterior surfaces and superior, inferior borders were smooth.

Conclusion:

The ossification of interosseous membrane resulted in bony fusion of radius and ulnatherefore may prevent normal range ofsupination- pronation movement of forearmand might be associated with pain. Its presence should alertthe surgeon to look for various abnormalities that are usually associated with it.

9. Occipito-cervical Synostosis: A Case Report

Aruna Arya, Sushma Tomar, Archana Rani, R. K. Diwan, Punita Manik. P. K. Sharma

The superior articular facets of first cervical vertebra, the atlas, forms ellipsoidal variety of synovial joint with the condyles of the occipital bone. At atlanto-occipital junction, occipito-cervical synostosis a rare congenital malformation which results as a failure of segmentation and separation of the most caudal occipital sclerotome and the first cervical sclerotome during the *first few weeks* of foetal life.Occipito-cervical Synostosisis also known as *atlanto-occipitalfusion* or *occipitalisation* or *assimilation of atlas.*

According to previous literatures the incidence of occipito-cervical synostosis was found to be equal in both the sexes, and ranges from **0.14 to 0.75%.**

A skull having occipito-cervical synostosis was incidentally found during routine osteology tutorial of undergraduate students. The specimen showed fusion of anterior and posterior arches of atlas vertebra with the margins of foramen magnum and free transverse processes. The diameter of foramen magnum was also found to be reduced in this skull.

Anomalies in the area of cranio-vertebral junction are important due to the localization of the vertebral artery and first cervical nerve on the superior aspect of the atlas. Compression of the vertebral artery can cause a decrease in the brain blood flow; similarly, compression of the first cervical nerve can cause neurological symptoms.

The knowledge of this congenital anomaly is important for orthopaedic surgeons for upper cervical spine pathology and for anesthetist in case of failure of cisternal puncture. Occipito-cervical synostosis reduces the foramen magnum dimensions leading to spinal cord compression, hence knowledge of this clinical entity is of utmost importance for neurosurgeons, physiotherapists and radiologists.

10. A Study of Sacral Hiatus in Dry Human sacra in North Indian population

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Aims & Objectives: Sacrum is a large triangular bone formed by fusion of five sacral vertebrae which forms caudal region of the vertebral column. The number of vertebrae may increase or decrease in case of sacralization or lumbrization. The present study was done to identify variation in sacral hiatus

(SH) in North Indian population in order to improve the access of SH for caudal, epidural anaesthesia and analgesia, new transpedicular and lateral mass screw placement.

Material & Methods: 52 dry human sacra with undetermined sex and age were collected from osteology lab of the Department of Anatomy, King George's Medical University, Uttar Pradesh, Lucknow. Mutilated, damaged, and deformed sacra were excluded. We observed the shape, level of apex and base of SH and all parameters were measured with the help of Vernier calipers (accurate to 0.01 mm) recorded, tabulated and analyzed.

Results: Inverted U shaped and inverted V shaped sacral hiatus was observed in maximum number of specimens i.e. 20.6% and 31.9% respectively. The apex of SH was most commonly located at 4^{th} sacral vertebra in 60.30% cases while base was located at 5^{th} sacral vertebra in 80.70% cases.

Conclusion: Absence of sacral hiatus and its narrowing at the apex was observed in some specimens. This is important not only to anatomists & researchers but also for anaesthetists, orthopaedic surgeons and neurosurgeons while applying caudal epidural anaesthesia. Knowledge of these variations may help to improve the success of caudal epidural block.

11. Morphological & Morphometric Study On Vertebral Synostosis and its Clinical Significance.

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Aim of the study- Morphological& morphometric study of fused cervical,thoracic,lumber and sacral vertebrae and its clinical significances in various fields of medicine .

Materials and Methods-The present study was conducted on 315 dry vertebral bones of different regions of the human body of unknown sex and age available in the department of Anatomy,BRD Medical College Gorakhpur. Vertebrae were examined for the complete or incomplete fusion of defferent parts like fusion between adjacent vertebral bodies, lamina,spinous process,transverse process,superior and inferior articular process etc. Dimensions of fused vertebral bodies and vertebral canal were measured with the help of Digital Vernier Caliper.

Results- Among the cervical vertebrae body of one typical vertebra was found to be fused with another. In the thoracic vertebrae two sets of two typical thoracic vertebrae was found to be fused. In one case anterior aspect of body along with articular processes were fused while in another case only the articular processes were fused.

Conclusion- Inappropriate fusion of vertebrae results in block vertebrae or vertebral synostosis. It has got clinical importance to radiologist, surgeons,orthopaedics,neurosurgeons,anaesthetists and rheumatologists .

12. Variations In Talar Articular Facets And Their Association With Calcaneal Spurs: A Study In North Indian Population

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Aims of the study: Calcaneum is the largest tarsal bone of foot. The superior surface of calcaneum bears 3 articular facets anterior, middle and posterior for the talus. There are considerable variations in number and arrangement of these facets. Many times because of constant stress or calcium deposit, a bony deformity appears on it called calcaneal spur. Present study was done to determine pattern of the talar facets of calcanei and their clinical implication in North Indian population and association with calcaneal spur.

Materials and Methods: The present study was conducted in the Department of Anatomy, KGMU, Lucknow, Uttar Pradesh in 600 dry calcanei of unknown sex and age. The superior, inferior and posterior surface of each calcaneum was examined for various type of articulating facets for talus and presence or absence of calcaneal spur.

Results: According to types of talar facets, we classified calcanei into 5 Types. **Type I**- Fusion of middle and anterior facets (73.9%). **Type II**- The anterior and middle facets were separate (21.5%). **Type III**- Absence of anterior facet (3.67%).**Type IV**- Fusion of all 3 facets i.e. anterior, middle and

posterior (0.3%).**Type V**- Fusion of middle and posterior facets (0.6%). Type I was predominant followed by Type II. Total incidence of calcaneal spur was found to be 17.7% of which 35% were only dorsal spur, 60.4% only plantar spur while 4.7% bear both dorsal and plantar spurs. These spurs were found predominantly in Type I calcanei. Type III and IV didn't exhibited dorsal or plantar spurs.

Conclusion: There is dominance of Type I calcanei which is associated with spurs in Indians as compared to Europeans who commonly present Type II. This fact necessitates the orthopaedic surgeons in India to modify the surgical technique when they perform calcaneal osteotomy.

13. Sacrum with Five Sacral Foramina due to Sacralization of Coccyx

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While observing anatomic variations in sacrum it was found that only in 12 sacra out of 150 sacra (8%) body and transverse processes of first coccygeal vertebra were fused with the body and transverse processes of fifth sacral vertebra. Coccygeal cornua were fused with sacral cornua. This complete fusion of first coccygeal vertebra with sacrum generated the formation of fifth pair of sacral formina, present on the ventral and dorsal surfaces of sacrum. This anatomical variant is important during surgical procedures at the sacrococcygeal region, pediatric surgeries and obstetrics.

The appearance of sacrum with five pairs of foramina may be a developmental or congenital defect. Vertebrae are derived from the sclerotome portion of somites. Each vertebra is formed from the combination of caudal half of one somite and the cranial half of its neighbour. Thus sacralization of first coccygeal vertebra is caused by the bordershifts. Patterning of the shapes of the different vertebrae is regulated by HOX GENES whose mutation leads to sacralization of first coccygeal vertebra also.

In lumbosacral spine disorders sacral cornua are identified to perform caudal epidural block and it will be difficult to identify sacral cornua in case of sacralization of coccyx.

Coccyx becomes fixed in sacralization of coccyx and there is no increase in anteroposterior diameter of pelvic outlet which may lead to prolonged second stage of labor, perineal tears and foetal distress. Prior to spinal block and interventional procedures sacralization of coccyx demands correct clinical and radiological assessment.

14. Morphological Variations of Conoid Tubercle of Clavicle, its link with Morphometry of Clavicle

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Aim & Objectives: The conoid tubercle, a bony prominence on inferior surface of lateral third of clavicle provides attachment to conoid ligament, a part of coraco-clavicular ligamet. Conoid tubercle shows varied morphology from merely a rough area to a prominent elevation. Sometimes an articular facet can exist for coraco-clavicular joint. The present study was conducted to observe any correlation between morphological variations of conoid tubercle and morphometric features of clavicle.

Materials & Methods: Present study was conducted on 167 dry clavicles (90 right and 77 left) obtained from Osteology Lab of Department of Anatomy, KGMU, Lucknow. Any projection of conoid tubercle more than 1mm from the inferior surface of clavicle was considered as conoid elevation. Conoid tubercle was cautiously looked for presence of well circumscribed facet. Maximum length, length of anterior convexity and maximum anterior projection of anterior convexity of clavicle was measured. Mean and the standard deviation of various parameters were calculated and correlated to observe any association.

Results: On right side 5 clavicles with conoid elevation and 5 clavicles with facet on conoid tubercle were observed where as on left side in 9 specimen elevation and in 2 facet was observed. Mean length of right clavicles was 13.221±1.098 cm and left was 13.346±1.171cm.Mean length of anterior convexity of right and left clavicles was 8.987cm and 7.981cm respectively. Mean of

maximum anterior projection of anterior convexity of right and left clavicles was 1.866cm and 1.959cm respectively. It was observed that anterior convexity of clavicles having conoid elevation was more as compared to normal clavicles, whereas the same was less for clavicles having articular facet as compared to normal ones.

15. Osteological Study of Sacralisation of Fifth Lumbar Vertebra

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Introduction

Sacrum bone is normally formed of five fused sacral vertebrae which articulate at its wide base with the fifth lumbar vertebra above and with the coccyx at its apex below. Partial or complete fusion of fifth lumbar vertebrae with first sacral vertebra is called sacralisation. Sacralisation of fifth lumbar vertebrae is one variant of lumbosacral transitional vertebral (LSTV) anomaly.

Aim

To observe prevalence of sacralisation of fifth lumbar vertebra in dry human sacrum.

Material methods

The total dry human sacrum collected was 52 from the Department of Anatomy at Himalayan Institute of Medical Sciences, Dehradun. Damaged sacrum & sacrum with sacralisation of first coccyx were excluded from study.

Observation

Among 52 selected sacrum samples, only 4 of them were noticed having sacralised fifth lumbar vertebra in addition to normal five fused sacral vertebra & five pairs of sacral foramina instead of four. Fusion between fifth lumbar vertebra & first sacral vertebra was incomplete in three of the sacrum whereas complete fusion between them was noticed in one sacrum. Total sacralisation noted in this study is 7.6%. Deepa et al (2014) noted sacralisation in 10.25% cases of south Indian population. Kubavat Dharati et al (2012) observed 11.1% sacralisation prevalence in Gujarati population.

Conclusion

Each vertebra embryologically formed from combination of caudal half of one sclerotome and the cranial half of succeeding sclerotome regulated by HOX genes. Miss-expression of HOX 10, 11 genes leads to caudal shift of sclerotome during vertebral formation in intra uterine life, resulting in sacralisation of fifth lumbar vertebra. Sacralisation leads to anatomical & biomechanical disturbance causing back pain, delayed & difficult labor. All spinal surgeons, anesthetist should be aware of such common variation to avoid spinal surgery, epidural anesthesia at wrong level.

Key words: Sacralisation, LSTV

16. Dose Dependent Teratogenicity of Carbamazepine On Fetal Mice Kidney.

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Aims and objectives:-Carbamazepine is one of the most efficient anti-epileptic drugs among women of child bearing age . Aim of this study is to investigate the dose dependent effects of carbamazepine on mice fetal kidney.

Material and method:-The healthy pregnant female mice were divided into three groups; low dose, high dose and control. Group I (low dose) received 25 mg/kg of carbamazepine and Group II (high dose) received 250 mg/kg Carbamazepine by intraperitoneal route on 7^{th} day of gestation. The control group received equivalent quantity of distilled water. Fetuses were delivered on the 18^{th} day of gestation by hysterectomy. Fetal kidneys were dissected out and were examined for gross malformations and histopathological changes

Results:-Kidney of fetal mice treated with low dose of drug showed edematous changes and mild degenerative changes of glomeruli. With higher dose, glomeruli appeared to be atrophied and degeneration of epithelial lining of most tubules was evident.

Conclusion: Carbamazepine is toxic to fetal mice kidney and the toxicity is dose related.

17. Effect of Tocopheryl Acetate on Gross Fetus of *Swiss Abino* Mice on Maternal Induced Cigarette Smoke

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Aim: Cigarette smoking is worldwide problem which can be correlated with teratogenicity, if mother is exposed during pregnancy. Tocopheryl acetate plays as an antioxidant against the oxidative stress evolved by cigarette smoke exposure. Aim of the present study is to observe whether the effect of tocopheryl acetate on fetuses of maternal cigarette smoke exposed.

Materials and methods: Thirty six pregnant mice randomly assigned to different groups (Group I (control), Group II (tocopheryl acetate), Group III(soyabean oil used as vehicle for tocopheryl acetate), Group IV (Cigarette smoke Exposed), Group V (Cigarette smoke exposed plus tocopheryl acetate) and Group VI(Cigarette smoke exposed plus soyabean oil) were exposed to cigarette smoke 3 times a day for 20 minutes each time and tocopheryl acetate with dose of 200mg/kg/day in 0.3ml of soyabean oil as vehicle orally through oral gavage from the 5^{th} of gestation to 15^{th} day. On 18^{th} day, mice were sacrificed followed to uterectomy to observe fetal gross morphological features.

Results and conclusion: Cigarette smoke exposed mice showed their fetus significant low birth phenotype such as reduced crown rump length, fetal weight loss, resorption, severe growth retardation, venous congestion, hemorrhages, limbs defects, and enphalocele. Negligible abnormalities were seen among the control and tocopheryl acetate group. Cigarette smoke exposed group with tocopheryl acetate exhibited weight gain among the fetus as well as no gross abnormalities. It can be concluded that tocopheryl acetate may have an ameliorating effect on the cigarette smoke during pregnancy on fetus.

18. Hepatic Changes Induced by Leflunomide in Swiss Albino Mice Fetuses

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MLN Medical College Allahabad[1], IMS BHU Varanasi[2]

Aims and Objective- Leflunomide is the only new disease modifying antirheumatic drug introduced in the last two decade. Since it is a newer drug introduced in market, data regarding its teratogenic effects are still lacking and pregnant womens suffering from rheumatoid arthritis should continue it or take it with some dose modifications is still a question in our mind. Present study aims at determining its teratogenic effects on mice foetuses by continuous and single doses on different gestation days.

Material & Methods- Leflunomide was given to pregnant swiss albino mice by oral gavage in continuous (15mg/kg body weight) and single dose (50mg/kg body weight) on particular gestation days and control group was given equal volumes of normal saline on same gestation days. The Pregnant mice were sacrificed on 19^{th} day of gestation, foetuses were removed from uterine horns, inspected for gross malformation and liver was removed and processed for histological study.

Results- We have found that treated mice fetal liver showed dilated central vein, increased number of Kupffer cells and enlarged hepatocytes which showed nuclear degeneration and cell division.

Conclusion-Leflunomide showed histological changes in fetal liver and should be used judiciously in pregnant females.

19. Imidacloprid single exposure effects on haematological parameters in chick embryos

Muktyaz Hussein, Vishram Singh*, A.K Singh**, Prerna Gupta***

Introduction: The agricultural production in the past few years has been increase by the use of many synthetic pesticides and their application related to selective toxicity for certain organisms yet it has resulted in serious health effects on many non-target organisms as well. Imidacloprid is a neonicotinoid

insecticide being used extensively for crop protection and pet flea control programme.

Methods: Current study was carried out in the department of Anatomy Santosh Medical College Ghaziabad and Govt. Medical College, Ambedkar Nagar U.P. on 180 fertile eggs of white leghorn chicken obtained from government poultry farm after taking permission from animal ethical committee. Chicken eggs exposed to Imidacloprid with doses of 5µg, 10µg and 20µg in a volume of 5µl, 10µl and 20µl respectively and control same as test group. The embryos were terminated on 21st day and blood collected directly from heart for analysis of haematological parameters namely Hb, PCV, TLC and TRBC.

Results: Imidacloprid has exposure effects on hematological parameters in chick embryos showing decrease level of Hb, PCV in all experimental groups and TRBC in higher doses and increase level of TLC in all experimental groups in comparison to control groups.

Conclusion: Comparatively higher doses proved more toxic and caused changes in haematological parameters in chick embryos after exposure to Imidacloprid in comparison to normal saline.

Keywords:Chicken embryos, Imidacloprid exposure and haematological parameters.

20. Behavioural Changes Induced By Lamivudine in Swiss Albino Mice

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Aims and Objectives: Lamivudine is a reverse transcriptase inhibitor used in pregnant females infected with hepatitis B or HIV virus to prevent maternal to child transmission. The present study is aimed to observe the neuro toxic effects of Lamivudine in growing embryo.

Material and Methods: Lamivudine was given to pregnant Swiss Albino mice by oral gavage in doses of 18mg/kg b.w and 30mg/kg b.w from 6-15th days of gestation. The control mice were fed distilled water by the same route on the same gestational days. Half of the pregnant mice from both control and different treated groups were allowed to deliver. The delivered pups were subjected to various behavioural tests such as Open Field Exploratory Test, Elevated Plus Maze Test at the age of 8 to 10 weeks approximately.

Result : The mice pups of the lamivudine treated group showed increased anxiogenic behaviour in comparison to the control.

Conclusion : Lamivudine causesbehavioural changes and, thus should be used judiciously in pregnant females.

21. Effect of Exposure and Withdrawal of Pyrethroid and Herbal Based Mosquito Vaporizer Fumes on Body Weight of Albino Rats

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Aim: Mosquito borne diseases are very common problems during these days. To avoid it, pyrethroid based mosquito repellents are frequently used in society. Now a days, herbal based repellents are also available in market and manufacturers stated that they are eco-friendly, non-toxic and totally safe for humans. Still there is low awareness regarding their health hazards. Therefore, the aim of the present study was to analyze changes in body weight of albino rats and effects of withdrawal of aforesaid mosquito repellents.

Material and Method: 26 male albino rats weighing approximately 120-180 grams were obtained from Indian Institute of Toxicological Research (IITR), Lucknow, UP. These rats were further categorized as unexposed group i.e. 0- control, pyrethroid exposed group- IA and its withdrawal group-IB, herbal exposed group-IIA and its withdrawal group-IIB. Exposures were given for 12 weeks, whereas to see reversibility in withdrawal groups (IB and IIB), rats were kept for further 4 weeks after completion of exposure. Daily 8 hours exposure of mosquito vaporizer fumes was given for 12 weeks. Statistical analysis was done by using ANOVA and Tukey HSD tests.

Results: During study and at the end of experiment, statistically significant differences were found between mean body weight of control and exposure groups. Significant changes were noticed in mean body weight after withdrawal in comparison to last week of exposure. Results will be discussed in detail at the time of presentation.

Conclusion: Pyrethroid based vaporizer causes significant decrease in body weight of rats, as compared to herbal based vaporizer. While the reversal changes were improved more in herbal withdrawal group than pyrethroid withdrawal group.

22. Teratogenic Effect Of Propylythiouracil On Swiss Albino Mice – A Macroscopic Study

Aims & Objective: To study the macroscopic effect of Propylthiouracil (antithyroid drug) on developing mice, as the drug is commonly used in the treatmentof hyperthyroidism during pregnancy (esp. Graves' disease).

Material & Methods: The drug was given to pregnant Swiss albino mice, orally in dose of 150 mg/kg/day from 6-8th day of gestation. In control group, the same volume of distilled water was used as vehicle. The pregnant mice were sacrificed on 18th day of gestation by cervical dislocation and the foetuses were dissected out by uterotomy. The foetuses of both groups were weighed and physical parameters were measured and recorded. They were also observed for macroscopic abnormalities, and then photographed.

Result: The treated foetuses showed growth retardation, prominent cutaneous vessels on trunk and forelimb, generalised subcutaneous haemorrhage on trunk, haemorrhagic spots on snout and foot and absence of anterior abdominal wall (omphalocoel), while in control group no such abnormalities has been observed.

Conclusion: As Propylthiouracil causes gross abnormalities, it should be used cautiously in women of reproductive age suffering from hyperthyroidism to avoid risk of congenital malformations.

23. Histopathological Changes in Developing Mice brain Treated with Lamotrigine on early and Late Phase of Gestation.

Singh S[1] , Pandey S K[2]

Aims and objectives- The use of antiepileptic drugs and mood stabilizers in pregnancy always presents challenges to doctors and their patients as it may have noxious effects on the developing embryo. Lamotrigine (LTG) is most commonly prescribed drug among the newer antiepileptic drugs. Earlier, the microscopic studies have not undertaken to observe the teratogenic effects of LTG on developing brain. The present study has been focused to find out the histopathological changes on the growing brain after administering the drug during embryogenesis and organogenesis periods of gestation.

Material and Methods - In the present study the pregnant mice were divided into two experimental groups i.e. early and late. Further, each group divided into two subgroups i.e. Gr1 and Gr2 (subgroup one), G3 and G4 (subgroup two). Gr1 was treated in early phase of gestation i.e. on day 4, with LTG (150mg/kg body weight), whereas Gr2 belonged to the corresponding control group, which received normal saline of same volume and route. Gr3 was treated in late phase of gestation (i.e. day 9) with LTG, whereas Gr4 belonged to the corresponding control group. The pregnant mice were sacrificed with an overdose of ether on day 19th of gestation and the viable foetuses were collected. The foetuses were preserved in 10% formalin solution for 2-3 days. After fixation the brain was dissected out and processed for paraffin embedding followed by Haematoxylin and eosin staining for histopathological study and finally the photomicrograpgy was done.

Results - The histopathological effects on the developing cerebral cortex revealed the destruction of the cortical layers , loss of normal architecture of sobcortical zone with oedematous changes in both treated group especially in Gr I .The ventricles were dilated with disintegration of choroid plexus and destruction and degeneration of their ependymal lining in treated group as compared to the control group.

Conclusion- The lamotrigine has shown various noxious effects on developing brain especially during embryogenesis period of gestation. Therefore this antiepileptic drug should not be regarded as totally safe drug during pregnancy.

24. Ultrasonographic Measurement Of Spleen Width In Relation With Height In Adults Of Bihar

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The spleen, "lien", "Haemo-lymph organ", composed of lymphoid tissue is the largest ductless gland in the body, shows variations in its size and weight at different periods of life, in different individuals, and in the same individual under different conditions.

A large number of entities can affect spleen and the spleen size may give information regarding diagnosis and course of various gastrointestinal and hematological diseases, so, the estimation of the spleen size in vivo is often important in the diagnosis, treatment and prognosis of a variety of disorders.

The present study was done to determine the normal range of width of spleen in correlation with the height of adult male [80] and female [80] subjects [total 160], coming to the Department of Anatomy and Radiology, Darbhanga Medical College and Hospital, Darbhanga, Bihar. Height of each individual was measured with the help of Stadiometer, Spleen width was determined with the help of Ultrasound Machine.

Width of spleen increased with increase in height in both males and females, less in females than that of males with corresponding group of body height, width was less than 6 cm in most of the subjects.

The details shall be presented at the time of conference.

Key words: Spleen, Ultrasonography, Spleen width, Height,

25. Morphometeric Variations Of Renal Artery: A 64-Slice CT Angiographic Study In North Indian Population

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Aim of study: Variations of renal artery are very common and can affect the procedure and outcome of surgeries. The present study was conducted to find out normal range of morphometic parameters of renal artery. **Materials and Methods:** For this study we studied CT angiographic images of 53 subjects (106 renal arteries) obtained from Department of radiology, KGMU, Lucknow. The angiographic images were analyzed for renal arteries and their length and diameter was measured utilizing computerized tools.

Results: The minimum length of main renal artery was 8.5mm and maximum length was 54.8mm on the right side. On the left side minimum length was 7.7mm and maximum length was 48.8mm. Diameter of main renal artery ranged between 3.9mm to 8.2mm.Mean diameter of main renal artery on left was 5.84±0.8mm and on right side was 5.46±1.5mm. The diameter of main renal artery was significantly lessin presence of accessory renal artery. **Conclusion:** These data are helpful for radiologist and urosurgeons prior to planning sugery in renal area.

26. Accessory Renal Arteries: Contrast Enhanced Computed Tomographic Study

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Aim Of The Study: The present study was undertaken with the aim to analyse the presence of accessory renal arteries in subjects undergoing contrast enhanced computed tomographic examination of abdomen. **Materials & Methods:** Contrast enhanced multidetector computed tomographic scans of 200 subjects, 100 males and 100 females (age range 15 – 80 years) who were free from any pathological lesions were included in the study. Number of accessory renal arteries on each side and their mode of entry into the kidney were noted. **Results:** Single renal artery supplying each kidney was observed in 109 patients and multiple

renal arteries were noted in 91 subjects. Single renal artery bilaterally was present in 64 females and 45 males suggesting that multiple renal arteries are more common in males. In males, on the left side single renal artery was noted in 67 cases and multiple renal arteries in 33 cases and on the right side single artery was seen in 62 and multiple arteries in 38 cases. In females, on the left side single renal artery was noted in 75 and multiple arteries in 25 cases and on the right side single artery in 78 and multiple arteries in 22 cases. The additional arteries were named hilar when they pass through hilum and polar (superior polar and inferior polar) when they enter the poles of the kidney directly. Overall in males, 5 superior polar, 44 accessory hilar and 42 inferior polar arteries were present and in females 3 superior polar, 25 accessory hilar and 22 inferior polar arteries were present. **Conclusion:** Multiple renal arteries are more common in males and majority of them are accessory hilar.

27. Computed Tomographic Angiographic Study Of The Variation In The Level Of Bifurcation Of Abdominal Aorta In North Indian Population

Arti, Punita Manik, P.K.Sharma, R.K.Dewan, Priyanka Sinha

Institution- G.S.V.M. Medical College Kanpur.

Aims and objectives-

To study the variations in the level of bifurcation of abdominal aorta through CT angiographic studies. Knowledge of these vascular variations is important in different laparoscopic surgeries, liver and kidney transplantation and oncologic resections in the abdominal region.

Materials and methods-

The present study was a prospective study.The study group included 52 patients including 32 males and 20 females of age ranging between 6 yrs to 65yrs. The patients underwent computed tomographic aortic angiographic scan for various indications, at 64-slice CT center of the Department of Radio diagnosis. Computed tomographic angiographic images taken were reviewed for normal anatomy of abdominal aorta, their variants and anomalies

Results-

L4-upper margin was the most common location for bifurcation while L5-upper margin and L3 upper margin were the least common locations.

Irrespective of the gender, L4, lower, middle and upper margin were the most common location of bifurcation, thus showing no statistically significant difference between two genders.

L4-middle and L4-upper margins were most common locations irrespective of the age group.

CONCLUSION

- It was concluded that the upper margin of L4 was the most common site of bifurcation (28.8%) which is slightly lower in incidence than other studies. The upper margin of L5 (1.9%) was the least common location.

28. Imaging Study of Sphenoid Sinus Anatomy and Propinquity to Optic Nerve

Garima Sehgal, Manjari Lohani, Rk Verma, Archana Rani

Aims of Study: Sphenoid sinus (SS) is extremely variable in size, shape and relation to the sella. It is divided by asymmetric septa & degree of pneumatization may vary considerably. Optic nerve (ON) and internal carotid artery (ICA) are related closely to the sinus & of considerable clinical significance. Aim of the study was to analyse anatomy of sphenoid sinus & delineate the relationship between the optic nerve and the sphenoid sinus using CT data.

Materials & Methods: 55 CT scans (110 sides) of paranasal sinuses of patients older than 18 years were retrospectively reviewed. Images were assessed in three planes – axial, sagittal and coronal. We observed the anatomy of sphenoid sinus with reference to septation and pneumatization, position and relationship of optic nerve to sphenoid and posterior ethmoid sinus, dehiscence of the bony wall and extension of pneumatization into surrounding bones.

Results: Sphenoid sinus was sellar type (62%), pre-sellar type (24%), conchal type (7%), post-sellar type (5%) and non- pneumatized (2%). The most frequent position of optic nerve (ON) was close to the sinus without indentation of the wall – 56.36 %. Bulging of ON into the sphenoid sinus was found in 23.64 %, the nerve coursed through sinus 16.36 %

and traversed close to both sinuses in 3.64 %. Dehiscence of bony wall, pneumatization of anterior & posterior clinoid process was seen in 23.64 %, 29.1% and 7.28% subjects, respectively.

Conclusion: The degree ofpneumatization and septation of sphenoid sinus may vary. Computed tomography is a preferred radiographic modality for evaluation of such variations. A knowledge of SS variations may help the surgeon in deciding the surgical approach to hypophysis.The optic nerve shares a varying relationship with the sinuses,therefore, **v**ariations in relationship may be a predisposing factor for involvement of optic nerve during sinus pathology or for nerve injury during surgical interventions of the region.

29. A Study Of Coronary Dominance In North Indian Population By Angiographic Method

Himani Singh, A.K Singh, Shipra Gupta, Neha Goel, Santosh Kumar Barnwal, Akanksha Singh.

Moti Lal Nehru Medical College, Allahabad.

Introduction: The incidence of coronary artery disease is increasing now a day's all over the world. Dominance pattern of the heart has got important clinical significance in different pathologies. So the present work is undertaken to study the dominance of coronary arteries in population of North India. Origin of the posterior interventricular artery was taken as basis of dominance.

Aims and objectives: Aim of the present study was to determine the dominance pattern of coronary arteries in normal subjects undergoing coronary angiography for various reasons.

Material and Methods: 100 coronary angiograms were taken from the database of cardiac catheterisation laboratory in department of cardiology, done on North Indian population aged 32-80 years of both the sexes and analysed. Invasive coronary angiography was performed by either femoral or radial route using radio-opaque dye and cineangiograms were taken in different views. Using Schlesinger's criteria, the coronary dominance was determined.

Results: In 60% of the subjects, right dominance was noted. In 26% of the subjects, left dominance was noted. Balanced dominance was noted in 14% of the subjects studied.

Conclusion: In our present study, right coronary dominance was found higher than left dominance and co-dominance. Moreover, the males showed higher incidence of both right and left coronary dominance than females. However, insignificant association was found between gender and coronary dominance in our study ($p>0.05$). Knowledge of dominant pattern is significant for determining the prognosis of coronary artery disease. Hence this study was done, which would be helpful not only to the cardiologist's and surgeons but would also be of direct relavance to anatomist's.

30. Vertical Cup To Disc Ratio And Their Correlation With Sex And Age In North Indian Population.

Santosh Kumar Barnwal, A.K Singh, Shipra Gupta, Neha Goel, Himani Singh, Akanksha Singh.

Introduction: The morphological characteristics of the optic disc are routinely assessed to screen, diagnose, and monitor disease in conditions such as glaucoma and optic neuropathies. among various optic disc features, the vertical cup to disc ratio (VCDR) is the most commonly used clinical measurement, particularly for the diagnosis of glaucoma. So the present work is undertaken to study the Vertical cup to disc ratio and their correlation with age and sex in North Indian population.

Aim and objectives: In this work we have measured vertical optic cup to disc ratio (VCDR) and described its distribution in males and females in North Indian population.

Material and Methods: we have examined the eye of 97 normal subjects of various age groups underwent Optic disc imaging with spectral domain optical coherence tomography and vertical cup to disc ratio were measured. The effect of age and sex on vertical cup to disc ratio were studied.

Results: The mean (SD) vertical cup to disc ratio was 0.47 (0.13) in both the eyes. Also it was observed that the vertical cup to disc ratio increases after age of 30 ($P < .01$) and was greater in males than females (0.50 vs 0.44; $P < .01$).

Conclusion: Greater vertical cup to disc ratio (VCDR) was observed in males than females and also greater vertical cup to disc ratio after age of 30.

31. PREVALENCE OF PNEUMATIZED CRISTA GALLI AND ITS CLINICAL SIGNIFICANCE : A COMPUTED TOMOGRAPHIC STUDY.

Sharma Shalini*, Tiwari Gopal**

Background and Purpose- The crista galli is a midline structure that is present above the cribriform plate and embryologically derived from ethmoid bone. It is one among the few structures in the paranasal region that undergoes pneumatization.The crista galli is an endoscopic surgical landmark in frontal sinus approach and pituitary surgery. The purpose of our study was to analyze the prevalence of pneumatization of crista galli and its clinical significance..

Materials and methods- Computed tomographic (CT) images of sinonasal region (100 subjects; 62 males and 38 females) were obtained from the Department of Radiodiagnosis, King George's medical University, Lucknow, from the period Aug 2013 to July 2014. The CT scans were analyzed to determine the prevalence of pneumatization of crista galli and its relationship with gender.

Results- Out of total 100 subjects studied, pneumatized crista galli was found in 12% of study population which included proportionately higher number of female subjects (8%) than male subjects (4%). This difference was statistically insignificant (p=0.585).

Conclusion-This study concludes that the presence of pneumatized crista galli and its sinus connections need to be reported by radiologist. Also the otolaryngologists should try to identify and consider clearing the pathological crista during endoscopic marsupialization of sinuses.

Keywords- Crista galli,pneumatization,computed tomographic images.

32. Current trends in usage of internet among medical students

Rani Anita, Chopra J and Manik P

Aim and Objective: Internet technology has revolutionized every facet of today's civilization. Access to internet through smart phones has added an additional spurt in its momentum. Future belongs to era of e- learning. The present survey was done to evaluate existing scenario regarding practices in using internet among first year MBBS students.

Material and Methods: A questionnaire based survey was conducted on first year MBBS students of year 2015-16. 146 students participated in the study. Students were enquired to discern the purposes for which they use internet. Questionnaire was designed enlisting areas of internet usage like official communication, shopping, academics, socialization, entertainment etc and the students were asked to select the appropriate choices. Every category of internet use was calculated for its frequency and percentage for each choice was calculated.

Results and Conclusion: In present scenario our maximum students (73%) use internet for socializing. Next most popular use (56%) is for communication through e mailing followed by surfing (50%) and downloading books (47%). The study concludes that currently internet is not much popular as a learning tool among medicos.

33. Impact of Use of Audio-Visual Aid For Dissection Hall Teaching On Students: A Quantitative Study

Chopra J, Rani A, Verma Rk, Tomar S, Manik P

Aims and Objectives: Dissection hall teaching, which is a backbone of teaching and learning Anatomy, is suffering a lot due to dearth of faculty members as MCI has reduced the number of teachers required per hundred students. In lack of proper guidance and clear instructions students are gradually losing interest in dissection, therefore we thought of using audio-visual aid as an adjunct for Dissection hall teaching.

Material and Methods: 250 MBBS students of 2015-16 batch were taught lower limb in dissection hall in traditional way. While teaching neuroanatomy, 4 classes were taken by A-V aid in which features of brain were shown to the whole batch. After completion of each part, an OSPE was conducted of 50 marks. To observe the impact of this teaching on the performance of students, marks of both the tests were compared.

Results and Conclusion: The average score obtained by students in lower limb was 21.16±7.16 whereas in neuroanatomy it was 26.36±8.85 and the difference was statistically significant. The percentage

of students who secured more than 50% marks increased from 31.07% to 53.79%. The results show that the teaching intervention by using A-V aid as an adjunct was very effective in enhancing the understanding of the subject.

34. Effectiveness Of Basic Clinical Skill Training Programme On Knowledge Of First Year MBBS Students

Aim: The effectiveness of clinical skill laboratory training is widely recognized. Despite the fact that bedside teaching has always been deemed an indispensable and valuable method of teaching, its role is declining in medical schools.

Practicing on real patients is a problematic ethical issue, particularly where it involves the training of invasive procedures. Basic clinical skills acquisition on wards occurs in a rather "haphazard" fashion and frequencies of performance of such skills differ widely among students. Thus, the aim of the study is to bridge the gap between expectations and actual learning experiences on the wards and to see the effectiveness of the "proficiency-based" teaching interventions of skills training sessions using simulators on first year MBBS students.

Material and methods: Study has been carried out on 90 students. This research study used a pre-test/ post-test design with three measurement times to evaluate the gain in knowledge and competency in intramuscular (IM) injection skill in Deltoid region in Skill Lab settings on manikins. Subjects underwent practice sessions also. A task-specific checklist was used to collect data at all three time points. Evaluation system was mainly MCQs and OSCE based on checklists prepared for the scenarios.

Results: The mean and S.D. for pre-test scores was 8.60±2.280 and the same value for post-test scores was 14.24±0.933. The p-value is highly significant showing a clear cut benefit to the students.

Conclusion: A significant gain in knowledge was observed.

34. Anatomy and Medical Education

Syed Hasan Hyder Zaidi

Aims of the study

The study was undertaken to review the current Anatomy teaching methodology in light of MCIs medical education technology guidelines and to make the role of Anatomy more relevant to match and fit the fast changing needs of rapidly changing medical education of quality global standards and to suggest the necessary improvements for making it more compatible and relevant.

Materials and methods

A brief review of both the MET guidelines about Medical education and current Anatomy scenario was studied using multiple resources of review of literature and compared for compatibilities and contradictions to draw significant conclusions for making Anatomy role more relevant to meet the demands in fast changing quality medical education for providing much better health care of global standards

Results and Conclusion

Considerable mismatch and contradictions were detected in the present study. Significant conclusions were drawn for improvement in Anatomy curriculum and teaching methodology to meet the needs of quality medical education of global standards.

The findings are discussed.

36. A Molecular Study Of Tmprss6 *Gene* Snp Rs855791 Polymorphism In Anaemic Mothers

Kiran Kumar P[1], R. K Srivastava[2]

INTRODUCTION: The incidence of iron deficiency anaemia during pregnancy is high in India where iron supplementation is a regular practice. The response to oral iron is influenced by the several factors such as age, gravida, socioeconomic status and genetic factor. The TMPRSS6 *gene* has a major role in the iron absorption from the intestine.

AIMS OF THE STUDY: To see the correlation of TMPRSS6 gene SNP rs855791 polymorphism with anaemia in pregnant women.

MATERIALS AND METHODS: Present study has been conducted to assess TMPRSS6 *gene* SNP rs855791 polymorphism in 40 mothers with microcytic hypochromic anaemia and 40 non-anaemic age matched mothers (control) attending and admitted in Department of Obs & Gynae, Rama Medical College, Hospital & Research centre, Mandhana, Kanpur. 5ml of venous blood was

collected in EDTA vacutainers and processed on simple PCR for TMPRSS6 gene SNP rs855791 polymorphism.

RESULTS AND CONCLUSION: Previous studies have shown that mutations in the TMPRSS6 *gene* lead to iron refractory iron deficiency anaemia. The results and conclusion will be presented and discussed in the conference.

37. Study Of Cyp7a1 *Gene* Polymorphism In Cholelithiasis Patients In Kanpur

Mansi Shukla[1], R.K Srivastava[2]

INTRODUCTION: Studies have shown that CYP7A1 *gene* polymorphism is involved in lipid metabolism and bile acids & bile salt synthesis. It is a rate limiting enzyme of bile salt synthesis and thus regulates the gall stone formation.

AIMS OF THE STUDY: An attempt has been made to correlate CYP7A1 *gene* with gender, lipid profile and Anthropometric Measurements (Waist Circumference, Hip Circumference, Waist/Hip Ratio, Mid arm Circumference).

MATERIALS AND METHODS: The present study has been done in patients of Cholelithiasis attending the OPD of Rama Medical College hospital from January 2015 to July 2016. Age, Sex, History of contraceptive pills and Family history of Cholelithiais was recorded. Lipid profile, Anthropometric Measurement, DNA analysis and CYP7A1 *gene* polymorphism was studied in all the patients by simple PCR technique.

RESULTS AND CONCLUSION: Study results regarding CYP7A1 *gene* polymorphism and its association with other parameters will be presented and discussed in the conference.

38. Early Detection Of Pre-malignant Lesions of the Oral Cavity Using Micronucleus Assay.

AIMS OF THE STUDY

To evaluate the genotoxic risk in the buccal mucosa of tobacco chewers using cytogenetic markers like micronuclei.

An assessment of its role in neoplastic progression can help in the early detection of precancerous lesions.

MATERIAL AND METHOD

In a case contolled study, 50 subjects were recruited with oral lesions after taking an informed consent. Using exfoliative cytology, buccal smears were prepared. The smears were stained with Papanicolou stain and Feulgan Fast. Two smears per subject were prepared so that a minimum of 50 cells per subject could be evaluated. An assessment of the micronuclei was done using the Tolbert's criteria.

RESULTS

Micronuclei were found to be much higher in subjects with premalignant lesions as compared to subjects without any lesion in the oral cavity.

CONCLUSION

Exfoliative cytology can serve as an effective tool for the early detection of oral premalignant lesions using micronucleus assay in mass screening programmes. An early diagnosis of premalignant lesions will help in reducing morbidity and moratality rates caused by oral cancerous lesions.

39. A Molecular Analysis Of Angiotensin Converting Enzyme (Ace) *Gene* Insertion/Deletion (I/D) Polymorphism In Toxaemia Of Pregnancy And Normotensive Mothers

T.Praveen[1], R. K. Srivastava[2]

INTRODUCTION: Toxaemia of pregnancy is diagnosed in 6-10% of all deliveries and is associated with 22% of all perinatal foetal deaths and 30% of all maternal death. Angiotensin Converting Enzyme (ACE) plays a vital role in the Renin Aldosterone System (RAS) which regulates blood pressure by converting Angiotensin I into a powerful vasoconstrictor Angiotensin II.

AIMS OF THE STUDY: To see the ACE *gene* I/D polymorphism in cases of toxaemia of pregnancy and normotensive mothers.

MATERIALS AND METHODS: The present study has been done in 50 cases of Toxaemia of Pregnancy and 50 control (Normotensive) pregnant women admitted in Department of Obs and Gynae, Rama Medical College. 5ml venous blood was collected in EDTA vials and processed for ACE gene I/D polymorphism on simple polymerase chain reaction (PCR).

RESULTS AND CONCLUSION: A Deletion polymorphism (D allele) has been reported to be associated with elevated ACE activity leading to Hypertension. Study results will be presented and discussed in the conference.

40. Morphometric Analysis of Mental Foramen and Mandibular Canal in Dry Human Mandibles

Manisha Pandey, , Sushma Tomar, Arivnd Pankaj, Anita Rani, P.K. Sharma

Introduction: Mental foramen (MF) is important anatomical landmark to facilitate surgical, local anaesthetic and other invasive procedures for dental surgeons performing peri-apical surgery in the mental region of mandible.. Mandibular canal is a canal within the mandible that is beginning in mandibular foramen on medial surface of ascending mandibular ramus. It runs obliquely downward and forward in the ramus, and then horizontally forward in the body till mental foramen. It carries inferior alveolar neurovascular bundle **Aims and objectives:** To study morphological and morphometric variations of mental foramen and mandibular canal in human mandibles. **Material and method:** 30 dried adult human mandibles with intact alveolar margin were used for the study. Position and shape of mental foramen observed and morphometric parameters were recorded using Vernier calliper. Length of mandibular canal was also measured. **Results:** The most common position of MF as related to the lower set of teeth was; below second premolar, i.e.73.3% cases on the right and 66.7 % cases on the left side. The mean distance between symphysis mentii and anterior margin of MF was 24.38 mm and 24.04 mm, on the right and left side respectively. Mean distance between posterior margin of MF and posterior border of ramus was 63.6 mm on the right side and 63.49 mm on the left side. The mean length of mandibular canal was 52.34 mm on right side and 52.00 mm on left side. **Conclusion:** This study provides useful information concerning morphology of mental foramen and mandibular canal. The knowledge of course of mandibular canal is of great importance in certain oral surgical interventions i.e preprosthetic operations and insertion of implants.

41. Squatting Facet: A Pressure Effect on North Indian Talus

Nishtha Singh[1], Alok K. Singh[2], Ranjeet Kumar[3], Navneet S. Chauhan[4], Divya Hooda[1], Arjun Rana[1]

Aims of study: Anatomical variations of the skeleton provide information on daily activities, living conditions, cultural behaviour and health problems of any society. Squatting is a good example of such behaviour/function producing skeletal markers due to remodelling, on the bones of lower limb by putting strong pressure and traction forces on the knee and ankle joints. Usually Indians assume squatting position conveniently and it is a part of their regular behaviour. The occurrence of talar modifications was therefore investigated in adult Indian talus.

Material and Method: An observational analytical study was designed to observe anatomical variations in 616 dry, macerated human tali of both sides in north Indian population. Differences in the form and extent of squatting facet, trochlear extensions and articular (malleolar) extensions were noted. The part of medial articular facet extending on the neck of the talus with respect to the total length of medial articular facet was measured with the help of Vernier caliper accurate up to 0.02 mm**.** All data were recorded and analyzed statistically.

Results: The medial surface of the neck of talus showed forward extension of the medial articular surface (articular extension), and superior surface showed trochlear extensions (medial, lateral and central) and squatting facets. A much more pronounced forward prolongation of medial articular surface has been found to be present in the north Indian talus in this series, suggesting that, not only the squatting posture and habitual sartorial posture (palthi position/ tailor position) but the prevalence of walking for long distances may be responsible for this.

Conclusion: Anatomical variations of the neck of the talus (squatting facets) and its trochlear-malleolar surfaces (trochlear extensions) can be of help in pathologies of foot for reconstruction and rehabilitation procedures. It will also provide ethnic data for anthropologists and forensic experts about talar variations and would be of direct relevance in anatomy teaching.

42. First Pedicle of Sacrum – A Morphometric Study& Its Clinical Sinificance

Singh. Pankaj,Haque M, Gupta Prerna

Introduction- Anatomy of the pedicle diameters of first sacral vertebra is important and crucial for safe placement of the screw fixation in S1 segment of sacrum .

Aims & Objectives- To analyse the morphometrical parameters of the first pedical of Sacrum in north Indian population, which is significant during orthopedics surgery like Sacral Screw Fixation.

Material & Methods- 50 human dry sacrum were included in this study. These specimens were obtained from Department of Anatomy. All parameters were measured by digital varniers calipers.

Results and observations- Significant differences in Sacral height, Sacral breadht & Sacral canal width were observed.

Conclusion- Detailed knowledge of particular dimensions is important to lumbosacral fusion instrumentation decompression & sacral pedical screw fixation.

43. Morphological And Morphometric Study Of Suprascapular Notch

Pratibha Dwivedi, Aruna Arya, Archana Rani, R.K Verma, P.K Sharma

Aims of the study: The suprascapular notch is a semicircular notch located in the superiorborder of scapula just adjacent to the base of coracoid process. This suprascapular notch is converted into suprascapular foramen by the superior transverse scapular ligament. The suprascapular artery passes above the ligament and the suprascapular nerve passes below the ligament through suprascapular foramen. The anatomical variation in suprascapular notch which include variation in the shape, partial or complete ossification of superior transverse scapular ligaments is recognised as one of the causes of suprascapular nerve entrapment. The aim of present study was to obtain morphological data of the suprascapular notch and to classify the notch according to its shape.

Materials and Methods: The present study was conducted on 150 dry adult scapulae of unknown age and sex in the Department of Anatomy, KGMU, Lucknow. In this study, shape of suprascapular notch was seen and its dimensions were recorded with the help of Vernier calliper.

Results: In the present study the superior transverse diameter, inferior transverse diameter and the depth of the suprascapular notch were measured. The suprascapular notch were classified on the basis of gross appearance of the suprascapular notch as U shaped (59%), V shaped (8%), J shaped (11%), absent notch (20%), complete ossification of suprascapular notch (2%).

Conclusion: The knowledge of classification and the anatomical variations of suprascapular notch helps the clinician to define easily and quickly the type of notch and to correlate suprascapular nerve entrapment with a specific type of notch.

44. A Study of Supratrochlear Foramen of Humerus in Indian Population Sample.

Dr. Preeti Agarwal, Dr.S.H.H.Zaidi

Rohilkhand medical college & Hospital, Bareilly

Aim of Study: This study is to know the incidence of supratrochlear foramen in 38 Humans Bones in Indian population sample in light of available literature and to draw clinical, social & regional significance if any.

Materials & Methods: - 38 Humans of museum of Anatomy Department, Rohilkhand Medical College Bareilly, U.P. India were shidied to see the incidence of supratrochlear foramen Anatomy in Indian Population sample.

Results:- The Supratrochlear foramen Anomaly was Observed in 7 humerus (18.4%)

Conclusion:-The findings are of considerable Clinical , racial and regional Significance and are discussed.

45. Study Of Foramen Tympanicum With Its Clinical Implication In North Indian Crania

Prerna Gupta, Shailendra Singh, Muktyaz Hussein, Pankaj Singh

Aims and Objectives: Foramen Tympanicum also known as Foramen Huschka is present in the Anteroinferior wall of external auditory canal after 5 years of age. This study was undertaken to study the incidence, sex, sides and shape of Foramen Tympanicum.

Material and Methods: This study was done on 100 dry adult north Indian crania in the anatomy department of G.S.V.M. Medical College, Kanpur and Integral Institute of Medical Sciences and Research , Lucknow.

Observation and Results: Out of 100 skulls studied, foramen tympanicum was observed on 18 skulls (26 sides). The incidence of foramen tympanicum was found in 13% skulls and it was more in females as compared to males. The most common shape of foramen was found to be irregular.

Conclusion: The Foramen tympanicum has anatomical significance and its knowlwdge is also important to ENT as well as maxillofacial surgeons. It can be involved in different abnormalities of external auditory canal and can result in various otological complications like salivary otorrhoea.

46. MORPHOMETRIC STUDY OF FORAMEN MAGNUM IN INDIAN DRY SKULLS

Saxena Priya*,Mishra Raj Suniti**, Singh Raveena***, Jaiswal Namrata****

AIMS AND OBJECTIVE: This study is aimed to assess the anteroposterior,transverse diameters of foramen magnum and variation in its shape.The knowledge of diameters of foramen magnum are needed to determine radiological malformations (Arnold Chiari's syndrome) and prior to cutting off of foramen magnum or posterior cranial fossa lesions.The shape and morphological variations of foramen magnum are important in neurological interpretation.

METHOD: The present study includes 50 dry intact adult fully ossified skulls from the Museum of Department of Anatomy,GSVM Medical College,Kanpur.All the measurements were done by Vernier Calliper.

RESULT: The mean anteroposterior diameter was found to be 33.90mm and mean transverse diameter was found to be 27.82mm. The various shapes of foramen magnum observed in our study are-hexagonal shaped foramen magnum in 22%,pentagonal shaped in 18%,tetragonal in 18%,egg shaped in 16%,round shaped in 14% and oval shaped in 12%.Data was obtained and statistically analyzed

0CONCLUSION: Knowledge of dimensions of foramen magnum are important for neurosurgeons,radiologist as well as anthropologists. Dimensions of foramen magnum become clinically as well as surgically important because these vital structures may compress in cases of foramen magnum herniation, foramen magnum meningiomas and foramen magnum achondroplasia.The expansion of transverse diameter is seen in Arnold Chiari syndrome. Thus knowledge of foramen magnum diameter is needed to be determined.

47. Morphology And Variations In Atlas Vertebrae In Lucknow Region: An Osteological Study

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Aims of the study: First cervical vertebra (atlas) supports the skull. It is unique in that it lacks a body and is composed of anterior and posterior arches with laterally projecting transverse processes. Anatomy of atlas exhibits extensive variability in morphology. Aim of this study is to observe the morphology and variations of atlas.

Materials and Methods: 100 atlas vertebrae were studied in the Department of Anatomy, King George's Medical University, U.P, Lucknow. Vertebrae were examined to look for normal morphology as well as for any variations. Presence of any accessory foramina, shape of the superior and inferior articular facets, presence of constrictions and grooves in the superior articular facets and their tendency of separation were observed. Deficiency in posterior arch and variations in the posterior tubercles were also noted.

Observation and Result: Foramen transversarium was found present in all the specimens. Accessory foramina were present in 22% and Unfused foramen transversarium was found in 1%of specimens.Superior articular facet showed various variations in its shape while the inferior articular facet was found to be consistent in its morphology in all the specimens.Dumb- bell shaped superior articular facet was observed in 67% of specimens. Constrictions and grooves were observed in 73% and 53% of the specimens respectively. Posterior archvariations were noted in 12% of the specimens.

Conclusion: The knowledge of these variations must be known to orthopedic and neurosurgeons to avoid vertebral artery and spinal cord injuries which may lead to various neurological symptoms.

48. Variations of Hepatic Arterial System using Multidetector Contrast Enhanced Computed Tomography

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Aim of Study: The aim of this study was to determine the prevalence of normal and variant hepatic arteries supplying the liver using routine abdominal multidetector CECT and their clinical implications.

Material and Methods: Abdominal CECT scans of 50 subjects, who underwent routine contrast enhanced abdominal CT examinations with a 64 slice MDCT scanner were evaluated. The study subjects included 29 males and 21 females. Two observers evaluated both thin axial sections and 3D maximum intensity projection and volume rendered images for the anatomy of hepatic arteries supplying the liver.

Result: Normal pattern where the right and left hepatic arteries originated from Proper or Common Hepatic arteries was seen in majority of study subjects (72%). Variant hepatic arterial pattern (Replaced / Accessory RHA or LHA) was seen in 28% subjects. Variant Right hepatic arteries were seen in 16% whereas left hepatic artery variations were found in 20% cases. Replaced arteries were found in higher proportion of subjects (24%) as compared to presence of accessory arteries (12%). Prevalence of variation was almost equal among male and female subjects.

Conclusion: The right and left hepatic arteries are subject to frequent variations in their origin. Left hepatic artery variations are relatively more common than that of Right hepatic artery. There is an almost equal prevalence of variations amongst male and female subjects. The knowledge of variations is important for deciding the most appropriate choice regarding surgical or non- surgical therapy.

49. PDA (Posterior Descending Artery) & Coronary Dominance- A MDCT Coronary Angiographic Analysis Of Anatomic Variations And Clinical Importance

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Abstract-The aim of this study was to assess the incidence of anatomic variants of origin and termination of posterior descending artery (PDA) and to determine the type of coronary dominance in North Indian population. This prospective study was carried out on 50 routine subjects of different age groups who came to the Department of Radiodiagnosis, King George Medical University U.P., Lucknow in the year 2010- 2011 with known or suspected Coronary artery disease. All the cases were investigated on a 64 slice MDCT scanner, using retrospective ECG gating. Endeavour was made to determine the incidence of site of origin and termination of PDA as well as to determine the type of coronary dominance. PDA arose from RCA in 39 (78%) cases and from LCX artery in 11(22%) cases**.** The PDA was found to terminate in the upper 1/4 of posterior inter-ventricular groove (PIVG) in 18 (36%) cases, in upper 1/2 of PIVG in 19 (38%) cases, in upper 3/4 of PIVG in 10 (20%) cases and at the apex of the heart in 1 (2%) case. None of the female had termination of PDA at the apex. Termination of PDA could not be determined in 2 (4%) cases.*Right dominance* was seen in 36 (72%) cases, left dominance in 11 (22%) cases.and co-dominance in 3 (6%) cases. None of the female had co-dominance. The incidence of left coronary dominance was more in females, it was approximately twice the incidence found in males. Posterior descending artery most commonly terminated after traversing the upper half of posterior inter-ventricular groove.

50. Ultrasonographic Mesurement Of Common Bile Duct Diameter And Its Correlation With Age

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Aim of the study: Normal diameter of common bile duct as measured by ultrasonography is essential for diagnosis of dilated bile duct and choosing an appropriate stent for implantation. The present ultrasonographic study was undertaken to measure the diameter of common bile duct and to correlate it with age. **Materials & Methods:** Two hundred and fifty-six patients of age range of 20-80 years, were divided into three different age groups- 20-40 years (Group-A), 41-60 years (Group-B) and 61-80 years (Group-C). The diameter of common bile duct was measured at proximal, middle and distal parts. **Results:** The mean diameter at proximal part is 3.54±1.22mm in Group-A, 4.38±1.68mm in Group-B and 4.57±1.47mm in Group-C. The mean diameter at middle part is 4.61±1.55mm in Group-A, 5.57±1.97mm in Group-B and **5.72**±1.70mm in Group-C. The corresponding values at distal level are 3.49±1.19mm in Group A, 4.32±1.66mm in Group B, and 4.43±1.45mm in Group – C respectively. **Conclusion:** On the basis of these measurements there was statistically significant difference at all three levels between Group-A and Group- B. The values when compared between Group-B and Group-C were not significant though the diameter was increased with age.

51. Effect of Experimentally Induced Diabetes Mellitus in the Epididymis of Rats.

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Introduction: Recently, diabetes mellitus has become a potential cause of male infertility. Knowledge regarding how diabetes mellitus interferes the sperm quality and results in infertility needs the detail microscopic study of epididymis in diabetic condition. The newly produced immature sperm, which enter the epididymis from the testis, mature during their passage through the duct of epididymis, acquiring motility and the ability to fertilize an oocyte. In addition, the epididymis concentrates the sperm, phagocyte the defective sperm and secretes sialic acid, glycerolphosphoryl choline which plays a role in maturation of spermatozoa. Since, epididymis is a reservoir of sperms, any alteration in the function of epididymis due to prolonged hyperglycemia may have a dramatic consequence on sperms, leading to infertility. So, the present topic was undertaken to study the effect of diabetes mellitus in the epididymis and sperms of rats.

Aim and Objectives: To study the histological architecture in the epididymis of rats and to analyze the sperm morphology, motility and count in diabetic and non diabetic rats.

Materials and Methods: A total of sixteen adult male Wistar rats weighing 200-250 grams were included in this study. The rats were divided into two groups: control and diabetic groups. Diabetes mellitus was induced in the rat by intraperitoneal injection of Streptozotocin. The rats were sacrificed after six months and the dissection was done to take out the epididymis. The histopathological changes in the epididymis and the sperms taken from the epididymis were examined following standard methods.

Results: The microscopic study of epididymis of diabetic rats showed the thickening of basement membrane, increase in the connective tissue and disruption of the epithelium of epididymis. The concentration of the sperm in the lumen of the epididymis of diabetic rat is less when compared with the control group. The motility and the number of sperms decrease significantly ($p < 0.05$) in diabetic group of rats when compared to control rats. There was increase in the abnormal morphology of the sperm in diabetic group ($p < 0.05$) than the control group.

Conclusion: The present study revealed major damages in the structure of epididymis and altered sperm quality and quantity under the influence of long term diabetes.

52. Liver Pathogenicity in Cigarette Smoke Exposed and Non Smoke Tobacco Induced Adult *Swiss Albino* Mice

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Aim: The liver is one of the largest organ of the body. Prolong exposure of cigarette smoke and other tobacco products induced toxicity on liver tissue. This study aimed at the effects on the liver of cigarette smoke exposed and non smoke tobacco induced.

Materials and Methods: Eighteen male mice was taken for the experiment, each group contained six mice. Group A were exposed cigarette smoke the in inhalation chamber for forty five days, Group B were treated with gutka for fourteen days through oral route and Group C were control provided tap water with standard diet. At the end of experiment mice were sacrificed, dissected, proceed for histopathology of the liver.

Results and conclusion: In the present study, it was observed that the cigarette smoke exposed, tobacco induced mice that body weight body and liver weight reduction, and hemorrhagic patches were reported in gross in comparison to control group mice on liver surface Histopathological observations were found that the cigarette exposed group the hepatocytes of liver showed more fatty accumulation, large area of hepatic lobule occupied within vacuolar degeneration, haemorrhage between hepatic cords in addition to the congestion of the central veins and sinusoids and mitotic division of hepatocyte in different cigarette smoke groups. Present study concluded that cigarette smoke and tobacco are chemo toxic to the liver which causes physiological alterations and histotoxic leading to pathogenicity the liver in prolonged use.

53. Histological Alterations in the Dentate Gyrus of Male Albino Rats Exposed to Pyrethroid Based Mosquito Vaporizers and Protective Role of Turmeric

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Aim & Objectives: Pyrethroid based mosquito vaporizers are commonly used as personal protective measure to avoid mosquito borne diseases. These synthetic pyrethroid class of insecticides are well known for their neurotoxic effects on different brain areas. The dentate gyrus is an integral portion of the larger functional brain system called the hippocampal formation. Input to the dentate gyrus via perforant path, which is source of sensory information that the hippocampal formation uses to carry out its functions. So it is reasonable to consider the dentate gyrus as the first step in the processing of information that ultimately leads to the production of episodic memories. Present study was carried out to investigate the effect of subchronic whole body inhalation of mosquito vaporizer on histology of dentate gyrus and protective role of turmeric. The results were compared with control group.

Materials and Methods: A total of eighteen male albino wistar rats were used for the study. They were randomly divided into group I, II and III, each group contained six rats. Group II animals were exposed to mosquito vaporizer for eight hours daily for 90 days and group III animals received turmeric per orally along with exposure. Rats were sacrificed and cerebrum was processed from half of the animals for histological assessment.

Results: Histological examintion of the dentate gyrus showed marked neurotoxicity in exposed group rats. This toxicity was less in turmeric treated group.

Conclusion: The assessment suggests that inhalation of pyrethroid based mosquito vaporizer fumes have neurotoxic effects which may be avoided to some extent by turmeric.

54. Morphometric Analysis Of Fourth Ventricle Indices With Respect To Age, Gender And Cerebrum Size – A Study On Head CT Scans

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Aim: To find range of fourth ventricle indices, their variation with age and gender and to correlate

these indices with the cerebrum dimensions in apparently normal patients . **Material and methods** : With the Institutional ethical committee clearance, soft copies of head CT scans of hundred patients (50 males, mean age 33.77+/-15.06 yrs; and 50 females, mean age 36.22 +/- 11.4 yrs) were subjected to morphometric analysis of fourth ventricle's length (AP-4) and width (W-4) using dicom image software. Mean, standard deviation, ranges and 95% confidence intervals were calculated . Two sample independent student t –test, Pearson's correlation coefficient and Regression analysis were applied to find the gender variation, correlation with diameters of cerebrum and correlation with age respectively at 0.05 significance level. The study was done as a part of PhD project by 1st author under the supervision of 2nd, 3rd and 4th authors. **Results :** Mean AP-4 was 7.24 +/- 2.18 mm with 95% CI being 6.81 to 7.67 mm. Mean W-4 was 13.70+/- 2.26 mm with 95% CI being 13.25 to 15.15 mm. Width showed negative correlation with anteroposterior diameter (r= - 0.08, p=0.54) but positive correlation with transverse diameter of cerebrum (r= 0.25, p= 0.08) . Length showed almost nil correlation with age whereas width showed negative correlation with age (t stat = -1.68, p = 0.09) . **Conclusion :**Diameters of cerebrum and 4th ventricle width were significantly higher in males. 4th ventricle width showed maximum correlation with transverse diameter of cerebrum. 4th ventricle length does not depend upon age but width decreases with age.

Key Words : 4th ventricle indices, AP-4, W-4 , cerebrum diameters

55. Morphological And Morphometric Study Of The Nasal Opening Of Nasolacrimal Duct: A Cadaveric Studys

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Aims of the study: The nasolacrimal apparatus is associated with the lateral nasal wall and may be approached using an endoscopic technique. Recent developments in ophthalmology such as balloon dilation, stent implantation, laser therapy and endoscopy of lacrimal drainage system raise the need for a detailed anatomical knowledge of this system. It is also important for formulations of principals and techniques in the management of lacrimal problems. This study was done to describe in detail the gross anatomy of the nasolacrimal orifice in relation to various landmarks.

Materials and Methods: Twenty sagittal sections of head of adult cadavers were obtained from the Department of Anatomy, King George's Medical University, Lucknow. The nasal septum was removed and lateral wall of nasal cavity was exposed and examined. The opening of nasolacrimal duct (NLD) was seen and subjected to anatomical observations for shape, site, opening type. The parameters measured were the distance from nasolacrimal duct orifice to the anterior end of inferior nasal concha (AIC), Anterior nasal spine, palate was made.

Results: In the present study the variation in opening of the nasolacrimal duct in the inferior meatus. In 80% of cases it opened in the form of sulcus, In 20% of cases it opened in the form of fissure.on the basis of location the opening of nasolacrimal duct located at anterior one third below the attachment of inferior concha in 65% of cases, at middle third in 20% of cases, anterior of posterior third in15% of cases.

Conclusion: The knowledge of the morphology and morphometry of the lacrimal drainage system helps the ophthalmologists to plan intervention on the lacrimal drainage system and avoid unnecessary manipulations and also minimizing the risk of injury during intra-nasal surgery.

56. Reduced Maternal Cotyledons In Placenta Of Pih

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Background: - The placenta reflect the status of maternal hypertension as it is mirror of maternal and fetal health.

Aim: - The aim of this original research article is to present status of maternal cotyledons in placenta of Pregnancy induced hypertensive women compare to Normotensive women.

Material & Method: - This study was done in Rama Medical College Kanpur. Placentas from forty cases of PIH and forty cases of normotensive women delivered collected and studied.

Result:-Macroscopic study revealed that compare to normotensive women's placenta, PIH women's have lower number of maternal cotyledons.

Conclusion: - Hypertension during the pregnancy lead to reduced number of maternal cotyledons.

57. Cadaveric Study of Perforators of Radial Artery

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AIMS: Now a days reconstructive and plastic surgeons are covering the soft tissue defects in the hand and wrist by using radial forearm perforator flaps based on cutaneous radial perforators. These radial cutaneous perforators rises directly from radial artery or from its branches and perforates the deep fascia supplying subcutaneous tissues and skin overlying the radial side of forearm. For attaining successful radial forearm perforator flaps it is mandatory for surgeons to have knowledge about anatomy of perforators of radial artery. So in this particular study we have delineated the radial artery and located its perforators from radial styloid process and measures their length from source artery.

MATERIAL AND METHODS: The study was undertaken in Department of Anatomy King George's Medical University, UP, Lucknow. 15 upper limbs of formalized cadavers were taken and brachial artery was dissected in cubital fossa followed by injecting methylene blue dye in it. After instilling dye skin over the radial side of forearm were dissected to delineate radial artery and its perforators in relation to radial styloid process.

RESULTS: Total of 119 perforators with an average of 8.0±1.0 number of perforators having mean length of 29±11 mm were found out of which 84 (70.6%) perforators were present proximal to radial styloid process with an average number of 7.6±1.0 perforators having mean length of 32±12mm and distally these perforators were located between brachioradialis muscle and flexor carpi radialis muscle while 35 (29.4%) perforators were present distal to radial styloid process with an average of 2.4±0.5 number of perforators having mean length of 21±4 mm.

CONCLUSION: Anatomical study of perforators of radial artery provide basis for development of radial forearm perforator flaps that are preferred and advantageous in covering soft tissue defects of hand and wrist.

58. Unilateral Malrotated Foetal Kidney – A Rare Congenital Anomaly

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Aims of the study-Anomalies of kidneys form a significant portion of congenital malformations. Anomalies may occur in number, position, shape, size and rotation of kidney. Structural positional and vascular anomalies are the most frequently reported. Rotational anomalies form a rare entity in kidney development having incidence of 1:1000 cases. **Material and methods**- Dissection of 70 normal human fetuses (31 female and 39 male) was done and gross study was done thoroughly. **Result**- Incidentally we found a male foetus having an incompletely rotated right kidney, with variations in the hilar anatomy and one accessory renal vein at the lower pole, while the left kidney was normal. The hilum of the right kidney was anteriorly faced and was close to the upper pole, with the ureter running on the anterior surface of the kidney. This was associated with variation in the arrangement of the structures at the hilum. Structure at the hilum from superior to inferior is renal vein, renal artery and ureter. **Conclusion-** The rotational anomaly assumes importance while performing percutaneous procedures in relation to the kidney, screening of donors, and also during interpretation of various

radiological diagnostic procedures related to the kidney.

Keywords: Renal hilar anatomy, Kidney rotational malformations, Vascular anomalies.

59. Normal And Variant Anatomy Of Vertebrobasilar System In Lucknow Region: A Dissection Study

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Aim & Objectives: The purpose of the study was to observe the normal and variant anatomy of intracranial part of vertebrobasilar system in dissected specimens.

Materials & Methods: Twelve (12) cadaveric brain specimens were studied in the Department of Anatomy of King George's Medical University, Lucknow. The diameter of both vertebral arteries (VA), basilar artery (BA)(at the point of confluence of vertebral arteries), P1 and P2 segment of Posterior cerebral artery (PCA) and posterior communicating artery (PCoA) ; length of basilar artery was measured.

Results: The mean diameter of right VA was 4.83±1.62mm, left VA 4.33±1.54mm, BA 6.5±1.38 mm, right P1 segment 3.08±1.32 mm, left P1 segment 2.91±1.11 mm, right P2 segment 3.66±1.37 mm, left P2 segment 3.33±1.31mm, right PCoA 1.16±1.29 mm and left PCoA 1.62±1.64 mm. Mean length of BA was 35.58±10.90mm. In 16.7% cases there was unilateral absence of VA. Dominance of one vertebral artery was observed in 50% cases out of which in 8.3% cases left dominance and in 41.7% cases right dominance was observed. Co dominance was noticed in 33.3%. Absence of PCoA was noted in 16.7% cases and fetal origin of PCA was seen in 41.7% cases in which only one was bilateral.

Conclusion: Present study shows a high percentage of variation in vertebrobasilar system even in small number of cases. The unfamiliarity with the common variations of the vertebrobasilar circulation may cause misinterpretation of the causes and results and lead to wrong management. The anatomical features and variations of the vertebrobasilar system must be well known for accuracy of the interpretation of the ischemic areas, diagnoses, endovascular interventions, and posterior cranial fossa surgeries.

60. RELEVANCE OF ANATOMY OF SUPERFICIAL VENOUS SYSTEM OF LOWER LIMB IN PATIENTS WITH VARICOSE VEINS

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BACKGROUND : In the era of minimal invasive surgery majority of patient with varicose vein are treated by endothermal ablation, it is always advisable to have a preoperative venous mapping to reduce the risk of recurrence. In a good number of cases one may have abnormal veins like duplication of great saphenous vein, small saphenous vein , giacomini vein, abnormal insertions of superficial vein into the deep systems.

AIM: The aim of the study was to see the variations in the superficial venous system of the lower limb.

MATERIALS AND METHODS : The superficial venous system of both the lower limb were dissected in three fresh cadavers(2 male and 1 female) and 15 embalmed human cadavers (12 males and 3 females) in Department of Forensic Medicine and Anatomy , IMS,BHU respectively. The anatomy of great saphenous vein and its relation with saphenous nerve was noted. Likewise the anatomy of small saphenous vein and its relation with sural nerve and tibial nerve was observed.

RESULTS: the great saphenous vein frequently ran intimately along the saphenous nerve in the leg region. On the other hand the distance between small saphenous vein wasa highly variable

CONCLUSION: During endovascular ablation of the great saphenous vein it is to kept in mind that not to approach below knee as saphenous nerve runs closely to the vein below the knee. In contrast the ablation of small saphenous vein should be done in proximal one third course as in distal two third sural nerve runs intimately with the vein.

61. Dermatoglyphic Study Of Finger Tip And Palmar Print Patterns Of Patients With Diabetic Retinopathy

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Professor & HOD

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Dermatoglyphics is the scientific study of fingerprints. It refers to the friction ridge formations which appear on the palms of the hands and soles of the feet. Characteristically, hair doesnot grow in this area. This ridging formations serve well to enhance contact and aids in prevention of slippage. Unusual dermatoglyphic patterns often relate to genetic disorders. Diabetes is a multifactorial metabolic disease. It can lead to various macro and microvascular complications. Factors determining diabetes in utero may influence dermatoglyhic patterns.

Aims Of The Study: The aim of the study was to identify the dermatoglyphic patterns in patients with diabetic retinopathy and to find the association between the dermatoglyphic pattern and diabetic retinopathy.

Material And Methods: Dermatoglyphic patterns of 25 subjects with type II diabetes with diabetic retinopathy coming to Jai Clinic & Diabetes Care Centre,Hardoi road Lucknow and ELMCH, Lucknow for treatment were taken. 25 subjects without diabetes were taken as contol. RESULTS: The data was analysed which showed various deviations in the digital prints in subjects with diabetic retinopathy from the dermatoglyphic characteristics of control group.

Conclusion: Dermatoglyphic patterns can be used as a marker together with metabolic, immunologic and genetic markers in predicting the outcome of disease and reducing its ill effects.

62. MORPHOMETRIC ANALYSIS OF UMBILICAL CORD IN NORMAL VS HYPERTENSIVE PREGNANCIES IN POPULATION OF LUCKNOW, UTTAR PRADESH

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Objective: The prime objective of the study is to compare and evaluate the morphological alteration in umbilical cord of normal and hypertensive pregnancies.

Methods: A total sample of 60 umbilical cord with placentae were collected for the study and various parameters like the length, diameter, site of insertion and the number of vessels were taken and compared between normal(group A) and gestational hypertension (group B) statistically.

Results: It was observed that, in group A we found the length of the umbilical cord, diameter of the cord and number of vessels to be31.4610.49, 1.36± 0.39, 3± 0.12 and in group B the values were 31.03± 10.94, 1.36±0.39, 2.95±0.25 respectively. No material variations were seen statistically in terms of length, diameter, site of insertions and the number of vessels between the two groups.

Conclusion: The study reveals that the morphological parameter of umbilical cord shows no significant changes in the dimension of the gestational hypertensive umbilical cords as compared to the controlled cases.

63. Different Shapes Of Tibial Menisci In Western Indian Population: A Cadaveric Study

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Institute: Mayo institute of medical sciences, Gadia , Barabanki.

Aims of the study: To study different shapes of menisci in cadavers.

Materials and methods: we included 50 formalin preserved, skeletally mature normal human cadaveric

knees of either sex in this study. Dissection was performed systematically in the dissection hall of Anatomy department and shapes of the tibial menisci were observed and findings were recorded in a data recording sheet.

Results: In present study, medial meniscus was found to be crescent shaped (10%), U shaped (72%), sickle shaped (16%) and Vshaped (2%). While, the lateral meniscus was subgrouped as C-shaped (96%) and U-shaped (4%).

Conclusion: No discoid medial or lateral meniscus was found in present study.

64. Study of Elongated Styloid Process in North Indian Population

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Objective: The aim of the present study was to analyze the elongated styloid process and determine the average length and width of it.The styloid process is a bony projection, located just anterior to the stylomastoid foramen. The styloid process lies between the internal and external carotid arteries, posterior to the tonsillar fossa and lateral to the pharyngeal wall.

Material & Methods: This study was carried out on 65 dry human skulls of unknown age and sex which were collected from osteology lab of Anatomy Department of K.G. Medical University, Lucknow, U.P. The length and width of right and left styloid process were measured by using digital caliper. Each skull was closely observed for presence of elongated styloid process.

Observation & Results: The length of smallest styloid process was 11.85 mm on the left side and 12.15 mm on the right side. The longest styloid process was 30.05 mm on the left side whereas 29.85 mm on the right side. The mean length of styloid process on left side was 22.28 mm whereas of right side was 21.93 mm. Unilateral elongated styloid process (>30 mm) was noted in two skulls. The length of elongated styloid process in one skull on left side was 44.94 mm whereas in another skull on right side was 41.24 mm. The mean length of styloid process of left side of both these skulls was 40.92 mm whereas of right side was 35.21 mm. Thickness of styloid process varied from 1mm to 4 mm on both sides.

Conclusion: The knowledge of styloid process may be beneficial to ENT surgeons, neurologists and radiologists in daily clinical practice for proper diagnosis and treatment of Eagle's syndrome.

65. STUDY OF FIRST RIB IN INDIAN POPULATION

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Aim Of Study: The present study was under taken to study the variations of 1st rib and to under stand the significance of such variations.

Material And Methods: Fifty first thoracic ribs obtained from the museum of the department of Rohilkhand Medical College & Hospital,Bareilly, Uttar Pradesh, India were studied to see any anomality and its incidence in Indian population sample and to draw clinical or other significance or such variations.

Results And Concluson: The findings are discussed and conclusions drawn.

66. To Study The Orbital Index Of Human Dry Skulls In North Indian Population.

Dr. Reena Gupta, Dr. Vasundhara Kulshrestha, Dr. Anshu Gupta, Dr. Shikky Garg & Dr. Anjali Gupta

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Introduction

The aim of the study was to investigate the orbital anthropometric variation in the normal population. Orbital Index is one of the most important anthropometric parameter. Index varies with races, regions with in the same race & period in evaluation. Anthropometric study of orbit is immence importance on account of its various implications in medical science ranging from ophthalmic surgery, maxillo facial surgery and neuro surgery. It is also helpful in plastic surgery (reconstructive surgery) and is used to treat congenital or post troumatic facial disfigurements successfully.

Material and Methods

The study was conducted on 50 dry Skulls i.e 100 orbits (Both Right & left orbit of skull was measured) in department of Anatomy, S.N Medical College Agra. The measurement was taken directly using digital vernier caliper. Orbital Index is calculated by measuring orbital height and orbital width in order to evaluate the orbital size & Shape.

Results

In my Study the mean orbital height is 24.08 mm, mean orbital width is 29.16 mm so the mean orbital Index is 82.57.

Conclusion

The finding of our study suggest that the study population belongs to microseme category.

Keywords

Orbital Index, Dry skull, Digital vernier caliper.

67. Morphological Study Of supra-scapular notch and Ossified Supra-Scapular Ligament In Eastern U.P Of India

Sajjad Jafar , Bindu Singh

Aim of the study:

Aim of the study was to determine the morphological variations of supra-scapular notch and causes of ossification of the supra-scapular ligament and its clinical significance.

Material And Methods:

98 dry scapulae were collected from department of Anatomy, BRD Medical College, Gorakhpur. The supra-scapular regions of all scapulae were analyzed .Scapulae were classified according to the shapes of supra-scapular notch. Complete or incomplete ossification of supra-scapular ligament was also studied. Photographs were taken by using a digital camera.

Result:

According to the shapes supra-scapular notch is classified into five groups:-

1- V Shaped notch 2-U Shaped (shallow) notch 3-U Shaped (deep) notch4-J Shaped Notch

5-Complete absence of Notch

In our study 2.04% were found to have complete ossification of supra-scapular ligament and 3.06% partial ossification of supra-scapular ligament .The measurement of the bony bridges which formed by the ossification of supra-scapular ligament are different in different scapula according to shape.

Conclusion:

The morphological knowledge of the supra-scapular notch and ossification of the supra-scapular ligament helpful for surgeons and clinicians dealing with supra-scapular nerve entrapment conditions

68. Topographic study of foramen ovale for surgical access to it through endonasal transmaxillary transpterygoid and percutaneous approach.

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Aims & Objective- Foramen ovale is an important foramen for neurosurgeons and used for percutaneous trigeminal rhizotomy in trigeminal neuralgia, transfacial fine needle aspiration technique in perineural spread of tumour, and electroencephalographic analysis. The present study deals with the distance of foramen ovale from vital anatomical landmarks of surgical significance for various approaches to it.

Material & Methods- The study was conducted on 50 dry human skulls of known sex, available in the museum of Anatomy Dept. in G.S.V.M. Medical College, Kanpur. The distance of foramen ovale from articular tubercle, the anterior root of zygomatic arch, posterior root of zygomatic arch, anterior nasal spine, base of lateral pterygoid plate and posterior wall of maxilla was measured on both sides. The data was statistically analysed.

Result- The mean distance of foramen ovale from articular tubercle on Zygomatic arch was 32.8 +/- 2.8 mm in males and 31.1 +/- 2.4 mm in females. The mean distance from anterior root of Zygomatic arch was 21.4 +/- 1.9 mm in males and 21.6 +/- 1.7 mm in females. Other parameters will be discussed in detail at conference.

Conclusion- There was no significant difference in measurements of various metric parameters between right and left sides of foramen ovale but significant difference was observed between male

and female dimensions. Thus the foramen ovale does not exhibit bilateral symmetry. The data is helpful for neurosurgical practices in the infratemporal area..

Keywords: articular tubercle; anterior nasal spine; lateral pterygoid plate; mandibular nerve; Zygomatic Arch.

69. Effect of Laterality on Morphometric Measurements of Calcaneum

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Aims of the study: As calcaneum is the most commonly fractured tarsal bone, so the knowledge of its morphometric features in different populations is imperative for doing external and internal fixation and also for designing prosthesis. Therefore the present study was conducted to measure the morphometric parameters of calcaneum in UP region.

Materials and methods: The study was conducted on 1000 calcaneum bones available in osteology section of Department of Anatomy, KGMU. 500 left and 500 right calcaneum bones were measured for maximum length, anterior breadth, middle breadth, and posterior breadth. Mean ± SD were calculated for all the measurements of left and right side and were compared to see the effect of laterality. Statistical analysis was done by version SPSS 15.0.

Results and conclusion: Calcaneum of left side (75±5.78 mm) was longer than right side (74.24±6.13mm) and the difference was statistically significant (p value=0.001). Anterior width on left side was 28.52±1.95 mm and right side was 28.02±2.11mm; middle width on left side was 41.56±1.95 mm, on right side was 40.82±2.17mm and posterior width of left and right side was 29.93±2.08 mm and 29.31±2.25 mm respectively. At all the three levels observed, calcaneum was wider on left side as compared to right and the difference was statistically highly significant (p value <0.001). In present study left dominant pattern in all the measurements of calcaneum was observed.

70. Osteological Evidence Of Coraco -clavicular Joint On Coracoid Process And Its Correlation With Morphometry Of Scapula

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Aims and objective – Coracoclavicular joint (CCJ), a synovial joint, present between conoid tubercle of clavicle and coracoid process of scapula, is a known anomalous joint with 0.7-10.1% prevalence in various populations as reported by osteological studies. If symptomatic, presents with shoulder pain, brachialgia or osteoarthritis of itself or neighboring joints. The purpose of the study was to find the prevalence of articular facet on the superior surface of coracoid process of scapula and to relate it with the morphometry of scapula.

Materials and Methods – 103 scapulae (53 left, 50 right), obtained from Osteology Lab of Department of Anatomy, King George's Medical University, Lucknow, were vigilantly observed for presence of well defined circumscribed facet on posterior part of superior surface of coracoids process. The length of superior, medial and lateral border of scapula was measured using Vernier Calliper (precision 0.02mm).

Resultsand Conclusion – In 15.53% scapula facet for CCJ was observed, out of which 20% were on right side and 11.32% on left. The mean length of superior, medial and lateral border of right scapula was 7.97±0.81cms, 14.05±1.13cms and 11.66±1.01cms and of left scapula was 7.62±0.81cms, 14.44±1.09cms and 11.92±0.95cms respectively denoting that scapula of left side is longer and narrower as compared to right. Scapulae, with coracoid process bearing articular facet, were wider and smaller as compared to those without facet.

71. Incidence of Pterion Ossicle In Human Skull

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Ossicles bones are small irregular bones found on the suture .These bones are commonly found in occipital bones. Aim Of The Study –To study the incidence of pterion ossicle in human skull & correlate its clinical significance. Material & Methods- . The present study was carried out on 130 dried

adult human skulls in various medical; colleges(HIMS Dehradun ,MMC Muzaffarnagar, RMC&RC Kanpur, SIMS Hapur over a period of 9 years in the department of anatomy. The thoroughly examination of pterion were done to observed the presence of pterion ossicles and the finding were documented , the photographs of pterion ossicles were taken using a digital camera. Result & Conclusion- the pterion ossicles were found to be in 14 skulls (10.76). These bones are clinically important because they can mislead in the diagnosis of fracture of skull bones. Knowledge of its presence is very important for anthropologist, radiologist, autopsy surgeon, orthopaedic and neurosurgeons.

72. Relation Between Sinusitis And Deviated Nasal Septum

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Aims of study: Sinusitis is one of the most common diseases of the nose and sinuses. deviated Nasal septum is a common disorder and its role in the pathogenesis of chronic sinusitis remains uncertain. This study was done to find the association between the presence of symptomatic nasal septum deviation and sinusitis.

Materials and Methods: Totally 150 patients with chronic sinusitis of greater than twelve weeks duration who attented ENT OPD JNMC AMU that are refractory to medical treatment were analyzed. All patients underwent otorhinolaryngology examination, digital radiograph of paranasal sinuses. In required patients CT scan of nose and paranasal sinuses was done.

Results and conclusion: In our study 82 were males, 68 were females. 67% of patients with symptomatic sinusitis presented with DNS.

Keywords: Deviated nasal septum, Sinusitis