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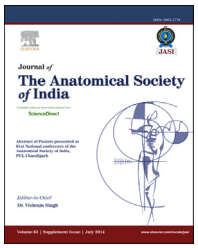

Poster Presentations

Abstract of Posters presented at 61st National conference of the Anatomical Society of India

1. A partial double ureter and altered relation at the hilum of left kidney –A case report

Kasat P A, Bhuiyan P S

Department of Anatomy, Seth G.S.M.C., Parel, Mumbai, Maharashtra, India

A duplex collecting system (or duplicated collecting system) is one of the commonest congenital renal tract abnormalities. It occurs in approximately 1.3% of the population. Diagnosis is important for operative planning and long-term follow up.

Double ureters have been classified as:

(1) Complete, wherein two pelves on the same side, one superior to the other, drained by separate ureters and having separate orifices on the floor of the bladder.

(2) Incomplete, wherein two pelves and the two ureters join to enter the bladder by one common ureter and orifice. The bifurcation in this latter group may be situated at any point in the course of the ureter, from just above the bladder, up to the renal pelvis.

Embryologically, duplication occurs when two separate ureteric buds arise from a single mesonephric duct. Interestingly, and explaining the Weigert-Meyer rule, the future lower pole ureter separates from mesonephric duct earlier. Thus, it migrates superiorly and laterally as the urogenital sinus grows. During routine dissection of a male cadaver, a partial double ureter was found along with altered relation of structures at the hilum of left kidney. From anterior to posterior the relations were left renal artery, left renal vein and two ureters. On the right side, no such variation was observed.

2. Multiple lentigines syndrome –A case report

Shambharkar Shweta, Borate S.M., Kulkarni P.G., Gangane S.D.

Grant Government Medical College, Mumbai, Maharashtra, India

It is a rare multiple congenital anomalous condition, mainly characterized by skin, facial and cardiac anomalies. About 200 patients have been reported worldwide but the real incidence has not been assessed. Formerly called as LEOPARD syndrome (LS), is an acronym for the cardinal features: lentigines, ECG conduction abnormalities, ocular hypertelorism, pulmonic stenosis, abnormal genitalia, retardation of growth and sensorineural deafness. Multiple lentigines present as dispersed flat, black-brown macules, mostly on face, neck and upper part of trunk with sparing of mucosa. Lentigines generally do not appear until 4-5 years of age but then increase to thousands by puberty. Some individuals with LS do not exhibit lentigines. Approximately 85% have heart defects, 50% have postnatal growth retardation, 20% have sensorineural hearing defects, 30% have intellectual disability.

In the present case, a 6 years old male is suspected of Multiple Lentigines Syndrome through clinical findings of multiple lentigines, cardiac defect (ASD), abnormal genitalia, growth retardation, mild mental retardation and hearing defect.

Mutation based differential diagnosis in patients with borderline clinical manifestations is warranted. LS is inherited as an autosomal dominant condition, so each child has a 50% chance of inheriting the disorder. LS should be suspected in fetuses with severe cardiac hypertrophy and prenatal diagnosis may be performed. Clinical management should address growth and motor development and cardiac defects.

3. A case of absent celiac trunk

Yadav Sachin, Borate Shabana, Gangane S.D., Sinha Rashmi

Grant Government Medical College, Mumbai, Maharashtra, India

Introduction: Absence of celiac trunk is a rare variation amongst the branches of abdominal aorta. All the three branches of celiac trunk i.e. left gastric artery, splenic artery and common hepatic artery, arises directly from abdominal aorta instead. In some cases splenic artery gives rise to left gastric artery (gastrosplenic trunk) and common hepatic artery arises from superior mesenteric artery (hepatomesenteric trunk).

Method: In present case celiac trunk was found to be absent in sixty five years old Indian female cadaver during routine dissection schedule for First MBBS student in 2011-12 batch at Dept. of Anatomy, Grant Govt. Medical College, Mumbai.

Result: In this case left gastric artery originated from the anterior aspect of abdominal aorta. Splenic artery and common hepatic artery arose below left gastric artery from left and right anterolateral aspects of abdominal aorta respectively. Superior mesenteric artery also independently arose from anterior aspect of abdominal aorta at lower level.

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Discussion: Knowledge of such case has important clinical significance in an abdominal operation or invasive arterial procedure, such as Appleby procedure, liver transplantation, laparoscopic surgery, and radiological procedures in the upper abdomen etc.

4. A case of variations of hilar structures of left kidney

Salwe N.A., Sinha R.S., Kulkarni P.G., Gangane S.D.

Grant Government Medical College, Mumbai, Maharashtra, India

Introduction: Study was done to find out structural and morphological variations in renal vasculature.
Methods: In routine dissection of sixteen cadavers in the Department of Anatomy, Grant Government Medical College a rare case of rounded pelvic kidney with hilar structure variations was found on the left side of a male cadaver aged sixty years. Other associated anomalies were looked for and the specimen was photographed.
Results: In the present case, rounded left kidney with bifid ureter on anterior surface join together to form single ureter and open in the bladder by single orifice. Also it has openings of left renal veins on anterior surface just above the openings of bifid ureter. The left kidney has openings of left renal arteries on posterior surface. The position of left kidney was found to be pelvic, while the right kidney was normal. The opening of the ureter into the bladder didnot show any abnormality. Examination of other thoracic, abdominal and pelvic viscera and other structures revealed no other gross morphological abnormality.
Discussion: Knowledge of anatomical variations of the urinary system is of great importance not only for urological conditions but also in surgeries involving renal transplant and radiological examinations interpretation.

5. A case report of neural tube defect: Craniorachischisis

Sonali Kankhare, P.G.Kulkarni, S.D.Gangane, S.M. Borate

Grant Government Medical College, Mumbai, Maharashtra, India

Introduction: Neural tube defect spectrum include anencephaly, spina bifida, Craniorachischisis, inencephaly etc. Craniorachischisis is congenital fissure of skull and vertebral column. Anencephaly is a developmental defect of central nervous system in which brain and cranial vault are grossly malformed. The defect result when neural tube fail to close during three-four week of gestation leading to foetal loss and still birth.
Methods: In the present case; Twenty three week female fetus was observed for the defect in cranium, vertebral column and face.
Results: Fetus showed presence of anencephaly with extension defect in vertebral column up to lumbar part of vertebral column. Brain tissue and spinal cord were covered only by membranous tissue. The neck was short, nose broad and eyes were bulging.
Discussion: NTD's can be detected by screening test like Alfa feto protein and ultrasonography. Parent of babies with NTD's should be educated about preventive measures of future pregnancies. Genetic counseling may be helpful in this respect.

6. Ectopia cordis –A case report with its embryological correlation

Mrinmoy Pal, Abhijit Datta, G.T. Sangma, Manirul Islam

Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur, India

Introduction: Ectopiacordis or extrathoracic heart is defined as an anomaly in which the fetal heart lies outside the thoracic cavity. It is a rare congenital anomaly with a mortality rate of 50-60%.We report a case of a 3 kg female baby who was born to a primigravida mother who had a non-consanguineous marriage, with thoracic type of ectopiacordis along with other congenital anomalies.
Method: To evaluate the case with ectopiacordis and associated anomalies, with its embryological correlation and clinical significance.
Results: We report a case of a 3 kg female baby who was born at 36 weeks of gestation to a primigravida mother who had a non-consanguineous marriage. It was thoracic type of ectopiacordis along with supra-umbilical wall defect, meningocele and valgus foot deformity. Condition of the baby deteriorated rapidly and died within a few hours after birth.
Discussion: The prognosis of the condition is very poor. This anomaly can be due to primary failure and midline fusion of the lateral body folds or early rupture of chorion and/or yolk sac causing failure of midline fusion, amniotic band syndrome. It is also common with other associated anomalies like chromosomal anomalies. With the advances in all aspects of medical science the survival of these babies can be increased considerably.

7. Lumbosacral transitional vertebra –A case report

Jethva K V[a], Rathod S P[a], Pandya A M[a], Bharadava V H[b], Chauhan P R[a]

[a]*Department of Anatomy, P.D.U. Government Medical College, Rajkot,-Gujarat, India*: [b]*Department of Radiology, M.P. Shah cancer hospital, Ahmedabad, Gujarat, India*

Lumbosacral transitional vertebra (LSTV) is congenital spinal anomaly defined as either sacralisation of lowest lumbar segment or lumbarisation of most superior sacral segment of spine. Lumbarization means non fusion of 1st& 2nd segment of sacrum. Sacralization means fusion of transverse process of last lumbar vertebra(L5) to the sacrum on one/both side or with ilium or both.

It is due to defect in segmentation of lumbosacral spine during development Clinically it is strongly associated with degenerative disease & low back pain and also important during spinal surgery.

During routine osteology class at P.D.U. Medical College Rajkot we found lumbar vertebra fused with sacrum of male sex. The transverse process of vertebra was fused with sacrum bilaterally, while body was not fused completely. Lamina of 5th lumbar vertebra was not fused with sacrum. Age of the specimen is not known.

8. Third head of biceps brachi –A case report

Adhvaryu MA, Adhvaryu AV, Rathod SP, Pandya AM

Department of Anatomy, P.D.U. Government Medical College, Rajkot, Gujarat, India

Biceps Brachii is a muscle of flexor compartment of arm. Normally it has origin in form of 2 heads, long and short. A wide range of racial variations in the occurrence of third head of biceps brachii muscle ranging from 2-7% in Indians to 37.5% in Colombians have been reported. More than three heads of biceps have also been reported. Clinically, the knowledge is important as presence of third head may lead to unusual displacement subsequent to fracture, iatrogenic injury by surgeon or neurovascular compression. It has been reported that in 10% cases, the third head of Biceps may arise from the superomedial part of the brachialis and is attached to bicipital aponeurosis and medial side of tendon insertion. Variations of third head of Biceps may present as a group of accessory fascicles arising from the coracoid process, the pectoralis major tendon, head of humerus, articular capsule of humerus or from shaft of humerus itself. In the present case, during routine dissection, there was presence of three heads of biceps brachii in the right arm of a male cadaver, the third head taking origin in form of accessory fascicles from head of humerus as well as from the coracoids process along with coracobrachialis. Three separate bellies were seen to unite in lower third of arm and inserted on radial tuberosity. All the three heads were supplied by musculocutaneous nerve. Third head may increase the power of flexion and supination of the forearm.

9. Supraorbital extension of ethmoid air cells –A case report

Singh Kuldeep, Sharma Anuj Ram, C.S. Ramesh Babu

Department of Anatomy, Muzaffarnagar Medical College, Muzaffarnagar, Uttar Pradesh, India

Introduction: The ethmoid is of endochondral origin forming part of the cranial base. The ethmoid air sinus is significantly different than all the other sinuses in that it is the only paranasal sinus that presents with very thin bony wall lamellae. The other paranasal sinuses can form septations but these are much more rigid and hard. The consequence is that these very thin bony lamellae allow the migration of cells easily into adjacent bones or other paranasal sinuses. These extramural extensions can migrate into frontal recess cells, frontal cells, supraorbital cells and/or any combination of these.
Method: The present study was done by routine Anatomical dissection of orbit in a male cadaver.
Result: We have observed a bilateral extension of ethmoid air cells between periorbita and bony orbital plate of frontal bone. On each side multiple pouch like extension of ethmoidal sinuses were seen. Such extramural supraorbital cells were present bilaterally in 7% cases.
Discussion: The important observation was the presence of these extensions between the periorbita and the orbital roof. For the surgeon, however, the varied manifestations of extramural migration of the ethmoid is critically important for it decides the proper surgical procedure to be implemented to resolve the pathologic condition of the patient.

10. Circle of Willis with hypoplastic left internal carotid artery and heart with a replaced mitral valve

K.Mani

Department of Anatomy, Sri Sathya Sai Medical College & Research Institute, Chennai, Tamilnadu, India

Introduction: Willis circle is the balancing mechanism of blood supply to brain between the vertebrobasilar and carotid system. A combination of hypoplastic left internal carotid artery and heart with a replaced mitral valve is rare as per the literature.
Methods: Routine dissection of an embalmed 58 year old male cadaver was done with dissection instruments. A metal scale and a vernier caliper was also used.
Result: The left internal carotid artery was found to be hypoplastic and terminated as left ophthalmic artery. The basilar artery on the left side continued as the left middle cerebral artery. The left anterior cerebral artery duplicated from the right anterior cerebral artery. The heart was replaced with a mitral valve.
Discussion: This a one of the rare types of Circle of Willis with hypoplastic left internal carotid artery, not contributing any branch for its formation. More over the heart was replaced with a mitral valve. This pattern of Willis Circle associated with a replaced mitral valve is hitherto not reported in the literature.

11. An unusual morphology of the human liver –A case report

Drakshayini B K[a], J Y Kadam, Usha V[b]

[a]*SIMS Shimoga, Karnataka, India*: [b]*OMC Bangalore, Karnataka, India*

Introduction: The liver is the largest abdominal viscera, occupying a substantial portion of the upper abdominal cavity. Knowledge of normal & an unusual morphology is required for accurate diagnosis.

The aim of present study is to enlighten an unusual morphology and pathology of human liver.
Methods: During routine dissection in the Department of Anatomy, Shimoga Institute of Medical Sciences, Shimoga, we got a specimen of liver with an unusual morphology.
Results: On gross examination of liver-left lobe was represented by a tongue like projection. Surface is nodular. Posteroinferior surface shows tumourous protrusion. Absence of quadrate lobe Microscopy shows- fatty change, features of early cirrhosis. Rest of details will be discussed at presentation.
Discussion: Our case report may be a guide for radiologists for proper interpretations of liver images. It is also important for the surgeons to know about unusual morphology of liver for their easy diagnosis and management purposes.

12. Multiple absence of lumbricals in sole of a male cadaver –A case report

Yumnam B, Aribam J D, Nongthombam S, Daimei T T

Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur, India

Introduction: The lumbricals of the sole are four small muscles which are sometimes reduced to fatty tissue in the elderly. They arise from the tendons of flexor digitorum longus. They are week muscles but they play a part in the flexion of the metatarsophalangeal joint of the lateral four toes and extension of the interphalangeal joints. This is to report a variation of plantar lumbricals.
Methods: During routine dissection of undergraduate cadaver in the sole region, a variation was observed and photographed.
Results: The cadaver shows multiple absences of lumbricals on both the soles. On the right sole, the tendon of flexor digitorum longus gives origin to the first lumbrical and the rest was absent.

The left sole shows presence of the first and fourth lumbricals with the absence of the second and third lumbricals.
Discussion: This variation is being reported for its rarity.

13. Absence of median cubital vein in the right upper limb –A case report

Phungshoknao L, Moirangthem M, Aribam JD

Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur, India

Introduction: Median cubital vein is a superficial vein connecting the cephalic and basalic vein in cubital fossa. It is commonly selected for blood sampling, blood transfusion and intravenous infusion in clinical practice often during emergencies. Cubital region is the site of minimal risk for venepuncture. This is to report a case of absence of median cubital vein in the upper limb of a male cadaver.
Method: During dissection for the undergraduate students on a male cadaver of above 50 years of age, a variation of the superficial vein of the upper limb was noted and photographed.
Results: Absence of median cubital vein was observed on the right upper limb, but on the left upper limb distribution of the superficial veins was found to be normal.
Discussion: Awareness of uncommon cubital venous pattern would be useful because the veins are also used for introduction of cardiac catheters. In view of the clinical importances, absence of the median cubital vein should always be kept in mind during emergencies and clinical procedures.

14. Quadrifurcation of brachial artery –A case report

Aribam Jaishree Devi, G Tempy N Sangma, Ambath D Momin

Regional Institute Of Medical Sciences, Imphal, Manipur, India

Introduction: Variations of the upper limb arterial system are very common. The brachial artery is normally bifurcated into radial and ulnar arteries in the cubital fossa. There are also reported cases of trifurcation of the artery into radial, ulnar and interosseous arteries. But till date quadrifurcation of brachial artery into four terminal branches in the cubital fossa has not been reported.
Methods: During the dissection of fetuses to study the variation of the terminal branches of brachial artery, a female fetus of 38 weeks of gestational was observed with variations.
Results: The left brachial artery was seen dividing into four terminal branches (quadrifurcation). From medial to lateral is ulnar artery, common interosseous artery, radial artery and 4th branch supplying subcutaneous structures and skin (cutaneous branch).
Discussion: Such rare variation is important to be considered during reconstructive surgeries, interpretation of angiographic images and other clinical procedures to prevent surgical complications and diagnostic errors. Preoperative angiographic evaluation is recommended.

15. Cervical rib –A case report

Aribam Jaishree Devi

Regional Institute of Medical Sciences, Imphal, Manipur, India

Cervical rib in human is a congenital anomaly in which there is an additional rib arising from 7th cervical vertebra whereas in some vertebrates occur normally such as in reptiles and birds. Cervical rib is present in 0.5% of the population out of which not more than 10% develop TOC (thoracic outlet syndrome). Neurological type is found in 1 in 1 million people. Onset occurs in between 2nd& 8th decade and peak in 4th decade. It is 3 to 9 folds more common in females.

A lady aged about 27 years attended Preventive Medicine and Rehabilitation OPD with the complaint of pain in the neck. X-rays of neck show left cervical rib. This case is being presented for Cervical rib is a rare congenital anomaly, more common in females and its extremely rare neurological complication which can be prevented by avoiding heavy weight lifting, carrying heavy objects for long distance, heavy work and by regular exercise to increase muscle tone.

16. Cyclopia with proboscis and macrostoma –A rare case report

Nayak S, Sethy S, Seth S, Biswal R, Mohapatra C

SCB Medical College & Hospital, Cuttack, Odihsa, India

Introduction: Cyclopia is a deformation of the facial skeleton with one eye formed in the place where both the eyes should be present. Its rate of occurrence is almost 1 in 100,000 births including stillbirths.
Methods: A still born male foetus was received from the Department of Obstetrics and Gynaecology, SCB Medical College & Hospital, Cuttack.
Results: The foetus was seen to be suffering from Cyclopia with Proboscis and Macrostoma. Suggested risk factors include chromosomal abnormalities, potentially teratogenic environmental factors during organogenesis, infections during pregnancy (TORCH) or drugs taken during pregnancy.
Discussion: Awareness of such conditions and adoption of appropriate preventive measures can reduce maternal and foetal mortality.

17. A case report on persistent median artery in 38th week old foetus

Sangma GTN, K Mrinalini, S Purnabati, R K Ajita

Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur, India

Introduction: The median artery is the axis artery of the superior extremity during early embryonic life and normally regresses in the 2nd embryonic month. Persistence of the median artery may also occur in conjunction with anomalies of the median nerve.
Methods: The anomaly reported here were found during routine foetal dissection in the department of Anatomy, RIMS, Imphal.
Results: The right forearm of one 38th week old female foetus showed the presence of median artery whereas the left forearm of the same specimen showed no variation. The median artery was long and slender and it arises from the ulnar artery at the same level as the common interosseous artery. The median artery was enclosed by the median nerve which forms a ring encircling the artery. The median artery lies anterior to the nerve throughout the course in the forearm. The median artery enters the palm by

passing beneath the flexor retinaculum and take part in the formation of superficial palmar arch.
Discussion: The median artery due to its close relation with the median nerve maybe involved in several clinical disorders and hence the present case is reported.

18. Prevalence of congenital cataract in patients with Down's syndrome

Rajesh Dehankar, D. D. Ksheersagar, V. M. Paikrao

NKP Salve Institute of Medical Sciences & Research Centre, Digdoh Hills, Hingna Road, Nagpur, Maharashtra, India

Introduction: Down's syndrome is a genetic condition in which a person has 47 chromosomes instead of 46 with an extra copy of chromosome 21. This extra genetic material disrupts the normal developmental processes leading to medical and physical abnormalities in cases of Down's syndrome. Children with Down's syndrome are characterised by mental retardation but they also have high frequency of various ocular anomalies.
Methods: This study was done with an aim to estimate the occurrence of congenital cataract among the patients with Down's syndrome. Children with Down's syndrome between the age group of 0 to 14 years were studied. They are the diagnosed cases of cataract during the period between 2008 to 2012.
Results: It is observed from the study that out of 511 diagnosed cases of cataract 13 cases (6 males and 7 females) were having Down's syndrome (2.54%).
Discussion: The frequency of early cataract among children with Down's syndrome is found to be 3.31%. 50% of the cases out of 13 also have congenital heart defects. In 5 cases bilateral cataract is observed soon after birth.

19. Study of epipteric bone in adult humans skull in Vidarbha Region of Maharashtra

Sanjay M. Walulkar, D. D. Ksheersagar

NKP Salve Institute of Medical Sciences & Research Centre, Digdoh Hills, Hingna Road, Nagpur, Maharashtra, India

Introduction: Pterion, a significant region on the lateral aspect of the skull commonly used as a neurosurgical landmark, is usually an irregular H shape suture formed by the articulation of four bones: frontal, parietal, greater wing sphenoid, and squamous part of temporal bones. One or more pterion ossicles or Epipteric bones may appear at pterion. They vary greatly in size, but are more or less symmetrical.
Methods: 300 adult human skulls were collected from the Department of Anatomy and Forensic Medicine of various medical colleges of Vidarbha region.
Results: Out of 300, 39 skulls showed presence of epipteric bones. 12 skulls showed bilateral presence epipteric bones and in 27 skulls epipteric bones were present unilaterally. Sexual dimorphism was also noted. Their sizes were measured by Vernier Callipers. All the four types of pterion were present, i.e. sphenoparietal, frontotemporal, stellate, and epipteric. The presence of these bones renders the typing of the pterion well because of the difficulty of assigning them to one of the pterion constituents. Very little literature is available regarding the study epipteric bones in different populations.
Discussion: The knowledge of the variations of pterion and its surgical anatomy, in Indian population are important for surgeons operating in the field. The present study will also contribute additional information of skull bone fractures in infancy and childhood, which may be associated with large intersutural bones giving false appearance of fracture radiologically and also during surgical interventions involving hurrhole surgeries.

20. Comparative study of morphology and histology of mammalian tongue

Anant Fulse, D.D. Ksheersagar

Department Of Anatomy, NKP Salve Institute Of Medical Sciences & RC, Digdoh Hills, Hingna Road, Nagpur Maharashtra, India

Introduction: The dorsal surface of the oral part of tongue shows the lingual papillae. On the basis of their appearance four types of papillae can be distinguished —filiform, fungiform, circumvallate and foliate papillae. Taste buds on the mammalian tongue are confined to the epithelium of three types of gustatory papillae: the fungiform, circumvallate, and foliate.
Methods: 10 cadaveric tongues of human , buffalo , goat (3 mammals with 10 specimens each & tissue from anti 2/3 , sulcus terminalis, lateral area , post. 1/3 pharyngeal & at the root areas of the tongue are taken for Histological studies. All the samples are fixed in Bouin's fluid & stained with H & E stain and special stain. In Goat and Buffalo, the anterior part of the tongue is longer. In human dorsum of the tongue is divided into an oral part and pharyngeal part by a sulcus terminalis i.e.2:1. Dorsum of the oral part is covered by different types of lingual papillae: filiform, fungiform, and circumvallate and foliate papillae. Intermolar eminence is present Goat, & Buffalo.
Results: Three sub types of filiform papillae (i.e. simple conical, giant conical, and true filiform) have been noted in Goat, and Buffalo tongue. Fungiform papillae are well developed in goat tongue. Circumvallate papillae in goat tongue form double row on the posterolateral part of the intermolar eminence. Foliate papillae are rudimentary in human, absent in goat tongue. All of the circumvallate, foliate papillae and most of the fungiform papillae bear taste buds. Serous glands are present in the oral part of the tongue, while mucous glands are present in the pharyngeal part. Apical lingual gland is present only in human and goat tongue.

21. Sirenomelia —Mermaid syndrome

Sharmila Pal, Jadab Chandra Chattopadhyay, Dibyendu Datta

Medical College, Kolkata, West Bengal, India

A neonate with rare congenital anomalies was born at 25 weeks of gestation and died within 17 minutes of birth. On examination of the baby, it was found that the lower limbs were malrotated and fused all along the length with six toes. External genitalia, urogenital and anal orifices were absent. At autopsy, a single umbilical artery was found arising from the abdominal aorta. Both the kidneys were polycystic and were situated in the iliac fossae. Distal portion of the large gut beyond caecum was absent and rectum was atretic. No reproductive organ was found. On the basis of the findings, the case was diagnosed as sirenomelia (mermaid syndrome).

22. Premasseteric branch of facial artery supplying temporalis

Tapas Smita, HansdakRanjeeta, Mehta Vandana, Suri Rajesh Kumar, RathGayatri

Department of Anatomy, VardhmanMahavir Medical College & Safdarjung hospital, New Delhi, India

Introduction: To report premasseteric branch of facial artery supplying temporalis muscle and to discuss its embryological basis and clinical significance.
Methods: Routine dissection was carried out in the region of face in five adult embalmed cadaversto study the branching pattern of facial artery.
Results: Prominent premasseteric branch of facial artery given at anteroinferior angle of masseter was noted on the left side in an adult male cadaver. It ran upward behind the facial artery along the anterior border of masseter and terminated within the substance of temporalis muscle. One single deep temporal branch from the second part of maxillary artery as well as middle temporal branch from the superficial temporal artery supplying the temporalis muscle were also present on the left side.
Discussion: Premasseteric branch of facial artery provided the additional vascular pedicle for the temporalis muscle. The relevance of such variation holds importance with context to the flap and reconstructive surgeries being carried out in oro-maxillofacial region.

23. Additional head of sternocleidomastoid muscle

Thorat M, Patil R J, Doshi M A

Krishna Institute of Medical Sciences, Deemed University, Karad, Maharashtra, India

Introduction: The sternocleidomastoid forms a prominent land mark across the side of the neck. It is the main flexor muscle of the neck and an accessory muscle during deep inspiration. Variations of the SCM have been widely recognized and described in medical literature.
Methods: Medical students performed a routine cadaver dissection in our department of anatomy, that time we noted the additional head of sternocleidimastoid muscle. We carried out careful dissection and observed its origin and nerve supply.
Results: During the gross dissection, we observed an additional clavicular head of sternocleidomastoid muscle in 60 years old male cadaver which was present bilaterally. Additional head was originating lateral to the original clavicular head and it is supplied by a branch from spinal accessory nerve.
Discussion: The knowledge of the variations of sternocleidomastoid morphology is important during non invasive and invasive reconstructive or rehabilitative procedures of the head and neck.

24. Duplication of great saphenous vein –Anatomical description and its clinical implications

Jain P, Motwani R, Dada R

All India Institute of Medical Sciences, New Delhi, India

Venous drainage in the lower limb is accomplished by three systems of veins- superficial, deep and perforating veins. It comprises of great and short saphenous vein that are located in the superficial fascia while the deep vein system consists of venae comitantes to the anterior and posterior tibial artery, popliteal veins, femoral veins and its tributaries. The perforating veins are the communicating channels that decompress the superficial system. Lower limb veins are most prone for various venous disorders. Complete knowledge of the variations of great saphenous vein is of immense importance in the assessment of clinical conditions like varicose veins, deep vein thrombosis and venous ulcer. The present case report presents with a rare case of duplication of great saphenous vein (complete pattern). Duplication of long saphenous vein is one of the potential reasons behind recurrence of varicosity after successful surgery and at the same time it makes the vessel extraction easier for procedures like coronary artery bypass graft. Thus meticulous examination of the lower limb veins is of immense significance.

25. Undescended testes-late presentation –A case report

Soram I S[a], Ningthoujam D D[a], Wahengbam J S[b]

[a]*Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur, India*: [b]*Department of Radiodiagnosis, Regional Institute of Medical Sciences, Imphal, Manipur, India*

Introduction: To report a case of undescended testis on the right side.
Methods: During routine ultrasonography, a thirteen year old male came to Radiodiagnosis department, RIMS Hospital, Imphal, Manipur, INDIA, for sonography of scrotum for non palpable testis in the right side, referred by the Urology department. Whole abdominal sonography was taken and the undescended testis was traced.
Results: On physical examination, left testis was well palpable in the scrotum but the right testis was not palpable. On ultrasonography, left testis was found in the left hemi scrotum. It has a size of 1.18x1.78x2.61cm. Right hemi scrotum was found empty. Right testis was present in the right inguinal region. It appears with normal vascularity. It is smaller than the right testis and has a size of 0.42x0.46x0.97 cm. Other abdominal organs were found normal.
Discussion: Complete descent of testes normally occurs before birth, if not occurred during this period, the descent is complete in the first few weeks of life. Ultrasonography is a useful tool in the diagnosis of testicular and scrotal disorders including localization of undescended testes.

26. Anomalous origin of Rt. Testicular artery –A case report.

Dehury Manoj Kumar, Dutta B.K , Sar M , Das Saurjya Ranjan

Department of Anatomy, V.S.S Medical College, Burla, Odisha, India

Normally renal, gonadal and middle suprarenal arteries are three paired branches from abdominal aorta. But during routine dissection, we have observed a case where testicular artery on the right side was arising from renal artery. It was maintaining normal relation with the ureter and genitofemoral nerve and followed a normal course entering into the inguinal canal through the deep inguinal ring. The branching pattern was normal on the left side of the body. Abnormalities involving lateral splanchnic branches are rarely reported.

27. A case of bilateral abnormal obturator artery in ale cadaver

Dipal Arya, Meenakshi Bansal, Ritesh Brahmbhatt, C.D.Mehta

Department Of Anatomy, Government Medical College, Surat, Gujarat, India

Obturator artery is medium-calibre parietal branch of internal iliac artery having wide variation in its origin. In present study we have dissected 21 cadaver in Department Of Anatomy, Government Medical College, Surat. The obturator artery was identified and traced from its origin to its exit at the obturator membrane. In most of the cases obturator artery is arise from anterior division of internal iliac artery. We present a case of 60 years old male having bilateral abnormal obturator artery. The pubic branch of inferior epigastric artery is enlarge and its known as abnormal obturator artery which passes along with obturator vein and nerve through obturator foramen. General surgeons dealing with laparoscopic herniorrhaphy should be aware of the aberrant obturator artery that crosses the superior pubic ramus and is susceptible to injuries during dissection of the Bogros space and mesh stapling on to Cooper's ligament. This abnormal obturator artery is important in surgery of strangulated inguinal hernia while cutting lacunar ligament because after passing through obturator foramen, it lies in relation to lacunar ligament. So while cutting this ligament during operation, if abnormal obturator artery present, it leads to profuse haemorrhage.

28. Meningomyelocele –A case report

Sanjenbam SD, Thounaojam NS

Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur, India

Introduction: The clinical consequences of a defect in neural tube range from mild to fatal. In mild cases, only the dura and the arachnoid protrude from the vertebral canal in the affected region, resulting in a meningocele. If neural tissue as well as meninges protrudes, the defect is called meningomyelocele.
Methods: An abnormal male fetus with meningomyelocele was collected from the Obstetrics and Gynaecology department, RIMS, with permission from the Institutional Ethics Committee. The fetus was dissected for further observation.
Results: The defect lied in the lumbosacral region at the level of L3,4,5 and S1. Externally, the defect measured 2 cm in length but on dissection the bony defect was found to be 4 cm in length.
Discussion: Neural tube defect is one of the commonly encountered birth defect with an incidence of 1 in 1000 births. It can be prevented by supplementing folic acid and vitamin B12 during periconceptional period and early diagnosis by the available diagnostic ultrasonography, so that the clinician can counsel the couple regarding the outcome.

29. Ectopia cordis –A case report

Guanmei K, Rajkumari A, Chongtham R

Department of Anatomy, Regional Institute Of Medical Sciences, Imphal, Manipur, India

Introduction: To report a case of Ectopiacordis.
Method: A live full term baby was born in RIMS Hospital, by caesarean section to a primigravida with no significant antenatal history.
Results: On physical examination the baby looks healthy, face, ears, limbs, lower abdomen shows no visible abnormality. But there was the large opening of the chest in the upper part in the midline anteriorly with the protruding heart, liver and umbilical cord.
Discussion: Ectopia cordis is a rare congenital defect, commonly associated with intracardiac lesions or with a spectrum of abnormalities as in pentalogy of Cantrell resulting due to the lateral body wall closure defect. Due to its rarity, its proper treatment protocol is yet to established.

30. Non-immune hydrops fetalis –A case report

Colney S L, Ningthoujam D D, Thounaojam N S

Regional Institute of Medical Sciences, Imphal, Manipur, India

Introduction: Hydrops fetalis is a serious fetal condition characterized by abnormal accumulation of fluid in fetal soft tissues and serous cavities. The incidence in south east Asia varies from one in 500 to one in 1500. There are two types of hydrops fetalis: 1. Immune hydrops fetalis (IHF) 2. Non-immune hydrops fetalis (NIHF). NIHF was first described by Edith Potter in 1943 as "universal edema unassociated with erythroblastosis". The common causes of NIHF are vascular (20%), chromosomal (16%), placental (8%), hematological (10%) and others. Maternal causes maybe infection or diabetes mellitus.
Methods: A single female fetus 27 weeks 5 days of gestational age was delivered by caesarean section on 14th march 2013 at 4:15pm in the department of Obstetrics and Gynaecology, RIMS, Imphal. The mother was a 18 year old primigravida with blood group A positive. She went for regular antenatal check-up. Ultrasound at 24 weeks revealed cystic hygroma with hydropsfetalis, severe oligohydramnios and intra-uterine fetal death.
Results: On examination, the neonate was a female and grossly oedematous. She showed scalp and body wall edema including limbs edema and ascites.
Discussion: When first described, NIHF constituted 20% cases, but with effective anti D prophylaxis for immune hydrops, NIHF constitutes 90% cases of fetal hydrops. Perinatal mortality in NIHF rises to 50-98%, so only early recognition and perinatal approach can improve already bad prognosis.

31. Foramen of sternum –A case report

Debbarma P , Moirangthem MS, Ningthoujam DD

Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur, India

Introduction: The sternum or breast bone is a flat axial bone forms the ventro-middle portion of the thoracic case. It resembles a short sword. It has 3 parts-the upper part is the manubrium, the middle part is the body and the lower part is the xiphoid process or xiphisternum. The average length of adult sternum is about 17 cm and which is longer in males than females.

The aim of present study is to find out the developmental anomalies associated with the sternum and its clinical significances.
Method: The foramen was found in one sternum during routine osteology class for 1st MBBS students in academic year 2012-2013

in anatomy department RIMS, Imphal. One student noticed his sternum bearing a hole in the lower 1/3rd and showed during class.
Results: We observed one oval shaped foramen of size 4mmx6mm was present in the lower 1/3rd of the body of the sternum. An adult sternum such of a foramen is very rare.
Discussion: The sternal hole or foramen is an important anatomical variation due to incomplete fusion. It has significant clinical importance as it is close to vital organs like heart and lungs.

32. Cervical rib –A case report

Ambath D. Momin, N. Damayanti

Regional Institute of Medical Sciences, Imphal, Manipur, India

A cervical rib is a supernumerary or accessory rib from the seventh cervical vertebra. This is associated with a peculiar development of the 7th cervical vertebra in that there is a separate centre of ossification for the costal element of its transverse process. They occur in approximately 0.5% of the population and more common in female than male. Onset is from the second to eighth decade with a peak in the fourth decade.

A 40 years old female visiting the Medicine OPD, RIMS, Imphal with the complaint of mild swelling in the lower part of right side of neck. She also had complaint of weakness and tingling sensation in the right hand and these symptoms were aggravated after doing some works. When the pressure is applied on the swelling, she felt tingling and electric-like sensation radiating towards the extremity of the hand. On x-ray and CT scan, right sided cervical rib was found.

This case is being reported for its common occurrence and usually asymptomatic. Quite often, it is under-diagnosed. Their relationship to thoracic outlet syndrome (TOS) is not so constant that the two conditions should be seen as synonymous. Perhaps no more than 10% of people who have cervical ribs develop TOS.

33. Embryological analysis of o case of exostrophy of cloaca –A case report

Debbarma T, Ningthoujam DD, Chongthom R

Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur

Introduction: Exostrophy of cloaca is a severe defect in the development of urinary bladder and caudal part of gastrointestinal tract which are exposed through a severe ventral body wall. A reported incidence of 1 of 200,000 to 1 of 400,000.
Methods: A still born fetus of about 21 weeks (foot length 3.3cm) with multiple malformations collected from the Department of Obstetrics and Gynaecology, RIMS, Imphal after getting formal permission from the Institutional Ethics Committee, RIMS, Imphal.
Results: Omphalocele along with malrotation of the lower limb, 2nd toe of the left foot overrode the first toe, imperforated anus and absent genitalia.

On dissection, uretric orifice was seen at the interior of cloaca. The muscular sac had no opening in the lesser pelvis, this sac was the cloaca which was devoid of anterior wall and herniated through the ventral body wall defect were observed.
Discussion: Present case is reported for coexistence absence of external genitalia along with exostrophy of cloaca. This abnormality could be the result of disruption of development during 3rd –7th week. This is presented because of its rarity.

34. Variation of circulus arteriosus – A case report

Debbarma T, Ningthoujam DD, Moirangthem MS

Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur, India

Objective: The Circulus Arteriosusis a ring shaped anastomosis formed by the branches of the basilar and internal carotid arteries at the base of the brain. It is a major source of blood supply of brain. Variation in knowing Circulus Arteriosus is of utmost importance.
Methods: During routine dissection in the Department of Anatomy, RIMS, Imphal, the case of variations in the Circulus Arteriosus were found.
Results: Variations were seen in CirculusArteriosus. Left posterior cerebral artery was coming out from the junction of basilar artery, left anterior cerebral artery was larger than right and variable length of the arteries was also observed.
Discussion: The high incidence of anatomical variations in the arterial pattern of the brain had been the subject of many anatomical studies. Knowledge of these variations is important for the diagnostic, interventional and surgical procedures.

35. Giant omphalocele –A case report

Saha N[a], Chirom PKS[b], Moirangthem MS[a], Ningthoujam DD[a]

[a]*Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur, India*: [b]*Department of Obstetric & Gynaecology, Regional Institute of Medical Sciences, Imphal, Manipur, India*

Introduction: An omphalocele represents an embryological defect of the umbilical ring and medial segments of the two lateral abdominal folds during fetal growth. The incidence is nearly 2.5 cases per 10,000 live births. An omphalocele can be divided into two groups depending on the size of the hernial defect. A major or giant omphalocoele is classified as a 5 cm or larger defect. The hernial sac may contain small and large bowel, stomach, liver, spleen, urinary bladder, gonads. Here we are presenting a case of giant omphalocele.
Methods: During routine dissection of the fetuses in the Department of Anatomy, collected from Department of Obstetrics & Gynecology after formal permission from Institutional Ethics Committee, the case of giant omphalocele in a fetus was observed.
Results: In a fetus of 26 weeks gestational age, short umbilical cord, adherent to membrane was found. There was right sided scoliosis, imperforated anus with no external genitalia. On removal of the membrane all the abdominal viscera were outside the abdominal cavity including the heart and both the lungs. The malformed liver, malrotated kidneys, bladder exostrophy with undifferentiated gonads were observed. Thoracic cavity was small and filled up with the thymus gland only.
Discussion: The survival rate of fetuses with abdominal wall defect is less. Ultrasonography can be used to accurately diagnose abdominal wall defect in utero. In case of pregnancy continuation serial ultrasonography is recommended to detect any alteration in fetal growth.

36. Rotational anomaly of Kidney in fetus –A case report

Saha N, Ningthoujam DD, Moirangthem MS

Department of Anatomy, Regional Institute of medical Sciences, Imphal, Manipur, India

Objective: The definitive kidney is formed by the union of ureteric bud and nephrogenicblastema. The kidney lies first far caudally in the sacral region and migrates upwards out of pelvis into the abdominal cavity on each of the vertebral column. Initially the hilum of the kidney faces ventrally but during its ascent it rotates almost 900 and faces medially. Reverse or excessive rotational anomaly is a rare entity. Here we are presenting a case of anomalous rotated kidney in a fetus.
Methods: During routine dissection of the fetuses in the Department of Anatomy, collected from Department of Obstetrics & Gynecology after formal permission from Institutional Ethics Committee, the case of rotational anomaly of kidney in a fetus was observed.
Result: In a fetus of 35 weeks gestational age, both the kidneys and ureters were found in front of the vertebral column. Right kidney was found from L1-L3 vertebral level, facing medially. Left kidney was at T11-L3 vertebra, facing posteromedially. The distance between the two upper poles was more than the distance in between two lower poles.
Discussion: Anomaly of kidney may be associated with other anomalies. So it is very necessary to diagnose the anomalies for proper management during intrauterine life. We hope that, this will contribute to imaging study of fetal kidney and its anomalies.

37. Relative position of umbilicus in developing fetuses

Saha N, Moirangthem MS, Ningthoujam DD

Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur, India

Introduction: The umbilicus is a round dermal projection of the centre of the anterior abdominal wall. It lies over the umbilical ring which is the last part of the abdomen closed in fetus or after birth. The position of the umbilicus is a significant factor in surgical procedures like abdominoplasty. So the study is aimed to determine the relative position of umbilicus in developing fetuses.
Methods: During routine dissection of the fetuses of different gestational ages, in the Department of Anatomy, collected from Department of Obstetrics & Gynecology after formal permission from Institutional Ethics Committee, the position of the umbilicus was measured in 40 numbers of fetuses. The fetuses were included into 3 gestational age groups. The distance from inferior border of xiphisternum to the upper border of pubic symphysis [xiphi-pubic (XP)], and the distance of xiphisternum to the midpoint of umbilicus [xiphi-umbilical (XU)] were measured in the midline in supine position. The percentage ratio between XU and XP were calculated and the data were analysed.
Result: Our findings showed that, XP was 8.47+/-2.42 cm and XU was 5.49+/-1.92 cm. The umbilical position was 64.19+/-9.75 percent off the way from the inferior border of xiphisternum to the superior border of pubis in the midline. XU/XP percentage ratio was not significantly different in all the age groups.
Discussion: We hope that, our study will contribute in selecting the most appropriate site for abdominal reconstruction surgery.

38. A very rare variant in the colon supply- Middle mesenteric artery

G. S Kalyan[a], Jyotsna Singh [b], Navtej Singh [c], Kunal Chawla[d]

[a]Government Medical College, Patiala, Punjab, India: [b]Gian Sagar Medical College & Hospital Patiala, Punjab, India: [c]B.P.S. Govt. Medical College For Women, Sonepat, Haryana, India: [d]Post Graduate Institue of Medical Education Research, Chandigarh, India

The middle mesenteric artery is a very rare variation of the mesenteric blood supply. It is a direct branch from the abdominal aorta originating between the superior mesenteric artery and inferior mesenteric artery.

A case of the present middle mesenteric artery was discovered during the dissection of the large intestine blood supply. It originated from the anterior wall of the abdominal aorta 4.5cm above the inferior mesenteric artery origin in a adult male cadaver, having the diameter 0.5 mm and 1.0 cms below superior mesenteric artery. Then it ran horizontally to the left giving off branches to the descending colon and sigmoid colon, in the extent of the normal inferior mesenteric artery. The inferior mesenteric artery arose from aorta trifurcated into a left colic artery, sigmoid artery and superior rectal artery. This case emphasizes the importance of detecting and characterizing such vascular anomaly and reporting them to the surgeon.

39. Bilateral accessory foramina in the petrous temporal bone – A case report

Goyal N, Sharma M, Gupta PK

Department of Anatomy, Gian Sagar Medical College & Hospital, Ramnagar, Patiala, Punjab, India

Introduction: The accessory foramina in the middle cranial fossa are usually seen in the greater wing of sphenoid, which are mostly vascular. The present case report aims to highlight the developmental basis and clinical importance of accessory foramina seen in petrous part of temporal bone.
Method: The present case was observed on an adult dried skull during routine undergraduate teaching in the department of Anatomy, Gian Sagar Medical College & Hospital, Banur, Patiala. The measurements were done with the help of a divider and vernier calipers.
Result: Bilateral accessory foramina were observed on the anterior surface of petrous part of temporal bone over the trigeminal impression, posterior to foramen ovale communicating with carotid canal. The foramen of right side was elliptical in shape with diameter 0.15x 0.12mm and foramen of left side was circular in shape with diameter 0.12 x 0.13mm. Both foramina had smooth margins.
Discussion: We can not comment on the structures passing through the foramina, as it was found during routine Osteology demonstration. Because of its communication with carotid canal, it may be transmitting a branch from internal carotid artery.

40. An abnormal hepatocaecal peritoneal fold in an adult cadaver –A case report

Sharma M, Baidwan S, Gupta PK

Gian Sagar Medical College, Ramnagar, Patiala, Punjab, India

Introduction: Abnormal peritoneal folds around the liver are very rare. The knowledge of accessory peritoneal folds is important for a surgeon and radiologist. The present case report aims at

highlighting the embryological basis and clinical importance of an accessory peritoneal fold.

Material: During routine undergraduate teaching in the dept of anatomy, GSMCH, Banur, in an embalmed 60 yr, male cadaver an abnormal peritoneal fold was observed, whose extent and attachments were noted.

Result: The peritoneal fold was seen extending upwards from the lateral aspect of caecum, trifurcating at its upper end into three parts, one part attached to the inferior border of liver, another to diaphragm and the third to the abdominal wall. A recess was seen deep to the fold attached to the abdominal wall. The fold did not contain any observable blood vessel.

Discussion: The recesses deep to these folds could be a cause of internal hernia leading to intestinal obstruction. Therefore, while diagnosing a patient with acute intestinal obstruction, we must keep in mind the presence of such accessory folds.

41. Iniencephaly and associated anomalies in a 13 week fetus –A case report

Sharma M, Baidwan S, Gupta PK

Gian Sagar Medical College and Hospital, Ramnagar, Patiala, Punjab, India

Introduction: Iniencephaly is a rare neural tube defect (1 in 65,000 births in India) which is incompatible with life. The present study describes a case of Iniencephaly and the various congenital anomalies associated with it at 13 weeks of gestation.

Methods: A physical examination and x-ray study was done of a 13 week fetus to determine the presence of iniencephaly and other developmental abnormalities. The findings were correlated with pre-natal sonographic findings.

Results: A rural 27 year old, gravida 2, para 1 presented with fetus of 13.2 weeks gestation. The ultra-sound results of present pregnancy showed a single live fetus of 11-12 weeks of gestation with features of iniencephaly, cystic hygroma and single umbilical artery. Keeping in view the poor prognosis of the fetus, the parents decided to undergo medical termination of pregnancy (MTP). On external examination of the fetus, the neck was retroflexed, occipital area was soft, flattened and brain tissue and spinal cord was visible externally in cervical region. Below the level of cervical region, no defect was observed and vertebral column was covered by normal skin. The skin overlying the side of neck was loose and soft indicative of subcutaneous edema. The umbilical cord showed the presence of 2 vessels (1 umbilical vein and 1 umbilical artery). The x-ray showed presence of ossification centers in spinous processes of all vertebrae except in the cervical region.

Discussion: Iniencephaly in a 13 weeks fetus was associated with cystic hygroma and single umbilical artery.

42. Abnormal formation of sciatic nerve –A case report

Swamy Ravindra S, Jyothsna Patil, Satheesha Nayak B, Mohandas Rao KG, Srinivasa Rao S, Naveen Kumar

Department of Anatomy, Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India

Tibial and common peroneal components of sciatic nerve from the sacral plexus united below the piriformis muscle leading to formation of sciatic nerve in left side of gluteal region in a male cadaver during routine dissection for undergraduate medical students at Melaka-Manipal Medical College, Manipal University, Manipal, India. The tibial component passed ventral and common peroneal component passed dorsal to the piriformis muscle and both of these components joined together below the piriformis muscle to form sciatic nerve. The sciatic nerve then passed caudally into back of thigh and divided into tibial and common peroneal nerves in the upper part of popliteal fossa. In addition, a communicating nerve from the sciatic nerve was found to join the common peroneal nerve in the popliteal fossa. Present variation can be classified as type 3 according to Machado et al, and as E 5 and D 4 category according to Shewale et al. Such variations as in the present case may lead to piriformis syndrome or non-discogenic sciatica.

43. Sessile terminal ileum, sub-hepatic caecum and abnormal peritoneal fold attached to the gall bladder –A case report

Nayak Satheesha B

Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India

During the dissection classes for undergraduate medical students, subhepatic position of the caecum was noted. The caecum was of ampullary type and the vermiform appendix was attached to its posteromedial side. The appendix made a 'U' shaped bend and its tip was located in 11' O clock position. The ceacum had appendices epiploicae and the terminal part of the ileum was retroperitoneal. The retroperitoneal part of ileum ascended vertically to the caecum from the right iliac fossa. The greater omentum was very large and covered the intestine completely and extended to the lesser pelvis. A fold of peritoneum extended from upper right part of the greater omentum to the fundus, body and neck of the gall bladder. The gall bladder was not visible because of this fold. Functionally, the sessile part of the ileum might restrict its peristaltic movements. The abnormal position of the terminal ileum may be mistaken for ascending colon during laparoscopic surgery. Subhepatic position of caecum and appendix may cause confusions in diagnosis of acute appendicitis as the tenderness in such cases is not located at the Mc Burney's point. The abnormal peritoneal fold noted here might cause problems in the laparoscopic cholecystectomy.

44. Multiple venous variations of the head and neck –A case report

Kumar N, Aithal A, Nayak S

Department of Anatomy, Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India

Variations in the formation and drainage pattern of the veins of the head and neck are common. We report here a case where in the external jugular vein was absent, the retro mandibular vein was undivided and the facial vein joined the common trunk of retro mandibular vein to form a common venous channel which received the sub mental vein, a communication from anterior jugular vein and superior thyroid vein as tributaries. Finally, this common venous channel drained into the internal jugular vein.

Knowledge of these venous variations, particularly the absence of external jugular vein is important to clinicians as they are used

for certain clinical procedures like catheterization, as venous manometer and angioplasty procedures.

45. Anomalous termination of external jugular vein and its clinical implication

T Ramesh Rao

Department of Anatomy, Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India

Knowledge of variations of superficial veins of head and neck is important to surgeons doing head and neck surgery as well as to radiologists doing catheterization and to clinicians in general.

The variations of the superficial veins of head and neck though common are important clinically.

The superficial veins, especially the external jugular vein (EJV), are increasingly being utilized for cannulation to conduct diagnostic procedures or intravenous therapies. EJV is also used in microsurgical procedures, used as a recipient for the free flaps. During routine dissection of head and neck on the left side, bifurcation in the termination of external jugular vein was found in a middle-aged male cadaver. However such variation was not found on the opposite side of the neck. Awareness of these variations is important for the surgeons to avoid any intraoperative trial or error procedures which might lead to unnecessary bleeding.

46. Unusual veins in the neck –A case report

Surekha D Shetty, Satheesha Nayak B, Naveen Kumar, Sapna Marpalli, Venu Madhav N

Department of Anatomy, Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India

Introduction: Variations of the superficial veins of the neck are very common. Some of the variations may cause problems in invasive techniques or bleed significantly even with a small cut in the skin.
Methods: We present some unusual variations of the superficial veins of the neck.
Results: The right facial, external jugular and suprascapular veins joined to form a large vein which terminated at the junction between internal jugular and subclavian veins. The right transverse cervical vein terminated into the internal jugular vein. A subcutaneous vein ascended superficial to sternum and joined the left anterior jugular vein. Left anterior jugular vein terminated by opening into the right internal jugular vein. The left anterior jugular vein and the right transverse cervical vein communicated with each other in front of the right internal jugular vein.
Discussion: A thorough understanding and knowledge of the variations are essential in order to avoid complications during clinical procedures.

47. Variant origin of common trunk of accessory hepatic artery and cystic artery from the superior mesenteric artery

Shetty P, Nayak SB, Rao SS

Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India

Though vascular variations of gallbladder and liver are well documented in the literature, the knowledge of incidence of rare vascular variations related to them is clinically important while planning the open and endovascular procedures involving these organs. During the cadaveric dissection, we came across a rare vascular variation in the supracolic compartment of the abdomen. A common trunk of accessory hepatic artery and cystic artery arose from the right margin of the superior mesenteric artery. It coursed upwards behind the head of the pancreas and first part of the duodenum and entered into the right free margin of the lesser omentum. It finally entered into the substance of the right lobe of the liver. Before entering into the liver, it gave a branch at level of the Calot's triangle, to supply the gallbladder. The variant origin of the common trunk of accessory hepatic artery and cystic artery, along with its unusual course in relation to the Calot's triangle is clinically important during laparoscopic and open cholecystectomy procedures.

48. An unusual termination of facial vein and anterior division of retromandibular vein into external jugular vein –A case report

Patil Jyothsna, Rao KG Mohandas, LS Ashwini, SN Somayaji

Department of Anatomy, Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India

Introduction: Normally the facial vein joins with the anterior division of retromandibular vein to form common facial vein, which in turn drains into internal jugular vein.
Methods: During routine dissection of head and neck region of a 50-year-old male cadaver, an unusual pattern in the termination of veins on the left side was observed. The formation, course and termination of external jugular vein was normal.
Results:The anterior division of retromandibular vein joined with external jugular vein, about 5cm above the clavicle and the facial vein was opening into the external jugular vein about 2.5cm above the clavicle. In addition, there was a thin venous communication between anterior division of retromandibular vein and external jugular vein.
Discussion: The superficial veins of the neck are often used for cannulation; either for intravenous infusion or for central venous pressure monitoring. Furthermore, these venous segments are used as apatch for carotid endarterectomies. Hence, a thorough knowledge of the normal anatomy and their variations could be useful in performing these procedures.

49. Accessory parotid gland and unusual termination of facial artery

Abhinitha P, Satheesha Nayak B, Mohandas Rao K G, Naveen Kumar

Department of Anatomy, Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India

Introduction: Accessory parotid glands are the part of the parotid gland more or less detached from the parotid gland lying between the zygomatic arch and the parotid duct.
Method: During routine dissection of the left side of the face of a male cadaver we observed the accessory parotid gland with its duct and the unusual termination of the facial artery.
Results: The duct of the parotid gland joined with the accessory parotid duct to form a single duct. Accessory parotid gland was also pierced by a branch of the facial nerve. Normally the facial

artery terminates at the medial angle of the eye but in this case it terminated at the ala of the nose and it also had an unusual branch which was passing beneath the masseter muscle.
Discussion: Knowledge of this variation may be important for the maxillofacial surgeons and also for the radiologists.

50. Reactions among first year medical students on their first exposure to cadaveric dissection

Gayathri .S Prabhu[a] , Liegelin Kavitha[b], Satheesha Nayak.B[a]

[a]*Department of Anatomy, Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India*: [b]*Department of Physiology, Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India*

Introduction: First exposure to cadaveric dissection can have an impact on the anxiety levels and emotions of medical students. Aim of the present study examines the relationship between anatomy students with their first exposure to anatomy dissection classes.
Methods: A questionnaire was prepared relating to anxiety level of the students using 0-10 scale. 0'not at all anxious 'and 10 indicates 'as anxious as ever been '. Emotional levels were assessed using 0-5 scale. 0- indicating 'not at all 'and 5-indicating 'very much so'. Data was obtained from 147 students of batch-32 of Melaka Manipal Medical College, Manipal University.
Results: Students found the experience exciting with most of them giving a positive response. Percentages of their responses were considered. 43.3% of students found their experience as not anxious. Where in 42% of students found it very anxious and challenging. 14.5% of students did not express extreme anxiety. 17% of students found their experience fearful and worrying and 16.3% of them expressed their experience as depressive.
Discussion: Experiences with cadaveric dissections for the first time can be perceived as anxious or exciting. Percentage of students who expressed high levels of anxiety and extremes of emotions was not high; however minority of individuals who may experience adverse reactions needs to be considered in this situation.

51. Unilateral arterial variation in the axillary region with a high origin of brachial artery –A case report

D'souza MR, Shetty P, Nayak SB

Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India

Introduction: Axillary artery is the derivative of axis artery of the upper limb. Variations are frequent in the axillary artery and significant during vascular surgeries.
Methods: During routine dissection an unusual variation in the branching pattern of the axillary artery was observed on the left side of a male cadaver.
Results: The course, distribution and branches of the first and second part of the axillary artery were normal. The axillary artery in its 3rd part proximal to lower border of teres major divided into 2 branches. One of these branches coursed between the two roots of the median nerve from medial to lateral side and gave off subscapular and anterior and posterior circumflex humeral branches. Further it continued in the arm as profundabrachiiartery. The other branch is a rare and unusual high origin of the brachial artery which coursed superficial to the median nerve and continued in the arm without giving any branches. It ended in the cubital fossa dividing into radial and ulnar arteries.
Discussion: The normal and abnormal anatomy of the axillary region has a practical importance for the vascular radiologist and surgeon and it should be known for accurate diagnostic interpretation. Awareness of variations in the anatomy of brachial artery and its branches is important to avoid serious complications while treating the cases of arterio-venous fistulae, aneurysms and abscess drainage in the region of axilla, arm and cubital fossa.

52. Anatomical and surgical intervention of congenital eart disorders

Harsh, Subhash Kaushal, Gopichand V. V. Patnaik

Depatment of Anatomy, Maharishi Markendeshwar Institute of Medical Sciences and Research, Mullana, Ambala, Haryana, India

A Congenital heart defect is a problem with the structure of the heart which may involve walls of heart, valves of heart and arteries and veins near the heart. It is present at birth. Congenital heart defects are the most common type of birth defects. 180,000 children are born with Congenital Heart Disorders In India every year. 60,000 —90,000 with severe Congenital Heart Disorders. These congenital heart disorders listed below will be discussed in detail during poster presentation.

- Endocardial Cushion Defect.
- Transposition of Great Arteries.
- Tetralogy Of Fallot.
- CoarctationOf Aorta.
- Partial Anomalous Pulmonary Venous. Connection.

53. Occipitalization of atlas

Walia S, Modi B, Puri N, Patnaik VVG, Kaushal S

Maharishi Markendeshwar Institute of Medical Sciences And Research Mullana, Ambala, Haryana, India

Introduction: Occipitalization of atlas or Occipitocervical synostosis is fusion of the atlas with the occipital bone. It is one of the most common osseous anomalies of the craniovertebral junction which occurs at the base of the skull in the region of the foramen magnum. The knowledge of such a fusion is important because skeletal abnormalities at the craniocervical junction may result in sudden unexpected death.
Method: 40 Skulls were examined for occipitalization of Atlas. Of these, 2 skulls (5%) showed complete fusion of atlas with occipital bone.
Result: In first skull both anterior and posterior arch were completely fused with occipital bone in addition the transverse process on the right side was not fused whereas left transverse process was fused with occipital bone. In second skull both anterior and posterior arch were completely fused whereas both transverse process were not fused. In first and second skulls antero-posterior length of foramen magnum was 24mm and 27mm respectively and antero-posterior length of vertebral foramen was 28mm and 30mm respectively. The transverse width of foramen magnum in both skulls was 24mm and 29mm respectively and transverse width of vertebral foramen was 30mm and

32mm respectively. It may reduce foramen magnum diameter which may compress the spinal cord or brain stem leading to neurological complications.
Discussion: Therefore, Knowledge of occipitalization of the atlas may be of substantial importance to orthopedicians, neurosurgeons, physicians and radiologists dealing with abnormalities of the cervical spine.

54. Left sided bochdalek hernia in an adult –Embrylogical basis and a case report

Luther N, Patnaik VVG, Kaushal S, Luther A

Department of Anatomy, Maharishi Markandeshwar Institute of Medical Sciences And Research Mullana Ambala, Haryana, India

Introduction: To present a rare case of left sided Bochdalek hernia in an adult and its embryological basis. Bochdalek hernia is a type of Congenital Diaphragmatic Hernia (CDH) that typically presents in childhood. The clinical manifestation of symptoms and diagnosis in adults is extremely rare and reported cases are fewer than 100. Congenital left diaphragmatic hernia of Bochdalek rarely occurs in adults. Most of them are asymptomatic.
Method: In this article, we report a case of a 25-year-old male with left-sided Bochdalek diaphragmatic hernia who presented with abdominal pain and dyspnea. The chest radiograph showed features suggestive of left-sided diaphragmatic hernia, which was confirmed using Multi-Dimensional Computed Tomography (MDCT). The patient underwent laparotomy, wherein a 6cm postero-lateral diaphragmatic defect with herniation of the spleen, part of stomach, colon and small bowel through the opening was found. The contents were reduced into the peritoneal cavity, and the diaphragmatic defect was repaired with non-absorbable sutures.
Discussion: In 1848, Bochdalek first described a congenital hernia resulting from the developmental failure. Bochdalek hernia is normally diagnosed in neonates and postnatal patients. Bochdalek hernia is usually unilateral, results from defective formation and fusion of pleuroperitoneal membrane with the other three parts of the diaphragm, which should normally fuse by the end of 6th week of intrauterine life. As a result, the pleuroperitoneal and pleural cavities are continuous with one another. This type of hernia usually occurs in left side in 85-90% cases. The preponderance of left sided defects is likely related to early closure of right pleuroperitoneal opening.

55. Evaluation of techniques of cleaning embalmed cadaver bones

Modi B, Puri N, Patnaik VVG, Kaushal S

Maharishi Markendeshwar Institute of Medical Sciences And Research Mullana, Ambala, Haryana, India

Introduction: Teaching faculty of anatomy in medical colleges in India is facing regular problems of scarcity of dry bones. This has led to precure dry bones in anatomy department from dissected cadavers. Therefore necessity has arisen to find out easily applicable methods for cleaning bones. Although burrying and let microbes of nature do work is the best way of cleaning bones but this method is in less use because of decreased availability of cadavers and time.

Present study was conducted to evaluate the better method to precure bones from embalmed dissected specimens.

Methods: In present study dissected specimens formed the material to precure bones. 10 bones were taken which include three skulls, one scapula, one humerus, one radius, one ulna, one femur, one tibia and one fibula. Three different methods were used to precure bones. 1) boiling with simple water, 2) soaking in warm water at constant temperature.3) soaking in warm water at constant temperature with addition of detergent.
Result and Discussion: It is observed that all the above mentioned techniques were useful but had some limitations. With 1st method all the long bones were cleaned but foramina of skull and ends of long bones had to be cleared with blunt dissection. By 2nd method nothing could be easily cleared off. With 3rd method, all long bones were cleaned best but use of detergent made bones of skull a little brittle. Therefore, we conclude that the 3rd method is more applicable than other two methods in controlled conditions.

56. Lobulated kidney –A case report

Sahu, Santosh Kumar; Talukdar, Kunjalal; Bayan, Hemanta & Sarma, Joydev

Gauhati Medical College, Guwahati, Assam, India

Introduction: To study the number of lobes, position of the kidney, weight of the kidney, and length, breadth, thickness of the lobulated kidney.
Methods: During routine dissection of abdomen of a 40 years old male cadaver in the dept. of Anatomy , Gauhati Medical College, Guwahati, bilateral lobulated kidneys were found. Their position and numbers of lobes were noted. Weight was measured in accurate weight machine, length, breadth & thickness measured with the help of slide calliper.
Results: Each kidney consists of ten lobes which make the surfaces of kidney irregular. Both kidneys are normal in position. The right kidney weighs 126.1g and left kidney weighs 136.6g.The right kidney measures 9.1cm long, 5.5 cm broad, and 3 cm thick. The left kidney measures 9.2 cm long, 6 cm broad and 3.5cm thick.
Discussion: Persistence of fetal lobulations itself has no functional implication; however its importance lies in imaging procedure as these lobulations may be misdiagnosed as renal tumour or scarred kidney .The details of the study will be discussed at the time of presentation.

57. Partial lumbarization of first sacral vertebra –A case report

Neginhal.D.D, Kadam.J.Y

Shimoga Institute of Medical Sciences, Shimoga, Karnataka, India

Aim: To study the lumbarized sacral vertebra and its clinical importance.
Methods: During routine osteology class for MBBS students of batch 2012-2013 at SIMS, Shimoga, out of fifty sacrum we found one sacrum with partial lumbarization of first sacral vertebra.
Results: Normally sacrum consists of 5 sacral segments and 4 pelvic and 4 dorsal foramina. In this specimen the sacrum was having,3 pelvic and 3 dorsal foramina, the 1st sacral vertebra was separated on right lateral side and on left lateral side fused with 2nd sacral vertebra. The sacral promontory and ala of sacrum was well developed hence it was partial lumbarization of first sacral vertebra .This appeared to be a female sacrum.

Discussion: Lumbarized sacrum can cause nerve compression, soft tissue and ligament strain. The clinical implication of lumbarized sacrum is important to diagnose lower back pain, sciatica, disc prolapse and helpful in procedures like spinal anaesthesia an d lumbar puncture.

58. "Variation in the origin of renal arteries in both kidneys and relation of hilar structures in left kidney" –A cadaveric case report

Neginhal.D.D, V.Usha, Kadam.J.Y

Shimoga Institute of Medical Sciences, Shimoga, Karnataka, India

Introduction: To study the renal vascular variations and its clinical importance.

Methods: During routine dissection for MBBS students of batch 2011-13 at SIMS Shimoga, out of 20 cadavers we found a variation in the origin and relations of renal arteries in both kidneys in a female cadaver.

Results: The right kidney with the main renal artery was supplied by an accessory renal artery arising from abdominal aorta and supplying the lower pole of right kidney.

The left kidney was supplied by three renal arteries all taking origin from abdominal aorta about 0.5cm apart ,the first renal artery at the level of superior mesenteric artery was considered as the main renal artery and was anterior to the renal vein at the hilum, hence the normal hilar anatomy was altered, that is renal vein, artery and ureter. The second and third (accessory) renal arteries entered at the upper and middle margins of hilum respectively. The left ureter was bifid at the hilum, rejoined again to continue as a single ureter.

Discussion: Variation in the origin of renal arteries and relations of the structures at the hilum is of worth concern to the urologist, laproscopic surgeons, radiologist and during renal transplantation.

59. Sternal and xiphoid foramina –A case report

Satapathy BC, Singh G, Mohapatra C

S.C.B. Medical College, Cuttack, Odisha, India

Introduction: To understand the importance of the knowledge of the presence of sternal foramen and its implications.

Methods: 38 sterni belonging to the Department of Anatomy, S.C.B. Medical College, Cuttack were observed to search for the presence of visible congenital anomaly if any. Vernier calipers were used for measurements. Positive findings were photographed.

Result: Out of 38 sterni observed, only one had a sternal foramen of the size of 15mm x 6mm near the junction of middle and lower third of the body of the sternum. A foramen in the xiphoid process measuring 7mm x 4mm.

Discussion: Physicians, Cardiothoracic surgeons and pathologists should be aware of the close proximity of the heart and lungs with the sternum during sternal puncture to avoid fatal complications.

60. Unusual termination of right suprarenal vein –A case report

Satapathy BC, Singh G, Biswal R

S.C.B. Medical College, Cuttack, Odisha, India

Introduction: Suprarenal gland is a unique organ in having similar arterial supply on either side, but differing in its venous drainage. The left suprarenal vein drains into left renal vein whereas the right suprarenal vein drains into IVC directly due to its proximity.

Method: During routine undergraduate dissection we found the right suprarenal vein draining into right renal vein in a cadaver.

Results: The dissected specimen was photographed for documentation. In this specimen the right suprarenal artery is shown taking origin from the right renal artery, which is normal.

Discussion: Adrenal venous sampling can be a challenging procedure, especially in the presence of anomalous venous drainage patterns. So knowledge of normal adrenal venous anatomy, as well as possible variants, is important to ensure a successful procedure for the interventional radiologist.

61. Long study hours and other associated risk factors for myopia in medical student

Wakode N.S, Ksheersagar D.D

NKP Salve Institute of Medical Science & Research Centre, Nagpur, Maharashtra, India

Introduction: : Today in India, with increasing level of education & living standard, the prevalence & severity of myopia appear to be an upward trend. High incidence & progression rates of myopia have been reported in individuals who spend long hours in near work activity.

Methods: The present study was carried on 222 MBBS students of NKP Salve medical collage Nagpur. Student completed questionnaire that include age, sex, age of appearance of refractive error, parent history, reading hours, computer using, scoring in common entrance, extra achievement in carrier & sport. Data was analyzed using SPSS frequency, percentage, mean & standard deviation was calculated accordingly. Chi- square test was applied wherever applicable & P value <0.05 was considered statistically significant.

Result: Assessing genetic component 66.39% myopic student show positive family history. Statistically it showed strong significant relationship. ($P= 0.001$). Average continuous reading hours of myopic student were about 25hrs/ wk and 10hrs/ wk for emmetropic student. It was statistically significant ($P=0.001$). Strong significant association was found in myopic student for scoring achievement in carrier other than regular study as compared to emmetropic ($P=0.001$).

Discussion: Myopia is a predominant refractive error among the first year medical students. Majority of myopic students score highest marks in common entrance, achievement in carrier other than syllabus study. Majority of the parents of myopic medical students are also found to be myopic.

62. Prenatal ultrasound and autopsy findings of omphalocele, exstrophy of bladder, imperforate anus and spinal defect (OEIS Complex) –A case report

Onkar D.P

NKP Salve Institute of Medical Sciences and Research Centre, Digdoh Hills, Hingna Road, Nagpur, Maharashtra, India

Introduction: Omphalocele, exstrophy of bladder, imperforate anus and spinal defect (OEIS complex) is a rare congenital anomaly with varied clinical presentation. The complex can be detected by prenatal ultrasound and autopsy is confirmatory in fetal loss.
Case Report: A spontaneously aborted fetus of 20 weeks maturity, fixed in formalin was received by Anatomy department for autopsy. Externally omphalocele sac, imperforate anus, kyphoscoliosis, ambiguous genitalia and bilateral congenital talipes were present. Omphalocele sac contained liver, coils of small intestine, spleen and stomach. The sac also contained right testis and right kidney. Presence of kidney and testis in the omphalocele sac is a very rare finding in this complex. Antenatal ultrasound at 18 weeks of gestation had demonstrated omphalocele, deformed spine, club feet, non-visualization of bladder and polyhydramnios. Imperforate anus could not be detected prenatally.
Discussion: Though Two-Dimensional (2-D) ultrasound is the best non-invasive method to detect the complex prenatally, occasionally ultrasound may fail to detect the full spectrum of the complex. For definitive diagnosis, Three-Dimensional (3-D) ultrasound, color Doppler and fetal Magnetic Resonance (MR) can be used.

63. Abnormal branching pattern of coeliac trunk –A case report.

Behera Sarita, Dutta B K, Mahapatra C, Sar M

Department of Anatomy, V.S.S Medical College, Burla, Odisha, India

Introduction: The coeliac trunk is the branch of abdominal aorta at the level of twelfth thoracic vertebra. Its branches namely left gastric, common hepatic and splenic arteries supply the derivatives of foregut.
Methods: During routine dissection of a 50 years male cadaver, we observed a very rare type of branching pattern.
Results: In this case a right hepatic, left hepatic, cystic, splenic and gastroduodenal arteries were all arising directly from the coeliac trunk and left gastric and right gastric arteries were the braches from splenic and gastroduodenal arteries respectively.
Discussion: Knowledge of these variations may be useful in planning and executing surgical and radiological interventions.

64. Rudimentary left lobe of liver –A case report

Das Saurjya Ranjan, Dutta B K, Mishra S K, Dehury M K

Department of Anatomy, V.S.S Medical College, Burla, Odisha, India

During routine dissection in a 60 year old male cadaver, we came across a case of rudimentary left lobe where the falciform ligament was attached to the extreme left margin of liver giving the impression of absence of left lobe, whereas on the inferior surface the fissure for ligamentum teres and ligamentum venosum were present extremely to the left separating a rudimentary left lobe from the right lobe.

Upto three months of gestation, left lobe is nearly as large as the right lobe but when haemopoietic activity of liver is assumed by the spleen and bone marrow, the left lobe undergoes some degeneration and becomes smaller.

Our case may be a case of exaggerated degeneration leaving only a rudimentary left lobe.

65. Incomplete Circle Of Willis due to the bilateral abnormal origin of posterior cerebral arteries and bilateral absence of posterior communicating arteries

Rao Mohandas KG, Somayaji SN, Ashwini LS, Sapna M

Department of Anatomy, Melaka Manipal Medical College, Manipal University, Manipal, India

Introduction: Variations in the circle of Willis are common. However, incomplete formation of circle of Willis due to bilateral abnormal origin of posterior cerebral arteries and bilateral absence of posterior communicating arteries is very rare.
Methods: We are reporting an unusual case of abnormal origin of right posterior cerebral artery from the right internal carotid artery and continuation of basilar artery as left posterior cerebral artery in about 60-year-old male cadaver.
Results: The posterior communicating arteries were absent on both sides and hence, the arterial circle of Willis was incomplete.
Discussion: Precise knowledge of such variations in the cerebral vasculature is essential for neurosurgeons and radiologists during the skull base and carotid surgeries, and cerebral angiography.

66. Anomalous origin of left vertebral artery: Embryological basis and review of literature –A case report

Desai Jalpa N[a] Patel J.P[a], Kanani S.D[b], Bhojak N.R[a], Ram S.H[a]

[a]*Department of anatomy, Smt.N.H.L.Municipal Medical College, Ahmedabad, Gujarat, India*: [b]*Pramukh Swami Medical College, Karamsad, Gujarat, India*

Introduction: Aortic origin of vertebral artery is rare anatomic variation. This study describes an anomalous origin of left vertebral artery arising from the aortic arch.
Method: During routine undergraduate educational dissection on formalin fixed 70 year male cadaver in anatomy laboratory of Smt. N.H.L.Municipal Medical College, Ahmedabad.
Result: Left vertebral artery arise from aortic arch between the origin of left common carotid and left subclavian arteries, more nearer to left subclavian artery. After its origin it follow normal course on left side.
Discussion: Detailed Knowledge of origin is important for radiologist and vascular surgeon four vessels angiography and head and neck surgery.

67. Arch of aorta: An anomalous branching pattern

Khorwal G, Tigga SR & Nagar M

Department of Anatomy, University College of Medical Sciences, Delhi, India

Introduction: The aortic arch classically gives rise to three branches, namely the right brachiocephalic trunk, left common carotid and left subclavian. Anatomical variations of the aortic arch are widely acknowledged and assume an immense clinical implication in cases of direct and iatrogenic trauma.
Methods: During routine cadaveric dissection of the thorax, in the Department of Anatomy, University College of Medical sciences & Guru Teg Bahadur Hospital, Delhi, we encountered a variation in

the branching pattern of the aortic arch in a forty five year old male cadaver.

Results: The aortic arch was found to give off only two branches, a brachiocephalic trunk and a left subclavian artery separated by a distance of 3.32mm. An aortic aneurysm was observed distal to the origin of the subclavian artery. The brachiocephalic trunk was bulbous at its origin and gave off two branches before it divided into the right subclavian & right common carotid artery, the left common carotid artery from the bulbous area and thyroidea ima artery at a distance of 5.11mm. The left subclavian artery, which was the direct branch from the arch of aorta, gave off two branches, the left vertebral artery immediately from its root and the first thoracic inter-segmental artery at a distance of 14.2mm on it's dorsal aspect. All the other branches were found to have a normal course and termination.

Discussion: Presence of such variations in the aortic arch is worth considering as they may cause serious complications during reconstructive and vascular surgeries.

68. Neural, arterial and muscular variations in the right upper limb of a single cadaver –A case report

Lalit M[a], Sachdeva K[a], Singla R[b], Piplani S[a], Poonam D[c]

[a]*Sri Guru Ram Das Institute of Medical Sciences & Research, Amritsar, Punjab, India*: [b]*Government Medical College, Amritsar, Punjab, India*: [c]*Chintpurni Medical College & Hospital, Bungal, Pathankot, Punjab, India*

Introduction: During a routine undergraduate dissection of a 54 years old male cadaver some important neural, arterial and muscular anatomic variations were seen in a single right upper limb in the form of Marinacci communication i.e. communication between the ulnar nerve and median nerve, double medial roots of median nerve, Superficial brachial artery, and reversed bifid palmaris longus muscle with a proximal 2/3rd tendinous part and distal 1/3rd muscular part. The knowledge of such variations is however not only desirable, but also essential as these have important influences on the predisposition to illness, clinical examination, investigations and patient management, including operative surgery.

Methods: A meticulous dissection was performed following classical incisions in the right upper limb of the cadaver in the Department of Anatomy, Chintpurni Medical College and Hospital, Bungal, Pathankot, Punjab. The variations were observed and photographed.

Results:

1) The median nerve was formed in axilla by the union of one lateral and two medial roots on lateral side of axillary artery. Later on median nerve came downwards and medially beneath the brachial artery. The ulnar nerve was formed from the medial cord of brachial plexus & gave a communicating branch to median nerve i.e. Marinacci communication.

2) The axillary artery in its third part gave the profunda brachii artery and continued as the brachial artery which crossed the median nerve superficially from the medial to the lateral side, in the middle of the arm, as the superficial brachial artery.

3) Right Palmaris Longus muscle was variant, being tendinous at the proximal 2/3 and muscular & bifid at the distal 1/3 part. The tendon traversed the entire length of the forearm passing superficial to FDS upto proximal wrist crease and divided into muscular and fascial slip. The muscular slip showed no bony attachment and became continuous with the abductor digiti miniimi and the fascial slip attached broadly to flexor retinaculum, palmar aponeurosis.

Discussion: Presence of these variations must be kept in mind during surgical interventions to avoid injury. Its ontogeny and clinical implications will be discussed.

69. Right sided sigmoid colon with fusion of sigmoid mesocolon to mesentery

Sandhya Dharwadkar, K.H. Oswal

Department of Anatomy, USM-KLE IMP, Belgaum, Karnataka, India

During routine dissection of body of an old aged male cadaver a rare abnormality was found.

On dissection of abdominal cavity it was observed that the descending colon after reaching left iliac fossa, turned to right, crossed midline, reached right iliac fossa, then crossed right side of pelvic brim to reach third piece of sacrum and continued as rectum. Further it was observed that there was fusion of sigmoid mesocolon with mesentery of terminal ileum.

The length of horizontal part or sigmoid colon measured 23cm, and in pelvic cavity it measured 27 cm resulting in total length of 50cm. (much more than average).

A longer sigmoid colon is a predisposing factor for intussusception, volvulus and intestinal obstruction particularly in children and pregnant females in their third trimester. Adhesions of sigmoid mesocolon with mesentery can also be responsible for compression of branches of inferior mesentery artery, particularly, due in gravid uterus resulting in ischemia.

During radiological exam in infants and children for suspected intussusception, right sided sigmoid colon is likely, to be mistaken for ceacum and ascending colon.

70. Caudal dysgenesis (sirenomelia) –A case report

Tiwari Amrish, Naik D.C., Khanwalkar P.G., Mishra Meghana

Shyam Shah Medical College & Sanjay Gandhi Hospital, Rewa, Madhya Pradesh, India

Sirenomelia, is a rare congenital anomaly with an incidence of one in 60,000 to 70,000 pregnancies. It is also called as Mermaid Syndrome because of fused leg, giving appearance of mermaid's tail. The cause of the condition is probably due to abnormalities in gastrulation in caudal segments. It was initially termed caudal regression, but it is clear that structures do not regress, they simply do not form. It is also known as caudal agenesis and sacral agenesis. Sirenomelia is characterized by varying degrees of flexion, inversion, lateral rotation, and fusion of the lower limbs. Other anomalies associated with this condition are, defects in lumbar and sacral vertebrae, renal agenesis, imperforate anus and agenesis of internal genital structures except the testes and ovaries. Its cause is unknown. It occurs sporadically but is most frequently observed among infants of diabetic mothers.

A dead foetus of more than four months gestation brought from Obstetrics and Gynaecology department to Anatomy Department of Shyam Shah Medical College & Sanjay Gandhi Hospital, Rewa.

External examination, radiological examination and dissection were done and findings were noted. The main findings were fused lower limbs, no external genitalia, single umbilical artery, intra-abdominal gonads and absent kidney. The above findings are consistent with the diagnosis Sirenomelia

71. Holoprosencephaly (cyclopia with nasal proboscis) –A case report

Agrawal Nidhi, Naik D.C., Khanwalkar P.G., Mishra Meghna

Shyam Shah Medical College & Sanjay Gandhi Memorial Hospital, Rewa, Madhya Pradesh, India

Introduction: Most but not all, craniofacial manifestations tend to follow DeMyer's 1964 maxim, "the face predicts the brain." In other words, the severity of the craniofacial phenotype tends to mirror the severity of the brain malformations and correlates inversely with survival. This dictum is followed by the condition Holoprosencephaly CNS disorder that develops because of failure of the prosencephalon to properly cleave in the early stages [during gastrulation] of development. Prevalence of this condition is approximately 1:10000 to 1:40000 live births and 1:250 conceptus. As development of face is closely related to development of forebrain So holoprosencephaly results various facial anomalies. out of that, the most severe form is presented in our case study.
Method: We have received a dead female full term fetus with unknown ANC history from department of Obstetrics and Gynaecology , S.S.Mdical College & Sanjay Gandhi Hospital, Rewa.
Results: On external examination the case presented with cyclopia {single centrally placed eye} with nasal proboscis (a tube-like nasal appendage with a single nostril located above the ocular region).
Discussion: After external examination, Radiological examination and dissection were done and findings were noted down. By this findings we conclude that it is case of severe form of holoprosencephaly.

72. Bi-lobed spleen, a congenital anomaly –A case report

Gaydhanker Prasanna Shravan, Herekar.N.G., Katti.A.S, Syed.S.A

Government Medical College, Miraj, Maharashtra, India

Introduction: Spleen can have a wide range of anomalies including its shape, location, number, and size. It may be congenital or acquired. Congenital anomalies affecting the shape of spleen are lobulations, notches, and clefts; Congenital location anomalies are accessory spleen, splenopancreatic fusion, and wandering spleen, while polysplenia is a congenital condition associated with number. Splenosis and small spleen are acquired anomalies which are caused by trauma and sickle cell disease, respectively.
Methods: A variation was noted on spleen during routine dissection in a male cadaver.
Result: Deep groove was noted on the diaphragmatic surface of spleen dividing it into two lobes. The spleen was inspected to see the depth and extent of groove. It was seen to be 1 cm deep and extending slightly on the visceral surface cutting superior and inferior border. The arterial supply and visceral relations were normal.

73. Inferior vena cava anomalies

Swati Shah

Smt. N.H.L. Municipal Medical College, Ahmedabad, Gujarat, India

Introduction: Inferior vena cava drains the blood from the part of the body below the diaphragm into right atrium of the heart. Normally Inferior vena cava is formed by the union of the right and left common iliac veins in front of the body of L5 vertebra, about 2.5 cm to the right of the median plane. Formation of the Inferior vena cava is a complex event gives rise to anatomical malformation.

Inferior vena cava is a composite vessel and Because of its complex embryology, great variations are possible which gives rise to malformations that impede the drainage which favour the development of thrombosis.
Method: 20 human cadavers were dissected during routine dissection during the year of 2011-2012 at AMC MET, AHMEDABAD.
Results: in the present study, we observed double inferior vena cava in one cadaver. In the same cadaver we found that left testicular vein drained into left inferior vena cava which in turn joined with left renal vein.
Discussion: anomalies of IVC are rare and are consequences of its complex mode of development. Left and double IVC are among the most frequent anomalies. Although these anomalies are rare they should be recognized by surgeons or radiologists to avoid complications during surgeries.

74. A spinous projection from superior ramus of pubis –A case report

Ghaus F, Faruqi N.A., Ansari M.S., Nasir N.,Varshney N.

Department of Anatomy, J.N.Medical College, Aligarh Muslim University, Aligarh, Uttar Pradesh, India

Fifty hip bones of both the sides were procured from the Department of Anatomy, Jawahar Lal Nehru Medical College, Aligarh Muslim University, Aligarh. One of them showed a rare spinous projection from the superior ramus of pubis 1.5 cm lateral to pubic tubercle. This process seems to be ossified septum between medial and intermediate compartment of femoral sheath. The finding is of great surgical importance in the inguinal region especially in cases of femoral hernia.

75. Age & sex determination of foetus from ilium –A medicolegal aspect

Kaur J[a], Gupta M[a], Kaur N[a], Goyal PK[b]

[a]*Department of Anatomy, Adesh Institute of medical Sciences & Research, Bathinda, Punjab, India*: [b]*Department of Forensic Medicine, Adesh Institute of medical Sciences & Research, Bathinda, Punjab, India*

Objective: The use of coxal elements for age & sex diagnosis from the skeleton is the primary & most widespread way of bringing us closer to the identity of dead individuals in archeological & certain forensic scenarios.
Methods: The sample used in this study was obtained from two decomposed bodies which were found in a river near Bathinda. The age & sex was determined from the measurements of ilium

with Vernier Caliper & morphology of Greater Sciatic Foramen was studied.

Results: Depth & breadth of ilium of 1st case was 25, 25 & 22, 21 and in 2nd case it was 28,28 & 24, 25 (mm) on Right & Left side respectively. The morphology (Shape) of greater sciatic foramen was studied & the shape was deep in both the foetuses.

Discussion: From the depth & breadth of ilium the age of 1st case was 32 wks & that of 2nd foetus was between 34-38wks. From the greater sciatic foramen the sex of both the foetuses was male.

76. Myocardial bridge –Congenital anomaly

Usharani.V, Vasudeva Reddy.J, Brindha.T.R

Department of Anatomy, Sri Padmavathi Medical College, Renigunta, Andhra Pradesh, India

Introduction: Myocardial bridging is a congenital coronary anomaly defined as a segment of major epicardial coronary artery goes intransmurally through the myocardium beneath the muscle bridge.

Methods: In our study we dissected 10 human hearts in routine dissection. Among 10 hearts we find one heart having myocardial bridge in a cadaver of male aged 45-50 years. The myocardial bridge is located at a distance of 40 mm from the origin of left coronary artery, which is measured by Vernier caliper. The myocardial bridge measures about 20 mm superoinferiorly.

Results: In the present study, 10 human cadaver heart specimens were dissected and observed for myocardial bridges over left anterior descending branch of left coronary artery which is most common site for myocardial bridge, Out of 10 hearts one specimen having myocardial bridge was observed, recorded and photographed and shown in poster presentation.

Discussion: The occurrence of myocardial bridges in relation to left anterior descending branch of left coronary artery present at a distance of 40 mm from its origin from the main trunk. In majority of cases this may be the causative factor for more frequent involvement of this branch leading to anteroseptal infarcts and arrhythmias due to involvement of purkinjee conducting system of heart. The occurrence of myocardial bridges pose definite problem in the interpretation of normal coronary angiographic studies.

77. Anatomical variation of left renal vein tributaries

Niranjan R, Sinha DN, Singh AK, Mohd Anas

Governmentt Medical College, Haldwani, Nainital, Uttarakhand, India

During dissection classes for undergraduates, male cadaver of middle age had two additional vein drainage into the left renal vein, beside Lt testicular vein and lt suprarenal vein, these vein were Lt Inferior phrenic vein and lt Lumbar ascending vein.

Previous studies suggest numerous veins draining into Lt renal vein vary in numbers, anatomy and nomenclature. Studies named as lt upper lumbar vein, Lt ascending lumbar vein, lt azygous lumbar vein, Lt inferior phrenic vein or an lt supernumerary adrenal vein.

Presence of variation can be challenging to urological transplantation and vascular surgery. These variations may account for unexpected injury and subsequent hemorrhage.

The cadaveric study revisited the anatomy of posterior tributaries of the LRV to draw attention to surgical importance of these variations.

78. The unilateral higher division of sciatic nerve –A case report

Gaur NL, Soni JS, Master DC

Government Medical College, Baroda, Gujarat, India

Introduction: Sciatic Nerve is a thickest nerve of the body; it is continuation of the upper band of the sacral plexus. The nerve having two divisions tibial and common peroneal which are attached together by fibrous sheath. It leaves the pelvis via greater sciatic foramen bellow the piriformis and then divided at the apex of popliteal fossa and supply greater part of lower limb however; it may divide within the pelvis and two components leaves the pelvis through different routes. This variation can lead to entrapment neuropathy called as piriformis syndrome. While dissecting adult cadaver in Department of Anatomy, Govt. Medical College Baroda, Gujarat. 14 cadavers were dissected and 28 guteal region were examined.

Result: In the 28 gluteal region examined higher division of sciatic nerve was noted in 1 [3.6%] right side gluteal region in male cadaver. Components were passing below the piriformis muscle.

Discussion: This type of higher division of sciatic nerve is quite higher. The variation in the division of sciatic nerve are important in surgico-clinical cases like nerve block, piriformis syndrome etc.

79. Communication between the musculocutaneous and median nerve

Rajveer Singh Chourasia, Vineet Gohiya, Raj Pandey

Index Medical College Hospital and Research Center Indore, Madhya Pradesh, India

Variations are common in the median and musculocutaneous nerve in the arm. The present case report is on the communication of the median nerve with musculocutaneous nerve, observed in a 60 year old Indian male cadaver during routine M.B.B.S dissection classes. The median nerve is formed by three roots one each from the lateral and medial cords of the brachial plexus and the third one is from the musculocutaneous nerve.

80. Anomalous branching pattern of axillary artery –A case report

Agarwal S[a]., Lalwani R.[b], Babu C.S.R.[c]

[a]*Maulana Azad Medical College, New Delhi, India*: [b]*All India Institute of Medical Sciences, Bhopal, Madhya Pradesh, India*: [c]*Muzaffarnagar Medical College, Uttar Pradesh, India*

Introduction: The arterial pattern of the upper limb is one of the systems that displays many variations in the adult human body. Accurate information regarding these variations is important during vascular & reconstructive surgery and also in evaluation of angiographic images. Axillary artery is the direct continuation of the subclavian artery from the outer border of the first rib. The course of the axillary artery is anatomically divided into three parts by the pectoralis minor muscle.

Method: The case was found during the routine dissection classes in the Department of Anatomy at LLRM Medical College on a 40-year old formalin fixed female cadaver. Axilla was carefully dissected, axillary artery & its branches were cleared & documented.

Results: There were unilateral variations in the branching pattern of the first and second part of the right axillary artery. From the first part of axillary artery arose two superior thoracic arteries. From the second part of axillary artery arose a common trunk for thoracoacromial, lateral thoracic and subscapular arteries. The common trunk first gave origin to thoracoacromial and subscapular artery. Subscapular artery in turn branched into lateral thoracic and circumflex scapular and then continued as thoracodorsal artery. The left axillary artery exhibited the normal branching pattern.

81. Bifid ureter with inferior polar artery –Case report

Chawre H K, Agichani S, Joshi S S

Department of Anatomy, Sri Aurobindo Medical College And Post Gradudate Institute, Indore, Madhya Pradesh, India

Case I : During routine dissection for under graduate students we came across a case of bifid ureter at its upper part on the left side in a 60 years old male cadaver. The bifid ureter running for about 1 inch united to form the left ureter. Rest of the course of ureter was normal. In the same case and on the same side, we found the Inferior polar artery arising from the abdominal aorta below the left renal artery, opposite the origin of the inferior mesenteric artery (L3 vertebra).

Case II : In another male cadaver of about 60years, on the left side only, a bifid ureter with Inferior polar artery was found. Here the artery was arising from the Inferior mesenteric artery in place of abdominal aorta.

The kidneys of both sides were normal in shape and size in both cases. The possible embryological basis of this unusual congenital malformation as well as the risk factors associated with this condition will be discussed. These anomalies assume great significance to the urologists, especially during renal transplantation.

82. Rare communication between ansa pectoralis and median nerve

Tigga S.R., Wadhwa S., Makkar P.

Department of Anatomy, University College of Medical Sciences, Delhi, India

Introduction: The Pectoral nerves arise from the brachial plexus and any anomalous formation of these nerves may complicate their intra-operative localisation. Knowledge of pectoral nerves is important in harvesting muscle flaps, lymph node dissection procedures and during breast augmentation.
Method: During routine dissection of axilla done for undergraduate students in a 70 year old male cadaver, a variant pattern of brachial plexus was encountered in the left axilla.
Result: The lateral pectoral nerve (LPN) arose by a single root from the lateral cord, just distal to the origin of the thoraco-acromial artery. It measured 2.8cms in length. From the medial cord, the medial pectoral nerve (MPN) arose just distal to the lateral thoracic artery and measured 3.3cms in length. Anterior to the second part of axillary artery, LPN & MPN formed a loop-the ansa pectoralis, immediately distal to thoraco-acromial artery. From the ansa pectoralis a conjoint nerve trunk arose, which was 3.2cm length and supplied the pectoralis minor and major. A nerve communication between the lateral cord and the medial root of median nerve (MrM) received a twig from the conjoint trunk of the ansa. The fibres of MrM and lateral root of median nerve united to form the median nerve, at the junction of upper and middle 1/3rd of arm.
Discussion: Such rare variations of the brachial plexus assume clinical significance during surgical exploration of the axilla in order to prevent deinnervation and subsequent atrophy of the pectorals and / or unexplained loss of power in few muscles supplied by median nerve.

83. Unilateral cleft hand –A case study

Pal Sudipto, Sarma J D, Talukdar K L, Dutta B C.

Silchar Medical College, Silchar, Assam, India

Introduction: Cleft hand is a rare condition with a prevalence rate of 1 in 90000 population where there is an abnormal cleft between the 2nd& 4th metacarpal bones. In our present study we noted such a case which will described in details during the time of presentation.
Method: A 4 year old girl was brought with a history of malformed right hand in the OPD of Gauhati Medical College, Assam. Relevant history was taken, clinical examination and radiological studies were done.
Result: The girl was first in birth order and her mother's age was 26. There was no history of consanguinity or history of drug intake or radiation exposure at the time of pregnancy. In her family, there was no known history of congenital anomalies.

On examination, a deep cleft was found in between 2nd and 4th metacarpal bones and soft tissue. The 3rd metacarpal and the 3rd digit phalanges were absent. The X-ray of the hand confirmed the absence of 3rd metacarpal and 3rd digit phalanges. The other hand and both lower limbs were morphologically and radiologically normal. No other systemic anomalies were found. The girl's karyotype was also normal.
Discussion: The case represents a condition where there is a genetic defect at the time of embryogenesis resulting in complete absence of some hand bones.

84. Radio-ulnar synostosis –A case report

Padmalatha.K[a], Prakash.B.S[b]

[a]*ESIC Medical college & PGIMSR, Rajajinagar, Bengaluru, Karnataka, India*: [b]*Dr.B.R.Ambedkar Medical College, K.G.Halli, Bengaluru, Karnataka, India*

During the routine Osteology demonstration for I year MBBS students, we came across the presence of fusion between radius and ulna. Synostosis / osseous union of any two bones can involve any part of the body. Synostosis between radius and ulna can take two forms- congenital and post traumatic. Radio-ulnar synostosis can be associated with other skeletal abnormalities, problems of heart, kidneys, nervous system, gastrointestinal system and certain genetic syndromes.

85. Prevalence of onodi cells in North Indian population –C T Analysis

Choudhary S., Siddiqui M.S., Pasricha N., Sehgal G., Tewari V., Dhawan R.

Era's Lucknow Medical College, Lucknow, Uttar Pradesh, India

Introduction: To find out prevalence of Onodi cells (sphenoethmoid cells) in north Indian population.
Methods: A retrospective analysis was performed on CT scans (head & neck) of patients visiting Radio-diagnosis Department of Era's Lucknow Medical College between January 2012 and May 2013.
Results: The overall prevalence of Onodi cells was found to be higher than previously reported in literature.
Discussion: Onodi cells are closely related with the optic nerve and carotid arteries. It is essential to identify the presence of Onodi cells prior to endoscopic sinus and skull base surgery in order to avoid deleterious complications.

86. Accessory head of biceps brachii muscle and it's clinical importance –case report

Srivastava G., Sthapak E., Siddiqui M.S., Pasricha N., Tewari V., Sehgal G., Nagwani M.

Era's Lucknow Medical College & Hospital, Lucknow, Uttar Pradesh, India

Introduction: We present and describe accessory head of biceps brachii muscle and its clinical importance. The biceps brachii is one of the muscles of the anterior compartment of the arm. It is characteristically described as a two-headed muscle that originates proximally by a long head and a short head. This case report is to describe the accessory head of origin of the biceps brachii.
Methods: During routine dissection at the Department of Anatomy, Era's Lucknow Medical College & Hospital, while dissecting the pectoral and arm region an accessory head of biceps brachii muscle was found.
Results: The short and the long heads of biceps brachii had their normal origin, and further details will be described in the poster.
Discussion: After reviewing the literature, this variation has not been previously described. Knowledge of the existence of the third head of biceps brachii and pattern of their attachment may become significant in preoperative diagnosis and during surgery of the upper limb.

87. Congenital anamoly of cochlea –A case report

Munsif T, Haider S.S, Siddique M.S,Tewari V, Sehgal G, Tyagi

Era's Lucknow Medical College & Hospital, Lucknow, Uttar Pradesh, India

Introduction: Congenital malformations of inner ear are rare anomalies. These occur due to arrested development at different stages of embryogenesis.
Methods: One such anomaly was recognized clinically in a 4yrs old girl who presented with congenital deafness. Thorough systemic & specific examination was done.
Results: Radiological examination (CT) revealed, that there was defect in the turn of cochlea i.e. cochlea was only one half turn.
Discussion: One rare anomaly of inner ear is Mondini dysplasia. Possibly it occurs due to arrested development of cochlea in its embryonic stage at about sixth week of gestation. In this anomaly only basal turn of cochlea is developed. There is deficient interscalar septum for distal one & half turn. Thus bony cochlea is restricted to 1.5 turns only. This causes sensorineural hearing loss.

88. Omphalo-cephalo-thoracopagus –A non invasive study

Kalyan G.S., Patra A; Upasna; Kaur H; Chabbra U

Department Of Anatomy, Government Medical College, Patiala, Punjab, India

Introduction: A hypothetical mechanism for conjoined twinning postulated by spencer suggests that ,after separation , monoovular twins fuse in one of the eight predictable homologous sites.
Methods: The fetal specimen under study can be classified into simple variant that is of cephalo-thoracopagus.The aim of the study was to reveal anomalies of the old formalised male omphalo- cephalo-thoracopagus twins by using current imaging techniques keeping it intact for posterity.
Results: Grossly, the line of fusion extended from the cranium upto the level of umbilicus. C T findings suggest cephalothoracopagus twinning, gestational age being 24wks (approx).An attempt was made to correlate the findings on embryological basis.

89. Variant course of left gonadal artery & unusual termination of right gonadal vein –A case report

Agichani S, Valimbe N, Joshi S.D.

Sri Aurobindo Medical College & Post Graduate Institute, Indore, Madhya Pradesh, India

Introduction: Gonadal arteries usually arise from anterolateral surface of abdominal aorta, just inferior to the origin of renal artery at the level of 2nd Lumbar vertebra, and then run inferolaterally on the posterior abdominal wall in front of Psoas major, ureter and genitofemoral nerve.
Method and Results: During routine dissection, we observed that the Left testicular artery was looping over Left renal vein, to pass between renal artery and vein, and then it followed its normal course. This variation can lead to Left renal vein compression with its attendant hazards. In the same cadaver, we found the right Testicular vein, terminating into Right renal vein, which normally opens into Inferior vena cava.
Discussion: The embryogenesis of these two variations shall be discussed in the light of available literature. Such anomalies of testicular vessels are of importance, especially to vascular surgeons and urologists.

90. Abnormal formation of medial cord of brachial plexus –A case report

Rupak Jyoti Baishya, Rubi Saikia, Roonmani Deka, Jyotirmoyee Lahon

Department of Anatomy, Assam Medical College & Hospital, Dibrugarh, Assam

Introduction: The anterior divisions of upper and middle trunks form a lateral cord, lateral to the axillary artery. The anterior division of the lower trunk descends at first behind, then medial to the axillary artery, forming medial cord. Posterior divisions of all the three form the posterior cord, at first above and then behind the axillary artery.

Method: We report a case of unilateral variation in the formation of medial cord of brachial plexus during dissection of female foetal cadaver of 34 weeks of gestation.
Discussion: It is very important to be aware of the variations of the cords of the brachial plexus during neurotization of brachial plexus lesions, shoulder arthroscopy by anterior glenohumeral portal and during reconstructive surgery of the shoulder joint. This variation could have potential clinical implications while performing axillary surgery.

91. Polydactyly –A case report

Gogoi Jyotirekha, Sarma Mukul, Lahon Jyotirmayee

Department of Anatomy, Assam Medical College & Hospital, Dibrugarh, Assam, India

Introduction: Polydactyly is the presence of a hand or a foot with more than five fingers or toes. It is the most frequent congenital anomaly of the human hand . Polydactyly is classified as "preaxial," which refers to a duplication of digits on the radial side of the hand and the tibial side of the foot, and "postaxial," in which the extra digits occur on the ulnar and fibular sides of the hand and foot, respectively.
Incidence: Different incidence was mentioned by different authors according to race and gender . In a 1963 study performed in New York City, the incidence of postaxial polydactyly in blacks was found to be 10.7 in 1000 live births, whereas in a comparable white population, the incidence was 1.6 in 1000 live births and polydactyly was noted to be twice as common in males as in females (Mellin 1963).
Differential Diagnosis: It may be isolated ,familial or due to some syndromes like - Trisomy 13, pseudotrisomy 13, Meckelsyndromes, EllisCreveld syndrome, McKusicksyndrome, DiGeorge syndrome and 22q11 deletion etc.
Case Report: A live born male foetus of 37 weeks gestation of a 24 years old primi, which was delivered by spontaneous vaginal delivery, was found to be having presence of six fingers in both hands .The new born was also shown to have some associated conditions- presence of micropenis , imperforate anus ,bilateral undescended testes ,and bilateral club foot.
Discussion: Since the extra digits are seen on the ulnar side of the both hands , hence the present case is bilateral Postaxial type of Polydactyly of hand.

92. An axillary arch muscle and its clinical importance –A case report

Jadhav S.M., Rokade S.A., Bahetee B.H

Department of Anatomy, B.J. Government Medical College, Pune, Maharashtra, India

Introduction: Axilla is the area which connects cervical & upper limb regions. Most of the important structures from neck region passes through axilla and reach the upper limb. Knowledge of muscular, vascular and neural variation in the axilla is of great clinical importance.
Method: During routine dissection for Ist M.B.B.S. students at Department of Anatomy, B.J. Govt Medical College Pune, in about 80 years old male cadaver.
Results: We found muscular slip in the right axillary fossa that originated from Lattisimus Dorsi muscle and attached to the deep surface of tendon of coraco-brachialis muscle (described in literature as Axillary arch muscle/Axillary arch of Langer).The axillary artery and brachial plexus did not show any variation. No similar muscular slip was observed on left side. The compression of neurovascular bundle of axilla by an axillary arch muscle is discussed in literature.
Discussion: Presence of an axillary arch muscle has immense clinical and morphological significance.

93. Complete dorsal wall defect in dry human sacrum –A case report

Nomulwar S.G., Patil A.D., Bahetee B.H.

Department of Anatomy, B. J. Government Medical College, Pune, Maharashtra, India

Sacrum is a large triangular bone formed by fusion of five sacral vertebrae and intervertebral disc. The vertebral foramina of all the five sacral vertebrae fuse to form the sacral canal which is triangular in cross section. The sacrum forms the lower part of vertebral column as well as postero-superior wall of pelvic cavity. While studying the sacra available in Department of Anatomy B. J. Govt.Medical College, Pune we noticed a sacrum showing complete absence of the dorsal wall of the sacral canal. Multiple studies in past have suggested dorsal wall defect of sacrum, but very few have highlighted the complete dorsal wall defect as found in our case.

The knowledge of dorsal wall agenesis of sacral canal is of great value in various situations like, interpreting the radiographs of sacral spine for radiological approaches, for successful administration of caudal epidural block and in treating the cases of neurological involvement of urinary bladder and rectum.

94. Syndactyly –A case report

Bordoloi Rashmi Rekha, Talukdar Kunjalal

Department of Anatomy, Gauhati Medical College & Hospital, Guwahati, Assam, India

Introduction: Syndactyly is a condition where in two or more digits are fused together. Normally, mesenchyme between prospective digits in hand- and footplates is removed by cell death (apoptosis). In one per 2,000 births this process fails, and the result is fusion between two or more digits.
Method: In the present study, a four years old male child reported in the Plastic surgery OPD of Gauhati Medical College with the chief complaints of fusion of the medial three fingers of both the hands.
Results: There occurred fusion of the medial three fingers of both the hands. No abnormalities were noted on general and systemic examination. Examination of the hands revealed a bilateral, complete type of syndactyly. There is no bony union between middle and ring fingers so it is a simple type and bony union is present between ring and little fingers so it is a complex type of syndactyly.
Discussion: The patient's anomaly has been rectified with corrective procedure.

95. Lobar variation in lungs in a human cadaver –A case report

Raut R.M., Baig M.M. , Hosmani P.B., Masaram N.B.

Dr. V. M. Govt. Medical College, Solapur, Maharashtra, India

Introduction: The lung which is a vital organ of respiration normally have three lobes on right side and two lobes on left side having oblique fissure in left lung and oblique and horizontal fissure in right lung. Although many clinicians have observed variations in lobar pattern with the aid of CT-scans, only few studies on gross anatomical specimens have been reported.
Methods: In this report we present variation in both lungs as seen in dissection hall of Anatomy Department of Dr. V. M. Govt. Medical College, Solapur, Maharashtra.
Results: The right lung has only oblique fissure while horizontal fissure is absent and on left lung oblique fissure is absent.
Discussion: The variation in fissures and lobes present in this report are clinically important in appreciating lobar anatomy for identifying bronchopulmonary segments. Knowledge of anatomical variation is essential for interpreting radiological images performing lobectomies and also for general knowledge to medical personnel.

96. Adult human spiral ganglion –Three cell types and their morphology

Kaur C.[a], Nag T.C.[a], Bhardwaj D.N.[b], Roy T.S.[a]

[a]*Department of Anatomy, All India Institute of Medical Sciences (AIIMS), New Delhi, India*: [b]*Department of Forensic Medicine, All India Institute of Medical Sciences (AIIMS), New Delhi, India*

Introduction: Spiral ganglion neurons (SGNs) are the primary afferent neurons that transmit auditory information from the organ of Corti to the cochlear nucleus via the cochlear nerve. The aim of present study is to study the morphology of the neurons in the adult human spiral ganglion.
Methods: Tissue samples were obtained from cases without any known history of inner ear disease or hearing loss from mortuary, AIIMS with due ethical permission. The temporal bones were fixed in 4% paraformaldehyde (0.1M PB, pH 7.4), decalcified with 10% EDTA and dissected. Frozen 40μm thick coronal sections, were cut and stained with cresyl violet for morphometric analysis by using stereoinvestigator software, (Microbrightfield Inc. VT, USA).
Results: Neurons of different types were identified scattered among the satellite cells. The average diameter of the neurons ranged from 9.65 to 19.0μm. According to their diameter and cytology, SGNs were classified into three types, small, medium and large (15%, 57% and 28% of the total population respectively). The mean numerical density and total number of neurons was 1211/mm2 and 39945 respectively.
Discussion: Although, classically only two types of neurons has been described in the human spiral ganglion, we have noted three types of neurons which will be interesting for future study. This study may provide a new insight in the existing knowledge about the morphology of the spiral ganglion.

97. Pyramidal lobe –A clinically significant variant

Chauhan S., Gupta S., Gupta A., Mogra K., Agrawal R., Yadav S., Ram R., Dagal N.

Department Of Anatomy, S.M.S. Medical College, Jaipur, Rajasthan, India

The present case report describes a pyramidal lobe of approx. 2.5cm in length, arising from the thyroid gland from the junction of isthmus with the left lobe of thyroid gland projecting towards the hyoid bone, during routine dissection of head and neck region in middle-aged male cadaver in the Department of Anatomy, S.M.S. Medical college, Jaipur, Rajasthan.

The pyramidal lobe is an accessory lobe of thyroid gland and is a not-always prominent feature. It develops from the distal part of the thyroglossal duct.

Since it is a normal component of the thyroid gland, of varying position and size, with pathological changes in benign and malignant diseases, it should always be examined during thyroid surgery and mandatorily removed in total and subtotal thyroidectomies.

Due its frequent presence it may not be fascinating to the Anatomists but can definitely challenge the skill of operating neck surgeons performing thyroidectomies, lobectomies and isthmusectomies and Otolaryngologists performing tracheostomies, tracheotomies and laryngotomies. The wide range of variations in the pyramidal lobe necessitate the pre- operative ultrasonographic examination or scintigraphical images or intense contrast enhancement on CT/MRI scan for total anatomical details enabling relatively a safer surgery.

98. Anomalous lobar pattern of right lung with accessory sulcus of liver in female cadaver

Chauhan S., Kaur H., Agrawal R., Gupta A., Yadav S., Ram R.

Department of Anatomy, S. M. S Medical college, Jaipur, Rajasthan, India

Introduction: The right lung classically has two fissures, an oblique and a horizontal, dividing it into three lobes namely the superior, middle and lower. The anomaly of the lobar pattern has been described by many research workers on CT scans, where as, there are fewer studies on gross anatomical specimens.
Method: In the present case, which was incidentally detected in department of anatomy, s.m.s medical college, Jaipur, we report three fissures dividing the right lung into four lobes.
Results: There was one accessory fissure on medial side of middle lobe on right side. Such abnormal fissures and lobes are clinically important for identifying broncho-pulmonary segments. In same cadaver we found an accessory sulcus on diaphragmatic surface of right side of liver. The AS may be due to a developmental defect, or may be acquired as a result of pressure by any superficial structure.
Discussion: Anatomical knowledge of anomalies of fissures and lobes of organs may be important for surgeons performing lobectomies, for radiologist during interpretation of X-ray and CT scans, interpreting CT images of injected veins.

99. Anomalous branching of axillary artery

Dhurandhar D., Rani.P, Chauhan.R

Department of Anatomy, University College of Medical Sciences & GTB Hospital, Delhi, India

During routine dissection class of MBBS students, abnormal branching pattern of axillary artery was observed in the left axilla of a 65 years old Male cadaver. Right axillary artery branched normally in this cadaver.

Left axillary artery after giving off usual branches from its first and second part bifurcated into a medial and a lateral division posterior to the pectoralis minor muscle. Medial division supplied pectoralis major and minor muscles and then continued as the

brachial artery. The lateral division gave a thin anterior circumflex humeral artery, posterior circumflex humeral artery, and subscapular artery. It then continued as arteria profunda brachii.

Vascular surgeons and interventionists must be aware of such unusual branching pattern of axillary artery so as to avoid vascular catastrophe while operating in the axillary region. For correctly interpreting the angiograms of the axillary region, radiologists must also know about the abnormal presentation of the axillary artery.

Embryological origin and the clinical importance of the variation in the branching pattern of axillary artery will be discussed at the time of presentation.

100. Anomalous arterial supply of the adrenal gland

Rani P, Suman & Nagar M

Department of Anatomy, University College of Medical Science & GTB Hospital, Delhi, India

Introduction: Adrenals are one of the important endocrine glands of the body and a rich arterial supply is essential for the optimal functioning of the gland. Each adrenal is usually supplied by superior, middle and inferior suprarenal arteries which arise from the inferior phrenic artery, abdominal aorta and renal artery respectively. Knowledge of any variant arterial architecture of the suprarenal gland is required for surgical and radiological interventions of upper abdomen to avoid any complications.
Method: In the routine dissection of the abdomen in an elderly female cadaver for undergraduate teaching at University College of Medical Sciences, Delhi, we encountered a variation in the arterial supply of the right adrenal, whereas the left adrenal gland had a normal arterial supply.
Results: The abdominal aorta gave off the celiac trunk and one cm inferior to it the superior mesenteric artery arose. At the same level we observed a short common trunk to its right which divided into an inferior phrenic and superior suprarenal artery. The right ovarian artery had a high origin from the abdominal aorta and gave off 2 branches to the adrenal gland probably these were the middle & inferior suprarenal arteries. The right renal artery had no adrenal branch.
Discussion: Such anomalous arterial supply has an embryological basis and its knowledge is extremely important for the surgeons to avoid fatal complications.

101. Unilateral trifurcate branching pattern of sural nerve

Shrivastava P[a], Suri R[b], Kumar R[c]

[a]*North DMC Medical College & Hindu Rao Hospital, Delhi, India:* [b]*Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi, India*

Introduction: The sural nerve is commonly used for both diagnostic as well as therapeutic purposes due to its easy accessibility. In view of the documented risk of disabling damage following lesion to the sural nerve, the surgeon needs to exercise special care while operating in the proximity of sural nerve. Thus, awareness about the variations in the topographical anatomy and distribution pattern of sural nerve is relevant for surgeons performing reconstructive procedures.
Methods: The present neural variation was noted in the right foot of an adult male cadaver during the course of preclinical educational training programme for medical students. Although the area of distribution of sural nerve is well defined in the anatomy textbooks but its branching pattern is not mentioned.
Results: The sural nerve was found to originate as usual from the tibial nerve in the popliteal fossa. It descended upto the ankle region where it was seen trifurcating into three branches: anterior, intermediate and posterior. This point of division of sural nerve was located 2.8cm distant from posterior tubercle of calcaneum and 2cm from the tip of lateral malleolus. The anterior branch traversed forwards and was seen supplying the third and fourth interdigital clefts. The intermediate branch coursed along the lateral border of the foot upto the lateral border of fifth toe. The posterior branch innervated the lateral and posterior aspect of heel.
Discussion: The uniqueness of the present report lies in the fact that there is trifurcate branching pattern of the sural nerve coexistent with the nerve innervating the region of heel as well.

102. Anomolous communication between the branches of the posterior division of mandibular nerve

Bhadoria P. and Nagar. M, Wadhwa S.

University College of Medical Sciences, New Delhi, India

Introduction: The posterior division of the mandibular nerve is known to have three branches in the infratemporal fossa namely lingual, inferior alveolar and auriculotemporal nerves. These branches mainly innervate the mandibular teeth and all the major salivary glands. The knowledge of any unusual communications among these branches is highly significant due to the various treatment procedures undertaken in the region.
Methods: During dissection in the head and neck region in the Department of Anatomy, University College of Medical sciences & Guru Teg Bahadur Hospital, Delhi, we encountered an unusual communication between the branches of posterior division of mandibular nerve in a thirty five year old male cadaver.
Results: A communication between the Lingual nerve and inferior alveolar nerve was observed and the chorda tympani joined the lingual nerve distal to the communicating branch. There was another rare communication between the inferior alveolar and the auriculotemporal nerve. A small abnormal twig arose from the inferior alveolar nerve and joined the same nerve. Such communicating branches between nerves are developmental in origin.
Discussion: It is well known that the variations in the branching pattern of the mandibular nerve frequently account for the failure to obtain adequate local anesthesia in routine oral and dental procedures, and also for unexpected injuries to branches of these nerves during surgeries. A thorough knowledge of the relevant anatomy is therefore important.

103. Pancreas divisum –A case report

Vinay Kumar .N

Department of anatomy, Chennai Medical College Hospital and Research Centre, Trichy, Tamilnadu, India

Introduction: Pancreas Divisum is the most common congenital anomaly of pancreatic ductal system occurring in approximately

5 to 11 % of population at autopsy series and 3.25% of patients undergoing ERCP. This anomaly results when the ventral and dorsal pancreatic ducts fail to fuse during the seventh week of gestation.

Methods: In a 43 year old male cadaver during routine dissection the pancreas was found to have retained the embryonic pattern.

Results: Dorsal pancreatic duct was formedin the tail by junction of several interlobular ducts and it traversed the body and neck midway between the superior and inferior borders of the pancreas. Then it coursed transversely to the right in the upper part of the head towards minor papilla anterior to CBD. The interlobular ducts from most of upper third of head joined the dorsal duct only. The duct terminated on to minor duodenal papilla which was 4.3cm antero -superior to the major papilla and measured 15.6 cm.

In the left end of the lower part of the head the Ventral pancreatic duct was formed by union of superior tributary from deeper portion of the upper part and an inferior tributary from the lower part and uncinate process. It coursed transversely to the right towards the major papilla and terminated by type pattern. The Length of the hepatopancreatic ampulla and the ventral duct measured 10mm and 3.2cm respectively.

Both the duct exhibited positive patency.

Discussion: Congenital abnormalities of Pancreas such as this may be encountered in adulthood as well as in childhood which may be significant or asymptomatic. In a case of complete pancreas divisum like this the ventral duct drains only the ventral pancreatic bud. Whereas the inadequate drainage of the majority of the gland into the minor papilla through the dorsal duct, may be the cause for recurrent intermittent pancreatitis experienced by these persons.

104. Unilateral double testicular vein

Siddaraju.K.S, B.A.Devaiah, Krishna.G, Ankamma S, Ramanjaneya Reddy.G.

Department of Anatomy, KMCT Medical College, Manassery, Mukkam, Calicut, Kerala, India

Normally pampiniform plexus unites at superficial inguinal ring to form four veins, and at the deep inguinal ring they join to form two veins, finally a single testicular vein. Right testicular vein drains in to inferior vena cava and left testicular vein drains in to left renal vein. But here we found a case, during routine dissection of middle aged right upper limb of male cadaver, for 1st MBBS students in the year 2013. The unilateral double testicular vein in the right side, those were draining into - one to inferior vena cava another to right renal vein. Compare to available literature present anomaly is very rare case.

105. Inferior alveolar nerve winding around the maxillary artery –A case report

Ramanjaneya Reddy.G, B.A.Devaiah, Siddaraju.K.S, Krishna.G, Ankamma.S.

Department of Anatomy, KMCT Medical College, Manassery, Mukkam, Calicut, Kerala, India

The inferior alveolar nerve is the largest terminal branch of posterior division of mandibular nerve in the infra temporal fossa. Normally it runs vertically downwards laterally to the medial pterygoid and medial to lateral pterygoid then it enters the mandibular foramen accompyning with inferior alveolar artery. The 2nd part of maxillary artery runs superficial to the lateral pterygoid and inferior alveolar nerve will not wind's the maxillary artery normally. But here we found a case, during routine dissection of middle aged male cadaver for 1st m.b.b.s.students in the year 2013. The inferior alveolar nerve was coming from posterior division of mandibular nerve, then it was splitting to wind's the maxillary artery. Later it was fused and continues with its normal course. Present anomaly is rare case.

106. Efficacy of immediate ersus 24 hour culture method for cytogenetic analysis in acute lymphoblastic leukemia

Jha S, Kaul JM,Kumar D, Singh T, Dubey AP, Pathi Tl, Kapoor S

Maulana Azad Medical College, New Delhi, India

Introduction: Karyotyping is a technique that provides critical diagnostic and prognostic information in Leukemias. The success of a specific culture method is assessed by the number of metaphase spreads it yields. The success rate depends on sample conditions, type of disease and culture conditions. We compared the success rate of immediate culture method and 24 hour culture method in cytogenetic analysis of pediatric Acute Lymphoblastic Leukemia (ALL).

Methods: Bone marrow aspirates from 20 hematologically confirmed cases of ALL were collected. All specimens were processed by immediate method and 24 hour culture method. Numbers of analyzable metaphase spreads yielded by both methods were compared.

Results: The success with immediate culture could not be achieved for any of the cases after 3 attempts. The success rate of 24 hour culture was 100 % as all cultures grew but in 6 cases the cells could not produce analyzable metaphase spreads.

Discussion: Our results indicate that the likelihood of detecting chromosomal abnormality in leukemic samples increases with culture time. Lack of success with immediate method could be because of fragile state of rapidly growing cells and difficult growth of malignant cells in utero.

107. Anomalous formation of inferior vena cava –Developmental and clinical importance

Mishra S, Mahajan A & Verma R

Maulana Azad Medical College, New Delhi, India

Introduction: Presentation of anatomical, embryological basis and clinical significance of unusual variations of major veins forming the inferior vena cava are of great significance.

Method: During routine cadaveric dissection in 50 yr old female cadaver, variations were observed in the veins forming the inferior vena cava. The vessels were dissected carefully, measurements were taken and photographed.

Result: Unusual variations of the major veins forming the inferior vena cava were observed as follows: The right common iliac vein was absent. Thus the inferior vena cava was formed by the union of left common iliac vein and, right external and internal iliac vein. The right external iliac vein further showed

duplication before termination into inferior vena cava. It was interesting to note that the right external iliac artery coursed through the gap between the duplicated external iliac vein.
Discussion: The complex development of the IVC, from the three primitive paired veins are responsible for numerous variations in the common basic plan in the venous return from the lower part of the body ; below the diaphragm. These anomalies may not be detected during life but have a great clinical significance in radiological and surgical practice.

108. Double cystic artery

Alam Mohammed Saiful, Talukdar Kunjalal

Gauhati Medical College, Gauhati, Assam, India

Objective: A case of double cystic artery. **Method**: During routine dissection in the Department of Anatomy of Gauhati Medical College, a case of double cystic artery was observed in a properly embalmed male cadaver.
Result: The double cystic arteries originated from the right hepatic artery adjacent to each other. One of them was supplying the upper surface of the gall bladder while the other one was supplying the lower border.
Discussion: As cholecystectomy is a very common surgical procedure performed throughout the world, a proper knowledge of the possible different variations of the cystic artery is of utmost importance.

109. Variations in the muscles of extensor compartment of forearm –A case report.

Tiwari S, Pakhiddey R, Mahajan A.

Department of Anatomy, Maulana Azad Medical College, New Delhi, India

Introduction: During routine cadaveric dissection, variations were observed in the muscles of posterior compartment of the forearm. Anatomical relations were documented and their embryological basis and clinical importance was stressed upon.
Methods: During routine cadaveric dissection in a formalin fixed 58 year old male cadaver, variations in the posterior compartment of the left forearm were noted, measured and appropriately photographed.
Results: In the posterior compartment of the left forearm an accessory muscle was found originating from the posterior surface of ulna, just distal to the origin of extensor indicis. It traversed along with the tendons of extensor digitorum and extensor indicis in a common compartment underneath the extensor retinaculum and inserted onto the dorsal surface of the base of the proximal phalanx lateral to the tendon of extensor digitorum for the middle finger. Also, the extensor digitorum muscle divided only into three tendons instead of four- one each for the index, middle and ring finger. The three tendons inserted normally via the dorsal digital expansion but, the tendon for the ring finger gave an additional slip on the ulnar aspect, which inserted separately onto the base of the proximal phalanx of the ring finger.
Discussion: Accessory muscles in the posterior compartment of forearm may be confused with soft tissue conditions like a ganglion. These variations must be brought to the knowledge of the surgeons performing hand surgeries for tendon transfers and muscle grafts.

110. Unusual presence of wormian (sutural) bones in human skulls

S. V. Pandit, Sugat Kawale, Yogeshkumar Ganorkar

Shri. Vasantrao Naik Government Medical College, Yavatmal, Maharashtra, India

Introduction: Wormian bones are subset of the small intrasutural bones that lie between the cranial sutures formed by the bone of skull vault. They are formed due to additional ossification centre in or near suture. They are usually considered as normal variant. Sometimes they appear in great numbers in hydrocephalic skulls. The aim of present study is to:

1. They are studied and reported as ethinic variables, being of interest to human anatomy
2. In order to contribute to the knowledge of sutural bones and their occurrence
3. To avoid confusion in diagnosis in cases of skull fractures.

Method: The presence study was carried out on 20 dried adult human skull obtained from the department of Anatomy, Shri. Vasantrao Naik Government Medical College, Yavatmal. The various sutures were examined systematically for the presence & absence of wormian bones.
Result: Out of the 20 skull, 4 skull were found to have wormian bones, which were located in lambdoid sutures and 1 in squamosal sutures. wormian bones was roughly triangular in shape and its sutures were not well marked.
Discussion: The present study indicate that wormian bone may be present in coronal, squamoral and sagittal suture in addition to the usual site in the lambdoid sutures it is important for Neurosurgeon and Radiologist to be aware of the presence of wormian bone in these sutures as they may be mistaken for fractures in cases of head injury.

111. Acephalic amelic monster

Kariappa M, Iqbal S

Department of Anatomy, Amala Institute of Medical Sciences, Trichur, Kerala, India

Introduction: Acardia is a rare and severe congenital malformation usually found in monozygotic twin pregnancy (one in 35,000 births-James, 1977).It is characterized by absence of functioning heart. However we have found a monster with absence of head and upper limbs but with a functioning heart.
Case Report: A 28 year old gravida 3, para 2 delivered twins at 36 weeks gestation by caesarean section.
Result: Placenta was monochorionic and diamniotic. The case was diagnosed by ultrasound antenatally.

The first twin is a normal baby girl weighing 2.9 Kg and has no obvious congenital malformations.

The second twin was a well preserved monster weighing 2 Kg and had the following major congenital abnormalities:

Absence of Head & Neck, absence of both upper limbs. Thoracic cavity was small in size. Spine small in size. Multiple ribs seen bilaterally. Heart is seen within thoracic cavity. Both lungs are seen. Bowel loops are seen. Liver is small in size. Kidneys seen bilaterally. Femur length5.75 cms corresponding to gestational age of 30 weeks and 1 day.

112. An unusual course of third part of vertebral artery along with associated anomalies of upper cervical vertebrae - Klippel Feil syndrome –A case report

Mittal P S, Joshi SS, Joshi SD

Department of Anatomy, Sri Aurobindo Medical College and Post Graduate Institute, Indore, Madhya Pradesh, India

During routine dissection of Suboccipital triangles, we found that the vertebral artery emerged below the posterior arch of atlas bilaterally. Further dissection displayed that the left half of posterior arch of atlas was replaced by ligamentous band, which was closely applied to the posterior margin of foramen of magnum. Bilaterally at the site of emergence of the vertebral arteries, the second cervical nerve had a large dorsal root ganglion which was present inferomedial to the artery.

There seems to be a fusion of laminae of second (Axis) and third cervical vertebrae on both the sides, as in Klippel Feil syndrome; although the spines are distinct. On the left, the gap between the ligament and the lamina of the Axis vertebra is wide. From the anterosuperior part of laminae of Axis vertebra, there are bony plates projecting upwards and laterally, leading to a bony bossing in this region.

Radiological examination confirms Klippel Feil syndrome.

113. Unilateral variant origin of first lumbrical

Bhingardeo A.V, Khambatta S.N

Topiwala National Medical College, Mumbai, Maharashtra, India

Present report describes the variant origin of first lumbrical in left hand in a male cadaver during routine dissection. This variant first lumbrical originated from the tendon of flexor digitorum superficialis for index finger while second, third, fourth lumbricals were found to be originating from flexor digitorum profundus .The variant origins of first and second lumbricals are common .The variant lumbrical is found to be supplied by median nerve. It can lead to trigger finger and carpal tunnel syndrome. It can produce cramping discomfort in the forearm due to check-rein effect on flexor digitorum superficialis.

114. Spinal instrumentation –Anatomical perspective

Verma V, Kumar D, Vasudeva N

Maulana Azad Medical College, New Delhi, India

Introduction: To know about the various parameters which are important during spinal instrumentations used to treat spinal diseases.
Methods: 150 dry human vertebrae of cervical (subaxial), thoracic and lumbar were studied for morphometric evaluation using vernier callipers and goniometer.
Results: The vertebral column displayed cranio-caudal trends from cervical to lumbar region.

Cervical Region

Vertebral Body Morphometery

Mean AP diameter gradually increased while maximum transverse diameter increased down the column showing a marked increase at C6 vertebral level. The vertebral height (anterior) showed an increase from C3 to C5 and Height (posterior) decreased from C3 to C6 and increased thereafter at C7.

Thoracic Region

Vertebral Morphometery

The AP diameter increased from T1 to T3. Maximum transverse diameter decreased from T1 to T4.

Vertebral Pedicle morphometery

Transverse isthmus width decreased from T1 to T8 and thereafter increased to T12 on either side.

Pedicle angle

Right and left Pedicle angle remained the same from T4 to T11 and at T12 showed an increase.

Lumbar Region

Vertebral Body Morphometery

The mean AP diameter increased from L1 to L3, abruptly increasing at L5. Transverse diameter was more than AP diameter at all lumbar vertebral levels. The anterior height was more than posterior height at all levels.

Pedicle morphometery and Pedicle angle

The pedicle height and angle gradually increase from L1 to L3.
Discussion: Vertebral morphometeric parameters are critical for spinal fixation surgeries to pinpoint the exact location and angle of the screw in the pedicle.

115. Rapid Golgi staining of rostral part of nucleus of the solitary tract (rNST) in human foetus

Sharma R., Kaul J. M., Mishra S.

Maulana Azad Medical College, New Delhi, India

Introduction: To characterize various cell types in the nucleus of the solitary tract and to study their dendritic branching by Golgi study in human foetus.
Methods: Foetuses were procured from the department of Obstetrics and Gynaecology after obtaining institutional ethical clearance. Brainstems of three foetuses of gestational age 14 weeks, 16 weeks and 38 weeks were processed for Golgi staining using the standard protocol for rapid Golgi method.
Results: Golgi staining in 14 weeks showed few small cells. There were some cells having very thin and long processes and some with short and multiple processes. At 16 weeks, the Golgi impregnated neurons were fusiform, granular and multipolar in shape with definite cell processes. Minute bristle like fine appendages were seen along the processes. In 38 weeks, the staining showed fusiform and multipolar cells along with their processes. Well defined spines were seen along the dendritic shaft. Spines were less in number along the dendrites of multipolar cells compared to fusiform cells.
Discussion: The present study concludes that as age advances the rNST becomes more organized with well differentiated neurons and neuronal cell processes.

116. Cranio facial anthropometric measurements among gond and non-tribe boys community of Mungeli District, Chhattisgarh (age-group 5–18 years)

Raathia D.S., Deshpandey S., Banerjee C., Goyal M.

Department of Anatomy, Pt. J.N.M. Medical College, Raipur, Chhattisgarh, India

Introduction: Anthropometry is applied to obtain measurements of living subjects for identifying age, stature, and various dimensions related to particular race or an individual. Population based cross sectional study was carried out in Patharia block and its neighbouring areas
Method: This study included 550 healthy people aged 5-18+ years belonging to pure race of gond and non-tribe community boys. Head length, nasal ergonomics and total stature were measured for each selected individual. Student 't' test was applied to identify significance of the variables.
Result: The results showed a significant variation in facial parameters between both communities only after puberty. It was also revealed that gond males were taller with larger head length, longer nasal length and nasal height after maturity. Similarly nasal breadths of gond females were broader where as in non-tribes, gond had broader nose than that of the non- tribes.
Discussion: Therefore it was concluded that anthropometric measurements can play significant role in determining the sex and ethnicity of characteristic pure races of national importance.

117. Developing embryo –A grip for learners

Baro Baneswar

Department of Anatomy, Gauhati Medical College, Guwahati, Assam, India

Introduction: To give a new idea to undergraduate students by showing a model of the developing embryo in the Department Of Anatomy, Gauhati Medical College, Guwahati.
Method: A 3(three) dimensional model of the developing embryo showing different features was prepared and shown in the demonstration classes since 3 years.
Results: This model was seen to be helpful in better understanding of the structures of developing embryo like placenta, amniotic cavity, yolk sac, extra-embryonic coelom, trilaminar germ disc with its derivatives like, midline notochord, neural tube, somites, intermediate mesoderm, lateral plate mesoderm, prochordal plate, cloacal membrane and intra-embryonic coelom.
Discussion: This model has added advantages like it can be used in the department as well as outside the department as a teaching tool.

118. Jarcho Levin syndrome –A rare case

Sharma A, Kapoor K, Kochhar S, Huria A.

Government Medical College and Hospital, Chandigarh, India

Introduction: Jarcho Levin syndrome is a rare genetic defect which results from malformed bones in the spine and ribs.
Method: A case was found during the routine fetal autopsy in the department of anatomy, government Medical College Chandigarh.
Result: Mother was 24 year old, gravida two with no live issue. First pregnancy was conceived after three yearlong treatments for infertility. That pregnancy (male fetus) also resulted in spontaneous abortion at 19 weeks in 2011. On autopsy the fetus was found to have hydrops and congenital malformation. Indication for the MTP of Present pregnancy was U/S findings at 17+5 wks which revealed multiple fetal malformations of ribs, vertebrae, short neck and trunk, scoliosis and diaphragmatic hernia on left side). On external examination fetus had normal facial features with short neck, mild lordosis, short thorax and protuberant abdomen. On internal examination the thoracic cavity was small. There were 5 ribs present on each side. Lower ribs were fused. Intercostal spaces were reduced. The diaphragmatic hernia was present on both sides. On left side stomach was protruding in to the thoracic cavity. The lungs were hypoplastic. The incidence of this syndrome is sporadic. The inheritance varies from autosomal recessive to autosomal dominant causing different degrees of outcome in patient. It occurs with equal frequency in both the sexes. The cause of this syndrome is said to be the failure of the proper vertebral segmentation.
Discussion: The syndrome can be classified as type I and type II. The sonographic findings are dwarfism with short thorax and crab like rib cage anomalies along with multiple vertebral segmental defects. Associated anomalies include club foot, hernia, urinary tract anomalies, anal atresia and cleft palate. Prognosis of live born fetus depends on severity. Death usually occurs due to respiratory insufficiency. This case was classified Type I Jarcho Levin syndrome.

119. Edward syndrome – A report of two cases

Sharma A, Kapoor K, Kochhar S, Huria A.

Government Medical College and Hospital, Chandigarh, India

Edwards syndrome is also called as trisomy 18. Two cases of Edwards's syndrome were reported in fetuses during fetal autopsy at Government Medical College Chandigarh. In first case mother was 30 years old, primegravida. Medical history, past history and family history was not suggestive of any etiological factor responsible for the defect. The indication for the termination of present pregnancy was CMF shown on U/S. The external examination showed Small jaw, anteroposterior lengthening of skull. Overlapping of the 2nd and fifth digit over 3rd and 4th digit were seen. Hips on both the side were adducted. Fetus also had bilateral rocker bottom feet. Internal examination showed no other congenital defect.

The second case was 22+1 wk. old fetus. Mother was 26 year old second gravida with no live issue. First conceptus was also diagnosed as the trisomy 18 case on U/S and was aborted at PGI. This time also abnormality was noticed on U/S. The external examination showed Small jaw, anteroposterior lengthening of skull .Neck was short. Little finger was absent in left hand thumb on both the hands were adducted. Club feet were present on both sides. In right foot overriding of 2nd toe on big toe was seen. Internal examination showed no other congenital defect.

Edward syndrome is a broad terms that refers to a constellation of congenital anomalies affecting caudal spine and spinal cord, hind gut, urogenital system and the lower limbs. This is the second most common trisomy after Down syndrome, with a female preponderance. The incidence increases with increase in maternal age. The syndrome is caused by meiotic non disjunction event. The syndrome is classified in three groups. The diagnosis of the syndrome is based on genetic analysis and U/S findings. The differential diagnosis includes Patau syndrome Charge syndrome and Vectral syndrome. The present cases were classified as type I.

120. Conjoined twins (Thoraco-Omphalopagus) –A case report

Prasad Arun, Kapoor Kanchan, Sharma Anshu, Abraham Joseph

Department of Anatomy, Government Medical College, Chandigarh, India

Introduction: Conjoined twins is a rarely seen congenital anomaly with severe mortality. Among the different variety of conjoined twins, Thoraco-omphalopagus is the most common type, wherein the two foetuses are joined at thorax and upper abdomen region. In this type of twins usually there is single heart, but lungs will be separate. In GIT, the foregut will be separate, but midgut may be shared by both twins. Hindgut will be separate. The exact cause is unknown, but it is mostly considered to be an irregular division of the zygote.
Method: One such case was observed during routine foetal autopsy performed in Dept of Anatomy, GMCH-32, Chandigarh. The mother was 21yrs old primi gravida and the condition was diagnosed at the time of USG examination at 13+6 weeks of gestational age. Autopsy was performed after taking full consent. The foetuses had single umbilical cord and sex of both the foetuses was male.
Result: After autopsy it was found that both foetuses shared single heart, stomach, small intestine, large intestine, liver and spleen. However there was development of separate lungs and organs of Genito-urinary system.
Discussion: There are two theory proposed for the formation of the conjoined twins. A fusion theory which is more accepted and other one is fission theory.

121. The embryological and surgical relevance of unilateral double testicular veins —Case report

Sharma M, Gandhi S, Mehta V, Suri RK, Rath G

Department of Anatomy, Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi, India

Introduction: Testicular veins exhibit wide variations in their course and site of termination. These variations become significant during ligating the abnormal venous dilatation and collaterals thereby reducing the chances of recurrence of varicocele which is a specific pathological condition causing male infertility. The aim of present study is to study the course and termination of testicular vein
Methods: During the routine educational and research study in Vardhman Mahavir Medical College in 2013, a variation in the unilateral testicular vein was observed in a 50yr old male cadaver.
Results: There were double testicular veins on the left side. The medial testicular vein was draining in to the left renal vein at right angles. The lateral vein was coursing in the same direction as that of the medial vein, bifurcates before finally draining into the left renal vein. There was no variation seen in the right testicular vein course and drainage.
Discussion: The presence of such a variation has not been reported so far. Our case report gives an insight into the developmental origin and surgical importance of this variation.

122. Patent Vitello Intestinal Duct

Sree Lekha D[a], Meera.S[b], Hemanth Kommuru[b], Swayam Jothi,S[b]

[a]*Guntur Medical College, Andhra Pradesh, India*: [b]*Shri Sathy Sai Medical College and Research Institute, Chennai, Tamilnadu, India*

Introduction: Persistence of vitello intestinal duct remains as either meckels diverticulum or enterocystoma or umbilical sinus or fistula. Its presence varies from 2 to 4% of population.

In the 5th week, the midgut communicates with the yolk sac by way of the vitelline duct. Persistence of this connection postnatally results in the above mentioned varieties of persistent vitellointestinal anomalies.

Earlier we reported full fledged meckels diverticulum presenting as appendicitis and was operated.

Here is a case report of a girl aged 18 years who had pain and discharge in the umbilical region on and off since childhood. She was referred to surgical O.P.
Preoperative diagnosis: Umbilical granuloma. Ultrasonogram and other investigations were normal.

Post operative diagnosis: umbilical granuloma and sinus tract.
Surgery done: Excision of granuloma and sinus tract
Operative notes: Under G.A, the granuloma at the base of the umbilical pit was scopped out. Thereafter there appeared a thin sinus. The same on tradition extended for about a cm into the umbilical pit and appeared to end blindly. The tract was excised. Haemostasis obtained and umbilicus drained. Specimen was sent for histopathological examination. Well defined hypoechoic lesion superficially in the umbilical region with deeper component extending deep to the top of peritoneum.

Biopsy from umbilicus: Macroscopic description: - Bottle unmarked: Three fragments of grayish white tissue measuring 0.2 cms —3 cms.
Microscopic description: Sections show fragments of fibrous tissue with stratified squamous and fermented small intestinal type of epithelium.

Impression: Biopsy from umbilicus —Blunt tract shows intestinal type epithelium and fibrous tissue —suggestive of umbilical sinus (Persistent vitello intestinal tract)

123. Variations of branching pattern of hepatic artery

Athota Vijayalakshmidevi.[a], Sree Lekha.D.[a], Sree Devi.S.[a], D., Swayam Jothi. S.[b], Guru Vijaya Raghavan[b]

[a]*Guntur Medical College, Andhra Pradesh, India*: [b]*Shri Sathy Sai Medical College and Research Institute, Chennai, Tamilnadu, India*

Introduction: Knowledge of hepatic arterial variations is important for the surgeons performing liver transplant and hepatobiliary surgeries. The normal hepatic arterial anatomy is found only in 50 —80% of cases as described in classic text books.

With the advancement of laproscopic surgery of gall bladder we wanted to observe the branching pattern of hepatic artery in detail at the porta hepatitis.
Methods: Routine dissection of 16 cadavers in the department of anatomy, as a part of teaching process for first year M.B.B.S. students.
Results: In three of the male cadavers the following branching pattern was observed. In one a moderated size branch was given of close to the origin which divided in to a right and left branch and a third branch entering into the groove for ligamentum teres. The left branch gave cystic artery and divided into two and followed the above and the right branch divided into two at the porta hepatitis

In the other a large branch was seen arising close to the origin and divided into four branches. One descended down as the gastro duodenal, another was right gastric, and the third branch divided into two and entered the liver substance separately at the fissure for ligamentum teres, fourth branch gave cystic branch and entered the porta hepatitis, a branch was

seen arising from the cystic artery and entering the liver. In the third male cadaver the hepatic artery ended in a branch of branches.

Discussion: Variation in the hepatic artery braches are exceedingly common and investigated by a whole series of workers, these include Eisendrsth(1918); Flint; Thompson; Browne; Daseler, Anson, Hambley and Reimann and Michel's among the others<comment>delete</comment>. These branches are the segmental branches which arise early from the main trunk. The variations are so many that it is not always possible to compare directly but however a knowledge about these is essential in this region of pin hole surgery.

124. Presence of caput tertium gastrocnemius and entrapment of the sural nerve –A case report

Guru A, Kumar N, Shetty S D, Nayak S B

Department of Anatomy, Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India

We report here a case with concurrent variations of gastrocnemius and the sural nerve. The gastrocnemius muscle originated with 3 heads. The additional third head took origin from lateral condyle of femur and then merged with the medial head. The medial and the lateral head then formed the belly of the gastrocnemius muscle which continued downwards as the tendon. The sural nerve which branched from the tibial nerve passed through the line of union between the medial and third head of the gastrocnemius muscle. On Dissection the nerve was found to be embedded within the musculature of the gastrocnemius. The sural nerve resurfaced at the site of transition of the muscle to tendon. Presence of third head of the gastrocnemius, also known as caput tertium gastrocnemius, can cause several clinical complications as it may compress the popliteal vessels and nerves of the popliteal region. Sural nerve is a peripheral sensory nerve often used for several therapeutic and diagnostic purposes. Hence its formation and course in the calf assumes great significance.

125. Awareness of cadaveric skin donation and banking

Saknure M.B., Satpute C.A., Kulkarni Y.R.

Indhra Gandhi Government Medical College, Nagpur, Maharashtra, India

In India about 5 to 7 million burn cases occur every year and a great number of them can be salvaged if provided with a wound cover in time. Homografts limit infection, reduce pain and prevent loss of protein and electrolytes due to evaporation. The use of skin graft is desirable in the treatment of patients with large surface area wounds due to burn, trauma etc. Awareness for eye and kidney donation has increased and there is rise in there donation, but when it comes to skin donation, there are very few who know about it. Cadaver skin if harvested and stored can be used as homograft for patients with extensive raw area or when donor site is deficient to harvest graft.

In my poster presentation I'm highlighting on awareness of skin donation and its storage in bank. At present there are hardly five skin banks in India, of them two are in Mumbai, one in Pune, Indore and Delhi. As there still not much awareness about skin donation but ngo's, social groups, medicos and media can aware people about it. Lack of awareness is major hurdle in skin donation, if awareness about skin donation is increased among people it will definitely save lives of many injured patients.

126. Horseshoe shaped anomaly of kidney –A case report

Gadade V.G, Baig M.M, Jadhav A.S, Fulari S.P.

Dr.V.M. Government Medical College, Solapur, Maharashtra, India

Introduction: The present report is on horseshoe shaped anomaly of kidney which was observed in a 50 years old female cadaver during routine dissection. Both the kidneys were joined at their lower poles by an isthmus in front of third and fourth lumbar vertebrae. The part of fusion called the isthmus consisted of renal tissue.

Methods: During routine dissections of cadavers for teaching purpose to the undergraduate students in the department of Anatomy, Dr. vaishampayan memorial government medical college, Solapur, M.S, abdominal part of 12 cadavers were dissected and kidneys were examined and in one case horseshoe shaped anomaly of kidney was found.

Result: Out of 12 cadavers, in one female cadaver during dissection horseshoe shaped anomaly of kidney was found. Both the kidneys were supplied by single renal artery and single renal vein, but both the ureters were arising from the anterior surface of the kidney and were passing ventral to the isthmus in a caudal direction as shown in the fig below. Also the inferior mesenteric artery was running in caudal direction by grooving the isthmus at the lower pole.

Discussion: The occurrence of the congenital anomalies of kidney is not a rare phenomenon. Some of them are important as they may cause renal failure in middle age group. Horseshoe kidney is the most common fusion anomaly, it occurs because of the fusion of either of the poles of the kidneys. Usually it is the inferior poles that fuse. A horseshoe kidney usually produces no symptoms because there is normal development of its collecting system as well the ureters enter the bladder. If urinary flow is impeded, signs and symptoms of obstruction or infection may appear. About 7.0% of persons with Turner syndrome have horseshoe kidneys.

127. Embryonic features in a prepubertal cadaveric heart

Deopujari R; Sathe S; Patil S; Sinha U; Jasuja V; Vijaywargiya M.

Peoples College of Medical Sciences and Research Centre, Bhopal, Madhya Pradesh, India

During routine dissection for under graduates we came across a female cadaver of prepubertal age which showed persistence of some embryonic features in the heart like presence of foramen ovale, Eustachian and Thebesian valve.

Introduction: Anomalies of right atrium, due to incomplete resorption of embryologic structures, are difficult to diagnose and to establish future management. When atrial septum does not close properly, it is called patent foramen ovale (PFO). It is frequently occurring atrial septal defect which when functioning produces cyanosis. It can be associated with atrial septal

aneurysm with excessive mobility of atrial septum. Migraine headaches are more common in patients with PFO.

Valve of inferior vena cava/ eustachian valve is often reported with different unexpected complications. It is a remnant of right venosus valve and does not ordinarily function as a true valve in fetal or postnatal life. The valve gradually regresses postpartum. Echocardiographic prominence of eustachian valve depends on the subject's age.

Coronary sinus (CS) provides access for different cardiac procedures and its mouth is guarded by Thebesian valve as it opens into the right atrium. This valve is highly variable and may present an obstruction during cannulation of CS. A detailed knowledge of coronary venous system including CS regarding anatomy, size and correlation with adjacent structures is very important.

128. Atlanto-occipital fusion -Report of three cases

Rajni Thakur, M.Goyal

Pt. J .N. M. Medical college, Raipur, Chhattisgarh, India

Atlanto-occipital fusion is one of the common skeletal abnormalities of the upper cervical spine. We report 3 skulls showing occipitalization of the atlas along with additional abnormality.

Results: In skull I nearly normal dimension of foramen magnum and skull II —showed the anterior arch of atlas was fused with the occipital bone and fusion of only one of the transverse processes of atlas to the occipital bone, one half of the posterior arch was broken, other half of the posterior arch was fused with the occipital bone, skull III- showed spina bifida posterior of the atlas, complete fusion of only one of the transverse process with the occipital bone, the anterior arch of the atlas was incomplete fused with occipital bone. Skull II and skull III showed remarkably narrowed foramen magnum. This occipitalization leading to neurological complication due to compression of spinal cord.

129. Sacral dysgenesis as part of caudal regression syndrome —A case report

Aggarwal N[a], Kaur M[b], Devi S[a]

[a]*Department of Anatomy, Adesh Institute of Medical Sciences And Research, Bathinda, Punjab, India*: [b]*Department of Radiology, Adesh Institute of Medical Sciences And Research, Bathinda, Punjab, India*

Introduction: Sacral dysgenesis is a condition in which a part of sacrum with vertebrae caudal to it is missing or malformed. This condition when present with other features in the caudal region becomes a part of caudal regression syndrome (CRS).CRS is a rare congenital disorder that occurs as a result of insult to the caudal region of the embryo in utero by as early as 4th week of gestation. It causes defective formation of mesoderm mainly in the caudal region and thereby resulting in deformities of all or most of the structures developing from it in that area.

Methods: This case of sacral dysgenesis was detected during the observation of MRI films for the measurements on sacrum for the study on Regional & Sexual Differences on Sacrum- a Study on MRI and Dry Bones'.

Results: MRI of a 6 year old, male child, showing hypoplasia of sacrum with absence of caudal one segment of sacrum and entire coccyx vertebrae. There was an abrupt, club shaped termination of spinal cord at level of T12, along with other clinical features like dribbling of urine . This case can be categorised under Type —I of Renshaw's classification of CRS.

Discussion: CRS is a congenital syndrome which results from in utero insult to the embryo. Prenatal diagnosis of condition and maternal care, specially in diabetic mothers during pregnancy can prevent such abnormalities in the new born. Severity of lesion and presence of associated anamalies affect the quality of life as otherwise the surviving infants usually have normal mental functions.

130. Anatomical variations of the profunda femoris artery —A case report

Jaiswal R, Sathe S, Deopujari R, Sharma CP

Department of Anatomy, People's College of Medical Science & Research Centre, Bhopal, Madhya Pradesh, India

Introduction: The course and ramification of the vessels of the lower limbs have long received attention from anatomists and surgeons.

Method: During educational dissection with undergraduate students of the Department of Anatomy of the People's Medical College, we observed in a male cadaver of about 65 years the variation of the profunda femoris artery on left side, high origin of the profunda femoris artery on left side. The medial circumflex femoral artery and lateral

Results: Circumflex femoral artery was arising from muscular branch of profunda femoris artery on left side. The anatomy of the profunda femoris artery on the right side was normal.

Discussion: The branching patterns of femoral artery, profunda femoris artery and their branches are subject to considerable normal anatomical variation.

131. Mastoid Process —A tool for sex determination, an anatomical study in South Indian skulls

Ramakrishna Avadhani, Hema Nidugala, Bhagya Bhaskar

Department of Anatomy, Yenepoya Medical College, Yenepoya University, Mangalore, Karnataka, India

Introduction: Osteometric studies using individual bones exhibiting sexual dimorphism has been reported among different populations. Dimorphism in skulls is based on its size and robustness. Skull bones such as mastoid, hard palate, craniofacial parts have been analyzed for sex determination. It is a bone less prone to damage due to its safe anatomical position. Mastoid region is one of the slowest and late growing regions of cranium and such regions show higher degree of sexual dimorphism in adulthood. So this region can be considered vital for diagnosis of sex from visual assessment as well as osteometric basis. The objective of this study is to validate the use of mastoid process for assessing the sex of the human skull and signify the use of statistical approach in estimation of sex from fragmentary crania.

Methods: The study sample includes 80 adult skulls, 40 males and 40 females aged between 35-60yrs at time of death from the Department of Anatomy, Yenepoya Medical College, Yenepoya University, South India. Skulls with good conditions with gender identified in book record were included and those which were damaged, incomplete or without identification were excluded from the study.

Results: Statistics revealed high significance (p<0.000) in five measurements except Asterion —potion, Posterior end of incisura mastoidea - depression of suprameatal triangle and Asterion-depression of suprameatal triangle.
Discussion: Direct method with all parameters gave discrimination accuracy of 82.5% and in step wise analysis an accuracy of 65.0%. Stepwise analysis selected Mastoid —Portion as the best discriminant.

132. Prevalence of pituitary adenoma and its clinical manifestations

Bindhu.S, R K Avadhani

Yenepoya Medical College, Yenepoya University, Mangalore, Karnataka, India

Introduction: Pituitary adenoma are primary tumors occur in the pituitary gland and are one of the most common intracranial neoplasms. Depending on their size they are broadly classified into pituitary microadenoma which is less than 10mm in size and pituitary macroadenoma which is greater than 10mm in size. Pituitary adenomas are common, with rates varying widely depending on definition: population prevalence ~ 0.1 %; autopsy prevalence ~ 15 % .They account for approximately 10% of all intracranial neoplasms and 30-50% of all pituitary region masses. Pituitary macroadenomas are approximately twice as common as microadenomas. Pituitary adenomas present either due to hormonal imbalance or mass effect on adjacent structures (macroadenomas), classically the optic chiasma.
Methods: This study was conducted in 20 adult cranial fossae obtained from embalmed cadavers allotted for 1st year MBBS dissection in the Dept of Anatomy, Yenepoya Medical College, Mangalore. All the cranial fossae were observed during the removal of brain for pituitary adenoma and compression of optic chiasma.
Results: The prevalence of pituitary adenoma in our study was 5% and it measured 2cm diameter and there was a compression of optic chiasma.
Discussion: Because the hormonal systems of the pituitary are complex, a wide variety of clinical syndromes can be caused by tumors. The cognitive and psychosocial disruption exhibited by patients with pituitary tumors should be viewed as manifestation of physical disease that can be amenable to appropriately directed therapies.

133. A variational study of septal branches of right and the left coronary arteries using luminal cast

Vikram.S[a], G.Saraswathi[b], Avadhani.R[a]

[a]*Department of Anatomy, Yenepoya Medical College, Mangalore, Karnataka, India:* [b]*Department Anatomy, JSSMC Mysore, Karnataka, India*

Introduction: Hypertrophic cardiomyopathy is one of the major causes of death in young competitive athletes throughout the world. It decreases left ventricular ejection factor and hence the cardiac output decreases. Interventional cardiologists treat this condition using alcoholic septal ablation by approaching the specific interventricular septal branches of the coronary arteries.

The main purpose of this work was to study the septal branches of the interventricular septum arising from both the coronary arteries and their variations in detail.

Method: The lumen of the 30 coronary arteries (Both right coronary and the left coronary arteries)were injected with cast material and made like thick scaffoldings then dissected under water and the variations were studied.
Result: Variations in the number of septal branches according to the length of the coronary arteries and coronary dominance were studied. The number of septal branches was maximum in case of Co-dominant type, anterior interventricular branch giving 8-14 branches and the posterior interventricular giving 5-12 branches.
Discussion: This study along with echocardiographic correlation helps interventional cardiologists to, thus target focal septal hypertrophy.

134. Anatomical study on branching pattern of arch of aorta in human cadavers

Shetty R K, Bhat S P, Kamath V G, C.H S, Avadhani R.

Department of Anatomy, Yenepoya Medical College, Mangalore, Karnataka, India

Introduction: Study of branching pattern of arch of aorta in human is important for the surgeons who deals with the surgery of the supra aortic region as well as thoracic and neck region. It is also use full for the radiologists during the imaging of aortic arch and its branches. In this study we considered the different patterns of branching of aortic arch and also correlated it with the embryological basis.
Methods: 50 numbers of formalin fixed cadavers of both sexes with age ranging between 40 to 70 years were used. Cadavers are dissected and arch of aorta is exposed and their branches are examined in the department of anatomy, Yenepoya Medical College, Mangalore, Karnataka.
Results: The normal three branched aortic arch was found in 38 cadavers (76%); the 8 (16%) aortic arch had 2 branches, in this one is a common trunk which gives the brachiocephalic trunk and left common carotid artery and the other branch is left subclavian artery and 4 (8%) aortic arches showed four branches with the origin of left vertebral artery from the arch itself.
Discussion: These variations are usually asymptomatic but they may the cause for dyspnoea, dysphagia, and wrong diagnosis during radiological examinations and faulty surgery in the region.

135. "Vascular corrosion casting for useums in Yenepoya Medical College" —Lessons learnt

Pramod KL, Vaswani VR

Yenepoya Medical College, Yenepoya University, Mangalore, Karnataka, India

Introduction: The method of corrosion cast can be traced back to 16th century when Leonardo da Vinci injected wax into the specimens like heart which he dissected and drew. This method was developed further by many workers using different casting material. The present study is an attempt to look into the various casting materials used in the past, the advantage of one over the other and how best to utilize the technique in our Museums using locally available resins.
Methods: Fresh specimens of cow, goat and sheep (from abbatoir) were used with the approval from the Ethics Committee of the Institution for the technique of corrosion casting. Extensive review of literature was done to understand the different

techniques. Locally available different resinous material was obtained for the purpose of the study.

Result: Specimens of kidney showed consistently good result. The Kidney cast showed complete parenchyma while spleen showed only the arterial supply. In the specimen of kidney injected with RTV silicone (red) only the arteries got injected, kidney parenchyma was not seen. The cast obtained was soft and flexible but didn't maintain the shape of kidney. Kidney of cow, injected with general purpose resin, accelerator & catalyst mixture resulted in only the partial cast of Kidney.

Discussion: Corrosion cast kidney can be prepared cost effectively using locally available resins and is a good technique to study 3D vascular architecture of different organs.

136. Variation of left suprarenal vein –A case report

Sengupta. O, Chowdhury.J, Halder.S Ghosal.A.K, Kundu.R.

Department of Anatomy, Institute of Post Graduate Medical Education & Research, Kolkata, West Bengal, India

Introduction: Routine dissection of abdomen revealed the anatomical variation of suprarenal vein and its tributaries on left side.

Methods: Dissection of abdomen of an embalmed male cadaver of around 70 years age, in the Department of Anatomy, I.P.G.M.E&R, Kolkata.

Result: We observed there were two suprarenal veins on left side and upper one of them was of wider caliber, whereas the lower one was narrower and comparable to the only suprarenal vein found on the right side. Two left suprarenal veins before draining into the left renal vein joined and formed a common trunk. Moreover on the left side the hemiazygos vein, a venous tributary from left phrenic vein, and a vein from pancreas were found to drain into the upper wider left suprarenal vein. On the right side however there was only a single suprarenal vein without any tributary to it, and draining into the inferior vena cava directly and of narrow caliber. On the left side we also observed an accessory renal vein draining into the left renal vein. There was only single renal vein on the right side.

Discussion: Knowledge of the variations of suprarenal vein could be useful for clinicians during radiological and surgical interventions involving various diagnostic and therapeutic procedures particularly in the retroperitoneal region.

137. Morphometric evaluation of mandibular condyle using cone beam computed tomography (CBCT) scans

Kaur B[a], Dhar P[a], Sehgal R[a], Logani A[b]

[a]*Department of Anatomy, All India Institute of Medical Sciences, New Delhi, India*: [b]*Department of Conservative Dentistry and Endodontics, All India Institute of Medical Sciences, New Delhi, India*

Introduction: This study was designed to evaluate the morphological and morphometric features of mandibular condyle with context to side, sex and age using CBCT scans.

Method: A retrospective study was conducted on mandibular condyles using CBCT scans of subjects (60) in the age group of 20-60 years. Linear dimensions were determined with the help of i-CAT (Vision) software (Version 1.9.3.14 , Imaging Sciences International). Various parameters such as condylar width, condylar length, condylar height, depth of mandibular fossa, joint space and ramus height were taken into consideration. The measurements were done on frontal as well as on the lateral view of the CBCT. The values obtained were recorded as per various decades and analysed for differences in the measurements with context to side of the mandible, sex of the subject and age of the subject.

Result: The size of the condyles showed a linear correlation with the age of the subjects. No significant difference was observed in the measurements on the right and left side. We also observed a substantial difference in various parameters among male and female subjects.

Discussion: These observations are suggestive of age associated growth of mandibular condyle as well as sexual dimorphism.

138. Innovative way of teaching neuroanatomy by mounting brain cross sections in custom made prespex cassettes

Jha R, Rajan Bhatnagar, Tandon A, Krishnan M.

Department of Anatomy, Armed Forces Medical College, Pune, Maharashtra, India

Introduction: The human brain is the most complex product of biological evolution. The understanding of Neuroanatomy is an inescapable requirement at undergraduate level. The students dissect out the brain which is then studied as a whole and in sections at various levels. It has been observed that the brain tissue being very fragile breaks into pieces during repeated teaching and handling. Thus the need of more robust method of preserving the specimen has been felt.

The aim of present study is to evolve the methodology of mounting cross sections of Brain in custom made cassettes jars to make them more user friendly and with longer shelf life.

Methods: Brain was removed from the cadaver after dissection and sections were made. These sections were mounted in perspex cassettes made of the size of sections containing 10 % Formalin solution and properly sealed.

Results: Brain tissue being very fragile often gets damaged on repeated use. Thus a perspex mounted preserved brain cross section has been designed which is more user friendly, durable and having a longer shelf life.

139. Thyroid isthmus agenesis –A case report

Sapkota S, P Haresh Kumar, Bhatnagar R, Singh P, Pokhrel R

Department of Anatomy, Armed Forces Medical College, Pune, Maharashtra, India

Introduction: Thyroid gland, an important endocrine gland is located anteriorly in lower neck. It consists of two conical lobes joined together by a narrow median isthmus, which occasionally is absent. The incidence of which is about 10% in general population.

Method: We report a case of absent thyroid isthmus in a male cadaver of 61 years of age, discovered during routine dissection for medical undergraduates at our college. The knowledge of this

anomaly helps to carry out surgical procedures related to thyroid with greater ease.

Results: Following facts were observed in the thyroid gland.

Thyroid gland was placed anteriorly in the neck with two lobes being roughly equal in size.

The isthmus was absent the result of which two lobes were completely separated from each other.

No scars were present in that region so any surgical intervention leading to this anomaly was less likely.

Conclusion: Absent of isthmus is often an incidental finding in many cases. Knowledge of its congenital anomaly will be very essential in avoiding complications while carrying out surgical procedures.

140. Atlanto-occipital fusion –Case report

Monalisa, Pandit Subhendu, Bhatnagar Rajan

Department of Anatomy, Armed Forces Medical College, Pune, Maharashtra, India

Introduction: The author presents a case of atlanto-occipital joint fusion.

Method: The specimen of skull showing fused atlanto-occipital joint was retrieved from Anatomy department burial ground. The specimen was washed in water and immersed in 6% H2O2 (Hydrogen peroxide) in 50:50 concentration. The specimen was immersed for 3 days and subsequently dried. It was then studied and photographs obtained from various angles.

Results: On examination of the specimen it is seen that the articular processes are fused between the occipital and atlas bones. The transverse process is free from the base of the skull. The posterior arch of atlas is maintained, however the foramen transversarium of atlas is damaged. The anterior lamellae are preserved but the posterior bar of bone is missing. The anterior arch is in close relation to basioccipital. Posterior surface show the facet for the odontoid process. The Hypoglossal canal, Condyloid canal and Foramen Magnum are normal. No other bony outgrowths or additional foramina are visualised.

Discussion: The specimen seen represents a case of congenital fusion. There is no indication of any pathological cause. Atlanto-occipital fusion can be associated with reduction in diameters of foramen magnum, neurological complications due to compression of spinal cord, nerves and vessels, especially vertebral artery. It also causes instability and restricted movements of the joint. Partial fusion is more common and most of the time it exists without any typical symptoms, but sometimes it may cause orthopaedic problems and neurological effects.

141. Sternal foramen: A case report

Ramadevi Gara, Aseem Tandon, Rajan Bhatnagar

Department of Anatomy, Armed Forces Medical College, Pune, Maharashtra, India

Introduction: The sternum or breast bone is a flat axial bone forming the anterior part of thoracic skeleton. It consists of a cranial manubrium, an intermediate body and a caudal xiphoid process or xiphisternum. The length of adult sternum in an averagely built individual is about 17cm which is larger in males as compared to females. The sternum is formed by a pair of mesenchymal vertical bands called sternal bars which develop ventrolaterally in the body wall. Chondrification occurs in these bars as they move medially and fuse craniocaudally in the median plane. However it is noticed that few cases sternal foramen formed at junction of the 3rd and 4th sternebrae due to incomplete fusion of cartilaginous sternal bar. Incidence reported is 3.2 to 4.3%.

Method: Foramen was found in one sternum retrieved after cadaveric dissection conducted for 1st yr MBBS students in the year 2011-2012.Measurements were taken using digital vernier callipers and measuring tape.

Results: An oval shaped foramen of size 8.75mm X 7.35mm was present on lower 1/3rd of body of the sternum. Distance from sternal angle was 68.066mm and from lower end of sternum was 25.26mm; distance from right border was 15.40mm and from left border 15.80 mm.

Discussion: Awareness of a sternal foramen is important in the practice of acupuncture and sternal marrow aspiration, as it leaves the heart and great vessels unprotected. There is a major risk of traumatic injury to thoracic organs like pleura leading to pleural effusion or pneumo thorax during acupuncture and cardiac tamponade in sternal marrow aspiration. Sometimes it may be misinterpreted as a gunshot injury on x-ray.

142. Genetic analysis in a true hermaphrodite –A case report

Bandopadhyay Debasis[a], Rewari Yogesh[b], Sharma Arundhati[c]

[a]*Department of Anatomy, Armed Forces Medical College, Pune, Maharashtra, India*: [b]*Department of Endocrinology, Army Hospital (Research & Referal), New Delhi, India*: [c]*Department of Anatomy, All India Institute of Medical Sciences, New Delhi, India*

Introduction: True hermaphrodite is one of the rarest variety of disorders of sexual differentiation (DSD) and represents only 5% of all DSDs. True hermaphroditism is characterized by the development of ovarian and testicular tissue in the same individual. Müllerian and Wolffian structures are usually present, and external genitalia are often ambiguous. The most frequent karyotype is 46, XX or various forms of mosaicism. We report an 8yrs old child of a serving soldier reared as male. He underwent orchidectomy for right undescended testis at 18 months of age. The biopsy of the testis showed presence of granulosa cells. The external genitalia was clearly identified as male penis with hypospadius. The patient reported to us for cyto-molecular analysis at 8yrs referred by the endocrinologist planning for human chorionic gonadotropin stimulation test before commencing testosterone supplement.

Methods: 5ml of venous blood was cultured for leucocytes and subsequently karyotyped using standard protocol of Trypsin Giemsa banding. The same sample was used for SRY gene amplification by Polymerase Chain Reaction (PCR).

Results: Cytogenetic analysis of peripheral blood revealed mosaic karyotype with 90% 46, XX and 10% 47, XXY cell line. The PCR for SRY gene showed presence of SRY gene.

Discussion: An early gender assessment of true hermaphrodites is of utmost importance for proper psychosocial development of child. Though phallic size is the single most important criteria for gender assessment, a multidisciplinary team of specialists in consultation with parents must assign sex of the child on basis of genitalia, gonads and genetic factors.

143. Ventriculomegaly –A case report

Dubey Arpan, Srivastava Sudha, Julka Ameet, Tiwari Bhavna, Marko Rajendra, Chhabra Prabhjot Kaur

M.G.M.Medical College, Indore, Madhya Pradesh, India

In Anatomy Department, M.G.M.Medical college, Indore (M.P.), during careful dissection of brain in a male cadaver aged 64 years, a greatly enlarged lateral ventricle was found on right side. It was approximately more than three times the normal sized lateral ventricle. Several blood clots were also observed, especially in the right half of cerebral hemisphere. Careful history and information regarding investigations of deceased was obtained from relatives. Along with this ventriculomegaly, other anomalies like cardiomegaly and reduced lung size on both sides were also observed during dissection.

144. A novel method for colouring and labeling specimens in the anatomy museum

Prabhu Latha V., Pai Mangala M., Premchandran Divya, Vadgaonkar Rajanigandha

Kasturba Medical College, Mangalore, Manipal University, Karnataka, India

Introduction: In today's medical educational programs in various institutes anatomy is an essential part of the curriculum in the first year of the medical course. An attractive and innovative anatomical museum forms a vital role in furthering the interest and educating a medical student.
Methods: Once a specimen has undergone fixation it is essential to colour and label the specimens in order to ensure better visualization of required structures and for its proper placement in the museum. We have utilized a novel method of using commercially available clear nail polish as a colouring agent and as a part of the labeling of museum specimens.
Results: Nail polish being non toxic and readily available can be used without causing any complications.
Discussion: Use-age of commercially available nail polish is a cost effective and a productive methodology.

145. Morphometric analysis of internal acoustic meatus in dry human temporal bones –A study

Vadagaonkar R, Prabhu LV, Rai AR, Vani PC

Kasturba Medical College, Mangalore, Manipal University, Karnataka, India

Introduction: Internal acoustic meatus forms an important landmark in various neuro-otological surgeries like removal of acoustic neuroma, temporal bone fractures and certain congenital anomalies. The topographic anatomy of internal acoustic meatus is important during these surgeries to avoid injury to vital structures in its proximity like jugular bulb and saccus endolymphaticus. The aim of present study is to describe the morphometry of internal acoustic meatus with respect to the landmarks on postero-inferior surface of temporal bone and clivus.
Method: Twenty seven disarticulated temporal bones and thirty five dry skulls were used for the study. The shape of internal acoustic meatus was noted by direct inspection, whereas the dimensions such as vertical and horizontal diameter of internal acoustic meatus and its relation to important anatomical landmarks were measured in millimeters using digital vernier caliper.
Results: Internal acoustic meatus was either elliptical or round in shape.The average length and width of internal acoustic meatus was 7.51mm and 4.52 mm. The average distance from internal acoustic meatus to superior petrosal sulcus, jugular foramen, sigmoid sulcus, and clivus was 7.15mm, 7.77mm, 20.60mm, and 24.68mm respectively.
Discussion: These observations provide an insight to the surgeons for better exposure of internal acoustic meatus and help in minimizing damage to vital structures in its proximity.

146. Morphometric analysis of hypophyseal fossa –A radiographic study

Rai AR, Vadgaonkar R, Vani, Rai Rajalakshmi

Kasturba Medical College, Mangalore, Manipal University, Karnataka, India

Introduction: Familiarity with the shape and dimensions of sella turcica is important to recognize and manage pathological conditions of pituitary gland. Alteration in shape of sella turcica has been associated with various craniofacial aberrations and syndromes. The present study aims to describe the morphology and dimensions of sella turcica using lateral radiographic cephalograms.
Method: The study used thirty six lateral skull radiographs of both males and females between age group of 9 to 35 years. Shape of sella turcica was noted by visual inspection. Length, width, height anterior, height median, height posterior, distance between frontonasal suture and mental spine to midpoint of posterior clinoid process and tuberculum sella was measured using digital vernier caliper in reference to Frankfort line.
Results: Mean width, height anterior, height median, height posterior was larger in females than in males. The morphological types identified include pointed posterior clinoid process with rounded hypophyseal fossa, hooked posterior clinoid process with rounded hypophyseal fossa, hooked posterior clinoid process with flask shaped hypophyseal fossa.
Discussion: These observations would help the clinicians and orthodontists in evaluating pathological conditions associated with sella turcica.

147. Bilateral variations of musculocutaneous nerve in cadaveric study –A case report

Shubhangi Yadav, S.N Shamal

Department of Anatomy, Institute of Medical Science, Banara Hindhu University, Varanasi, Uttar Pradesh, India

Variations in the formation and branching of brachial plexus are rare. During routine dissection of a 55yr old cadaver in department of Anatomy, IMS,BHU a bilateral variation in the course of musculocutaneous nerve was observed.

On arms of both sides a separate branch was arising from the lateral cord of brachial plexus which pierced the coracobrachialis muscle in the proximal part.

Another branch from the lateral cord descended downwards between the biceps brachii and brachialis sending branches to both and continued as the lateral cutaneous nerve of the forearm.

Awareness of this possible variations in the musculocutaneous nerve is important to both anatomists and clinicians.

148. Restraint stress of different duration induces neurodegeneration of substantia nigra in adult albino mice

Bangera Hemalatha[a], D'Souza Antony Sylvan[a], Babu B Prakash[a], S D Manjula[b], Rao K Mohandas[c], J Raghu[c]

[a]*Department of Anatomy, Kasturba Medical College, Manipal University, Manipal, Karnataka, India*: [b]*Department of Physiology, Kasturba Medical College, Manipal University, Manipal, Karnataka, India*: [c]*Department of Anatomy, Melaka Manipal Medical College, Manipal University, Manipal, Karnataka, India*

Introduction: The neuronal organization and functional integrity of several regions of the brain are affected by several factors such as pesticides, toxins, behavioral experience and stress. Aim of the present experiment was to study the effects of restraint stress of different duration on neurodegeneration of substantia nigra neurons in adult albino mice (BALB/C strain).
Methods: Adult mice (271 days old) were restraint stressed in a wire mesh restrainer (6h/day) for 5/21/60 days according to the duration of stress. Age matched normal mice served as control group. A day after last days stress, all stressed mice were anesthetized, sacrificed and brain is processed for cresyl violet staining along with age matched control mice. Well-stained sections were observed under Biolux light microscope at 400x magnification for morphological changes like cell shrinkage, cell size, cell number, nissl substance distribution, nuclear size and position.
Results: Less neurodegeneration is seen in mice subjected to 5 days stress, however in mice subjected to 21 and 60 days stress showed severe neurodegeneration in substantia nigra. These results suggest that the restraint stress of short or long duration has different effects on the neurons of adult mice Substatia nigra. Significant increase in suprarenal gland weight, presence of ulcers in gastric mucosa and decreased body weight were observed in mice stressed for 21 and 60 days indicating the effectiveness of the stress.
Discussion: Thus stress of longer duration can affect the neurons of adult brain, which may result in the severe neurodegeneration and precipitate in functional deficit.

149. A rare case of bilateral high origin of the testicular artery with variations in the course and branches

Y.K. Chethana, LC.Prasanna, MR Bhat Kumar

Department of Anatomy, Kasturba Medical College, Manipal University, Manipal, Karnataka, India

Introduction: Testicular artery usually arises from the anterolateral part of the abdominal aorta below the origin of the renal arteries. Very rarely variations in the origin of the testicular arteries were observed.
Method: We report a rare case of bilateral unusual origin and course of the testicular artery.
Results: On the right side, testicular artery originated from the aorta above the origin of the renal artery and gave off inferior suprarenal artery. In contrast, left testicular artery springs from the inferior pre-hilar branch of the left renal artery. On both sides, testicular arteries descended in front of the hilar structures of the kidney and then they accompanied with their respective testicular veins. On the posterior abdominal wall, these arteries showed tortuous but normal course.
Discussion: Since the origin and course of the testicular artery is important to consider during surgical and diagnostic interventions, knowledge of such variation may be helpful in avoiding diagnostic and surgical errors and adverse consequences especially during laparoscopic approaches.

150. Morphometry of the adult human dry hip bone

Kanhaiya Jee, Pandey Arvind Kumar, Gupta Chandni, D'Souza Antony Sylvan

Department of Anatomy, Kasturba Medical College, Manipal University, Manipal, Karnataka, India

Introduction: The four main features of biological identity are sex, age stature and ethnic background. By determining metric techniques and discriminate functional analysis we can estimate the age, sex and race of individual. Specimen identification and sex determination from skeletal remains has great importance in forensic medicine. So, the aim of our study was to study the morphometry of dry human hip bones in South Indian population in order to evaluate the various parameters.
Methods: A total of 53 adult unpaired right and left dry hip bone of unknown sex were studied from the department of anatomy, Kasturba Medical College, Manipal University, Manipal. Out of 53 hip bones, 25 were right and 28 were of left side. Weight, length and width of hip bones were measured with the help of scale, measuring tape and weighing machine. Coxal index was calculated using the formula-Coxal index =width of hip bone /length of hip bone x 100 Statistical analysis of all the measurements were done.
Result: Result will be tabulated and presented during the conference.
Discussion: This study will be helpful for the anthropologists for identification of the individual from the skeletal remains.

151. Anthropometric study of bicipital groove and its clinical implication

Jaiswal Sakshi, Gupta Chandni, D'souza Antony Sylvan

Department of Anatomy, Kasturba Medical College, Manipal University, Manipal, Karnataka, India

Introduction: The humerus links the elbow to the shoulder blade. It provides support to the major muscles of shoulder, the arm as well as forearm. It also provides anchor to 3 nerves namely, axillary, radial, ulnar, which are essential functional components of the shoulder, arm and forearm. Because of its structure and physiology, the humerus is indeed very important in the proper functioning and movement of the entire upper extremity . Fracture in any section of the humerus can lead to the impairment or loss of certain essential functions of the shoulder, the arm and the hand. Since morphometric data on bicipital grove of the humerus are scarce; an attempt is made in this study to determine the length, width, and depth of bicipital groove along with the

transverse diameter, anterior -posterior diameter and length of humerus.
Methods: The study was carried out on 60 unpaired dry humeri (right=33, left=27) which belong to the department of Anatomy KMC Manipal. The length, depth and width of bicipital groove were measured by vernier caliper.
Results: Results will be tabulated and presented during the conference.
Discussion: This study determined the morphometric parameters of the bicipital groove & will be an important reference for anthropologists, orthopeadic surgeons and clinical anatomists. This study will be a useful landmark for placement of the lateral fin of prosthesis in shoulder arthroplasty. This study may be helpful in prosthetic sizing, positioning & design.

152. Multiple roots of inferior alveolar nerve –A case report

Roy PA, Quadros LS, D'souza AS

Department of Anatomy, Kasturba Medical College, Manipal University, Manipal, Karnataka, India

Introduction: The inferior alveolar nerve usually branches out singly from the posterior division of mandibular nerve.
Method: Infratemporal fossa of a 55-year-old male cadaver was dissected following the instructions of the Cunningham manual for practical anatomy.
Result: A unilateral variation in the inferior alveolar nerve was observed. This Inferior alveolar nerve had three roots, one from the lingual nerve and two from the auriculotemporal nerve which encircled the Middle meningeal artery.
Discussion: The close relation of the artery to the nerve and vice versa may lead to the compression of either of the two structures involved. Thus, this type of variation is noteworthy for the head and neck surgeons and also for the dental surgeons.

153. Vacterl association –A case report

Bhadarge Shraddha Sudhir

Topiwala National Medical College & B. Y. L. Nair Ch. Hospital, Mumbai, Maharashtra, India

Introduction: Vacterl is a non-random occurrence of multiple congenital anomalies in individuals not known to be a polytopic defect, sequence or syndrome having incidence of 1 in 10000-40000 due to abnormalities in structure derived from embryonic mesoderm. Affected patients have no family history of malformation, no chromosomal abnormality, no recognizable teratogen involved.
Method: We report a 6 month old male baby who presented with anal stenosis & rectourethral fistula.
Results: On detailed history, it was found that baby had ventricular septal defect, partially corrected Congenital Talipes Equino Varus, scoliosis, left upper eyelid defect and bilateral preauricular skin tags and hence it was diagnosed as a Vacterl association case.
Discussion: Vacterl association includes vertebral, anorectal, cardiac, tracheoesophageal, renal & limb abnormalities. These cases are diagnosed as Vacterl associated if they have at least 3 of these characteristic features. Affected patients have multiple problems apparent at birth and some of them can be detected by prenatal USG. Many structural abnormalities can be surgically corrected and the remaining cases are by symptomatic & supportive management.

154. Multiple bilateral variations in urogenital vasculature –A clinico-embryological perspective

Thakur A., Loh H.K., Mehta V., Suri R.K., Rath G.

Department of Anatomy, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi, India

Introduction: Precise knowledge of urogenital vascular anomalies has become extremely important in the past decade with increasing number of renal transplantations, minimally invasive vascular surgeries and numerous radiologic procedures.
Methods: We report the presence of multiple variations in urogenital vasculature bilaterally in a 52 year old male Indian cadaver.
Results: Twin renal arteries were encountered bilaterally. Main renal artery was originating bilaterally at L1 vertebral level and accessory renal arteries were originating as ventral branches of abdominal aorta at L3 vertebral level and were travelling to the lower part of the respective kidneys. Twin renal veins were draining the right kidney independently whereas the left renal vein was bifurcating into two tributaries and draining separately into the inferior vena cava. Multiple testicular veins were found bilaterally.
Discussion: This report will prove to be helpful in various surgical and radiological interventions performed in the field of urology.

155. Unilateral bifid ureter with anomalous renal vessels –Case report

Vijay S Kumar, Rajeshwari M.S., Ranganath P

Bangalore Medical College And Research Institute, Bangalore, Karnataka, India

Introduction: Duplication of the ureter is the commonest type of congenital anomalies of the urinary system. This case reports the incomplete duplication of the left ureter associated with two accessory renal arteries along with the main left renal artery. The two limbs of the ureter united five cms ,above the opening of the urinary bladder and opened normally into the left ureteric orifice of the bladder.
Methods: During routine abdomen dissection of a 55yr-old male cadaver for the first year MBBS in the Department of Anatomy, BMCRI, Bangalore, the present case was observed.
Results: In this case, unilateral left sided bifid ureter was found, which was associated with two renal pelvis and two accessory renal arteries one for each pole of the kidney. The superior artery emerged at the level of origin of inferior phrenic artery from the abdominal aorta and entered the substance of the kidney through upper pole; the inferior artery emerged from the abdominal aorta, at the level of origin of inferior mesenteric artery and entered the substance of the kidney from the lower part of the hilum to supply middle and lower anterior part of the kidney.

Discussion: The knowledge of accessory renal artery and bifid ureter is important in diagnosing any renal diseases and is also important for the surgeons, nephrologists, urologists and radiologists to have a thorough knowledge of these variations before undertaking any procedures.

156. Coexistent paired splenunculi –A clinicoembryological revelation

Rustagi S M, Anshu A, Rath G, Suri R K

Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi, India

Introduction: Developmental anomalies of spleen include persistent lobulation, multilobulated spleen, accessory spleen, splenunculi, wandering spleen, ectopic spleen, asplenia, polysplenia and splenogonadal fusion. Anomalies of spleen may or may not be associated with anomalies in other organs.
Method: The present study is a case observed in the department of anatomy at Vardhman Mahavir Medical College, Delhi during routine cadaveric dissection for I M.B.B.S. students.
Results: The cadaver showed an enlarged spleen with two accessory splenunculi of variable sizes completely separate from each other. The left lobe of liver was seen to completely cover the superior border of the enlarged spleen .Each splenunculus was supplied by independent branches from left gastroepiploic artery. Histological sections of the tissues confirmed the features consistent with the spleen.
Discussion: Accessory spleens or splenunculi assume significance during clinical evaluations like splenomegaly, splenic traumas and lymahadenopathy (Anomalies like above can give false positive or false negative results) in clinical or imaging evaluations. In cases where splenectomy is required due care is needed to remove all the splenic lobules, An accessory spleen has clinical significance, acts as preservable splenic tissue in cases of a ruptured primary spleen.

157. Johanson –Blizzard Syndrome

James E, Mokapatti P.

Osmania Medical College, Koti, Hyderabad, Andhra Pradesh, India

A case report of a 2 day old neonate, 2nd child of a consanguineous marriage who presented to Pediatric OPD in Government Hospital, with dysmorphic features, cutis laxa and decreased head circumference. The collection of signs and symptoms support a diagnosis of Johanson —Blizzard syndrome. Johanson —Blizzard syndrome is an extremely rare ectodermal dysplastic disorder and an autosomal recessive syndrome. The pedigree charting, karyotyping and other investigations will be presented at the conference. The poster discusses the genetic mechanisms by which geneotype translates into the resulting phenotype.

158. Thoracic pedicle morphometry study on cadaver and CT scan and its clinical significance

Ashwini Shetty, Ramakrishna Avadhani, Mahesha K.B

Department of Anatomy, Yenepoya Medical College, Yenepoya University, Mangalore, Karnataka, India

Introduction: Analysis of correlation between the morphometric data obtained from direct measurements and the CT measurement of 100 cadaveric thoracic spines in Dakshina Kannada population. To collect a base line morphometric data and to develop the mathematical model of the spine for the accurate implants and instrumentations; and to suggest the requisite modification in spinal surgery instrumentations.
Methods: One thousand and two hundred thoracic vertebrae were studied by direct and CT measurements for linear and angular dimensions of pedicle in 100 human cadavers and compared the correlation between the two techniques and based on that the mathematical model of the spine developed by regression analysis.
Results: The Chord Length had maximum mean value of 38.00mm at T12 level in whole series and the minimum mean value observed at T1 level (26.24 mm) in direct measurement whereas in the CT measurement the chord length had maximum mean value of 37.43mm at T12 and minimum mean value at T1(25.016 mm). Pedicle Height had maximum mean value of 11.503±0.195 at T12 vertebral level and had minimum mean value of 8.335±0.386 at T2 level in direct measurements showed maximum mean value of 11.532 ± 0.22 and had minimum mean value at T2 (8.335±0.386). In Pedicle width there is no significance difference between DM and CT measurement in T1 and T2 and T10 as p value > 0.05 .But other vertebral level there is significance difference of DM and CT as p value is < 0.05 .And there is strong agreement between the morphometry of the pedicle by two technique.
Discussion: Most of the trends in changes in the dimensions of the parameters in two techniques from T1 to T12 can be explained on the basis of local musculoskeletal anatomy and biomechanical stresses in the cadaver and artifact in computerized tomographic scan. The results of the present study can help in designing implants and instrumentations; understanding spine pathologies; and management of spinal disorders.

159. Unusual bifurcation of Palmaris longus tendon

Tiwari Swaminath Umashankar, Arun P Kasote, M M Meshram

Department of Anatomy, Government Medical College, Nagpur, Maharashtra, India

During a routine dissection in the left upper limb of a male cadaver in the department of Anatomy, GMC, Nagpur, variation in tendon of Palamaris longus was noted. The presence of Palmaris longus was identified on the superficial stratum of flexor compartment. About 10 cm above the level of wrist, the tendon was bifurcated in large lateral and small medial tendon. The smaller medial tendon terminated at the level of wrist while the large lateral tendon passed superficial to the flexor retinaculum to form palmar aponeurosis. On the right side there was no variation.

160. Presence of myocardial bridge over left anterior descending coronary artery –A case report.

Shembekar Sachin Wasudeorao, Firdaus Shaikh, M. M. Meshram

Department of Anatomy, Government Medical College, Nagpur, Maharashtra, India

During a routine dissection of heart of a male cadaver in the department of Anatomy, GMC, Nagpur, presence of myocardial bridge over left anterior descending coronary artery was noted. About one cm below the origin of left anterior descending coronary artery Myocardium Bridge was observed up to 3 cm of its course. After that the course of left anterior descending coronary artery was as usual without bridging.

161. Variation of accessory meningeal artery and inferior alveolar nerve in the left infratemporal region

Khatri P., Singh J., Pahuja K., Singh T.

S.P. Medical College, Bikaner, Rajasthan, India

Introduction: The infratemporal fossa consists of two pterygoid muscles, maxillary vessels and the mandibular nerve and its branches. The variation in the course of the accessory meningeal artery and inferior alveolar nerve described in present study should be helpful for dental, oral and maxillofacial surgeries.
Method: The described variations were found in left infratemporal fossa of male cadaver during routine dissection. The infratemporal fossa was exposed by resection of ramus of mandible, zygomatic arch and lateral pterygoid muscle. The topographic dissection and details of the fossa was examined by causal dissection and photographed.
Result: The accessory meningeal artery may arise either directly from the maxillary artery or as a branch of the middle meningeal artery. This case report describes a variation in the course of the accessory meningeal artery which arose from the middle meningeal artery and then passed between the two roots of inferior alveolar nerve.
Discussion: Arterial variations in the infratemporal region cause failure of inferior alveolar nerve block and intravascular injection during the procedure leads to serious systemic complications. Knowledge of the variations of Infratemporal region reported is useful for surgeons.

162. Rare variation of axillary artery and its clinical significance

Kotgirwar S[a], Gupta V[b], Athavale SA[a], Ahmad M[a]

[a]*Department of Anatomy, All India Institute of Medical Sciences, Bhopal, Madhya Pradesh, India*: [b]*Department of Anatomy, Jammu, Jammu and Kashmir, India*

Axillary artery pulsations serve as a landmark for clinical procedures like brachial plexus block and subclavian vein puncture. Axillary artery is also increasingly being utilized as a graft for coronary artery bypass. The present article reports a previously unreported case of axillary artery variation. In this case gross deviation from the normal anatomy was observed in an adult embalmed cadaver. Axillary vein arched over the second part of axillary artery and then continued posterior to the artery throughout its course. A variant relationship of brachial plexus cords and branches to the artery was also observed. All the cords and their branches were posteriosuperior to the axillary artery in abducted position of arm. The immediate posterior relation of axillary artery in its second and third part was axillary vein and ulnar nerve.

This variation may have important clinical implications while performing subclavian vein puncture and brachial plexus blocks. Knowledge of such variations is also important in interpreting images and in carrying out surgical and anesthetic procedures involving axillary artery.

163. Preclinical students insight & approach towards cadaveric dissection

Somkuwar S.K., Wahane A.M., Kulkarni.Y.R.

Department Of Anatomy, I.G.G.M.C., Nagpur, Maharashtra, India

This study is conducted to determine the attitudes of first year preclinical students to cadaver dissection in the study of human anatomy. A pretested questionnaire with 25 statements will administrated to 300 first year of various medical colleges of Nagpur region .For each question, the students were to choose one of the three possible responses. "yes", "no", or "undecided". Observations & results will be discussed at the time of poster presentation.

164. Persistent truncus arteriosus and single umbilical artery –A case report

Das Aswin M, D'Souza Antony Sylvan, Mamatha H, D'Souza Anne

Department of Anatomy, Kasturba Medical College Manipal, Manipal, India

Introduction: Persistent truncus arteriosus (truncus arteriosus) is a very rare congenital cardiovascular anomaly with incidence ranging from 1-3% in live births and 5% in still birth and aborted fetuses. It is characterized by a single arterial trunk arising from the normally formed ventricles. The anomaly is thought to result from incomplete or failed septation of the embryonic truncus arteriosus. It is usually but not always associated with a defect in the membranous interventricular septum. The incidence of single umbilical artery is about 1% in all births. Single umbilical artery is associated with major anomalies including cardiovascular malformations.
Case report: Fetal dissection was conducted in the department of Anatomy on an eighteen weeks old male fetus of 30 yr old G3P1L1MTP1 mother who was diagnosed to have Gestational diabetes which was obtained after hysterotomy from the department of obstetrics.
Results: Only a single artery was seen to arise from the left ventricle which gave rise to two pulmonary arteries from its posterolateral aspect (Collett and Edwards type II) with a membranous defect in the interventricular septum. The aortic arch was left sided. Umbilical cord showed single umbilical artery which was confirmed by further sectioning and staining. No significant abnormalities where noted in other organs.

165. Morphometric and morphological analysis of occipital condyles in human dry skull bones and its clinical significance

Supriya, Kalthur Sneha, D'Souza Antony Sylvan

Department of Anatomy, Kasturba Medical College, Manipal University, Manipal, Karnataka, India

Introduction: The occipital condyles are bony projections of the occipital bone, situated on either side of foramen magnum in the base of skull, which articulate with the superior facets of the atlas vertebra, thereby connecting the cranium with the vertebral

column. With the advances in craniovertebral surgery, the anatomical knowledge at this junction is very essential.

The study focuses on the morphometric and morphological analysis of human occipital condyles in dry skull bones and thereby interpreting the data obtained to derive its clinical significance.

Methods: The study was performed on 100 occipital condyles of 50 dry skull bones (37 male, 13 female).10 parameters were measured, which included length, width and thickness of occipital condyles. The intercondylar distances were measured. Nonmetric parameters like the shape and size of occipital condyles were also noted.

Results: The approximate length, width and thickness of occipital condyles were found to be 2.1±0.26, 1.08±0.21, 0.99±0.2cms and 2.2±0.24, 1.1±0.26, 0.93±0.15 cms on right and left sides respectively. The anterior, posterior intercondylar distances were found to be 2.19±0.35, 3.87±0.36 cms respectively. The lateral and medial bicondylar distances were found to be 4.58±0.49, 2.63±0.33 cms respectively. The shape of occipital condyles was classified into eight types of which oval shape was most common and two condyles were less common.

Discussion: A thorough knowledge of different shapes, sizes and orientation of occipital condyles is required prior to craniovertebral junction surgeries.

166. An anatomical study on the drainage pattern of pancreatic and bile ducts in humans and its clinical considerations

Naik Kanthraj S, D'Souza Antony Sylvan, Prasanna LC

Department of Anatomy, Kasturba Medical College, Manipal University, Manipal, Karnataka, India

Introduction: Pancreas which was once considered the 'hermit organ' of the abdomen has turned out to be an organ that presents multifactorial problems, many of which have been solved by surgical techniques. There are considerable variations in the anatomy of pancreatic duct system and some of these have a clear clinical significance. The present work was undertaken to study the mode of termination of the pancreatic ducts and the duct pattern of the pancreas in humans.

Method: Formalin fixed adult human pancreas were used for the study. On the posterior surface of the pancreas two parallel cuts were made close to the superior and inferior margins of the body and the lobules of the gland were picked between the cuts to expose the greyish white duct. The mode of termination of the pancreatic and common bile ducts was carefully dissected by passing a guide wire through the major papilla into the pancreatic and bile ducts.

Results: Observations on the mode of termination of the main pancreatic duct and common bile duct revealed that the two ducts joined to form a common channel, the hepatopancreatic ampulla in 30 (75%) out of 40 specimens (Type —I). In 9 (22.5%) specimens, the two ducts ended on the major papilla but remain separated right up to their termination by a complete septum (Type —II). In 1 (2.5%) specimen, the drainage of the entire pancreas was through duct of Santorini opening on to the minor papilla and the duct of Wirsung was obliterated at its duodenal end (Type —III).

Discussion: Better anatomical knowledge of the pancreatic duct system is essential for the surgeons performing surgeries on pancreas and its ducts, for endoscopists in endoscopic guided removal of gall stones, drainage of pancreatic pseudocyst and placement of stents into the duct and for the radiologists in interpretation of pancreatogram.

167. Case report of bilateral calcified femoral arteries

Rupali Mahajan, S.Hattangdi, S.Patel, M.Mahendrakar, D.Khedekar, P.Meshram, P. Wanjari

Department of Anatomy, Lokmanya Tilak Medical Municipal College & General Hospital, Sion, Mumbai, Maharashtra, India

In medicine OPD one lady of 55 yrs old came with complains of pain in pelvic region. Then for detail investigation we took a plane KUB x-ray, in that we found bilateral calcified femoral arteries.

168. A variable origin of the left vertebral artery —A case report

Premchand. S.A., C.M. Ramesh

J. J. M. Medical College, Davangere, Karnataka, India

Introduction: The vertebral arteries arise from the first part of subclavian artery in the scaleno-vertebral triangle at the root of the neck. Anatomic and morphologic variation of the vertebral artery are of immense importance in head and neck surgeries and other non-invasive procedures.

Methods: During routine dissection of an adult female cadaver we observed a variation in the origin of left vertebral artery.

Results: On exploration left vertebral artery took origin directly from arch of aorta between left common carotid artery and left subclavian artery. The right vertebral artery originated from first part of right subclavian artery.

Discussion: A variation in the origin and distribution of the vertebral artery can cause alterations in cerebral hemodynamics that may predispose to aneurysmal formation with a greater risk of cerebrovascular accidents.

169. The muscular axillary arch in relation to the formation of posterior cord —A case report

Raghavendra D R, Nirmala D

J. J. M. Medical College, Davangere, Karnataka, India

Introduction: The muscular axillary arch is a musculotendinous structure that arises from the latissimus dorsi muscle and cross the axilla before inserting in to the humerus, brachial fascia or coracoid process. The presence of an axillary arch muscle, the muscular slips arising from the latissimus dorsi or pectoralis major and inserting in to various sites, is reported by various authors.

The aim of present study is to study the axillary arch muscle and formation of posterior cord of brachial plexus

Method: During routine dissection for 1st M.B.B.S. Students in the Department of Anatomy, JJMMC, Davangere, we found this variation in a male cadaver aged 45-50 years.

Result: The muscular axillary arch was present on left side arising from latissimus dorsi muscle inserting in to the coracobrachialis muscle. It passes between the two divisions of formation of posterior cord

Discussion: Compression by the axillary arch should be considered in the differential diagnosis of patients with Thoracic Outlet and Hyperabduction Syndromes.

170. Dextrocardia with situs inversus –A case report

Maindarkar V.V., Dope S.A., Kulkarni P.R.

Government Medical College, Latur, Maharashtra, India

Introduction: In dextrocardia , the chambers and blood vessels of heart are reversed from side to side that is all structures that normally lie on right side are on left side and vice versa. It may be a part of "Situs Inversus" in which all organs are transposed. Sometimes dextrocardia may be associated with congenital cataract in which lens opacities are present since birth. Here we evaluate a case of dextrocardia with situs inversus and bilateral cataract.
Method: A 9 year old female child presented with blurred vision in ophthalmology out patient department.
Result: On examination, she was having bilateral cataracts. On auscultation, heart beat was heard on right side. So provisional diagnosis was made to have Dextrocardia. It was confirmed by Chest X-Ray (PA View) and 2 D-ECHO. Accidental finding in this patient during these investigations was that, she was having Situs Inversus.
Discussion: Dextrocardia may be a part of Situs inversus where the heart is structurally and functionally normal.

171. Mermaid syndrome –A case report

Govindwar S.H., Dahiphale V.P., Kulkarni P.R., Selukar M.S.

Government Medical College, Latur, Maharashtra, India

Case Report: A 20 yr old primi gravid women, presented to the labour room of G.M.C. Latur, complaining of abdominal pain of 1 day 'duration. There is no history of addiction, HT, DM any medication, any congenital anomaly in family. Her marriage was non-consanguineous marriage. She had not received any prior pre-natal care from any hospital. A spontaneous breech delivery resulted in an infant of 33 wks gestation, weighing 2.1 kg with apgar score of 3 and 1 at 1 and 5 minutes respectively multiple anomalies were present, most notable single lower extremity with absence of external genitalia. Baby declared as a dead after 1 hr.

172. Integrated Teaching Program –Boon or bane?

Bhat Nandini P., D'Souza Anthony.S., Sushma R.K., Mamatha H.S.

Department of Anatomy, Kasturba Medical College, Manipal, Karnataka, India

Introduction: First year MBBS students usually study preclinical subjects such as Anatomy, Physiology, and Biochemistry. They are taught separately without any reference to each other. Students have to learn vast amounts of information that sometimes seem unrelated. Also, they may lose interest in the subject/course as it involves didactic lectures and evaluation based on pure recall rather than comprehension and analysis. Therefore, to bridge this gap between the subjects and to acquaint the students with clinical scenarios, some colleges have ventured to implement Integrated Teaching in addition to conventional teaching methods. The aim of present study is to evaluate the effectiveness of Integrated teaching through students feedback.
Method: A questionnaire to evaluate the effectiveness of the existing program was prepared and distributed among 250 second year undergraduate students who underwent Integrated Teaching in their first year.
Results: Their responses were recorded, evaluated, and analyzed statistically.
Discussion: Integrated Teaching was found to be an innovative method in strengthening the teaching-learning process.

173. Polythelia –A case report

Wanjari Prabhakar, S.S. Hattangdi., Mahajan Rupali

Department of Anatomy & Department of Forensic Medicine, Lokmanya Tilak Municipal Medical Collage & GH, Sion, Mumbai, Maharashtra, India

Polythelia (supernumerary nipples) means presence of accessory nipples along mammary line. Supernumerary nipples are diagnosed at a rate of 1 in 18 males and 1 in approximately 50 female humans. The nipples appear along the two vertical "milk lines", which start in the armpit on each side, run down through the typical nipples and end at the groin. A possible relationship with mitral valve prolapsed has been proposed.

We found a case of polythelia in an 18 yrs old male (athlete), who came for age estimation in department of Forensic Medicine and Toxicology, L.T.M.M.C. and G.H. Sion, Mumbai. He did not have any other abnormality.

174. Occipital meningoencephalocele case report

Kolhapure.V.K, Virupaxi.R.D, Dixit.D

Department of Anatomy, Jawaharlal Nehru Medical College, K.L.E University, Belgaum, Karnataka, India

Meningoencephalocele is herniation of brain and meninges through a defect in the skull. Giant occipital meningoencephaceles are rare lesions. Because of their enormous size they pose surgical challenges.
Method: We report a case of 22 months old female baby who presented with progressively increasing swelling in the occipital region to a present size of 15x8x5 cms, at KLE's hospital Belgaum. MRI of the head revealed a large defect in the squamous part of occipital bone with meninges, brain tissue and fourth ventricle entering the defect.

175. Clinico-anatomical description of an additional lobe of right lung

Hitendra Loh, Avinash Thakur, Ashish Nayer, Rajesh Suri, Gayatri Rath

Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi, India

Introduction: The right lung features two fissures; an oblique and a horizontal which demarcate the three lobes namely superior, middle and inferior. Though abnormal lobar pattern of lungs have been studied on CT scans, these are scarcely reported on gross study.

Method: In the present case we report an additional lobe of a right lung due to presence of a deep fissure prominently seen on the diaphragmatic surface.
Results: The fissure was 10.8cm in length, it started from the oblique fissure on the diaphragmatic surface, ran backwards parallel to the inferior border in a curve to cut the vertebral border behind and thus creating an additional lobe. This extra lobe could be due to abnormal division of the right principal bronchus. Such unusual fissures and lobes are clinically significant in differentiating broncho-pulmonary segments.
Discussion: Anatomical knowledge of anomalous fissures and lobes of lungs may be important for surgeons performing segmental resection, lobectomies; radiologists interpreting X-ray and CT scans besides academic interest.

176. Important information about human anatomy

Rabha Bishnu, Talukdar Kunjalal, Sarma Joydev, Bayan Hemanta

Department of Anatomy, Gauhati Medical College, Guwahati, Assam, India

Objective:- Anatomy is a very interesting subject. There are lots of informations associated with human body and so with human anatomy. All these informations are very important and interesting as well for anatomist and any other categories of people interested in human anatomy. Knowledge regarding arteries, veins, nerves, cartilages and other bodily structures is also a integral part of medical education. So some of the important and valuable anatomical information will be highlighted through this poster to have a glimpse upon the important anatomical facts.

177. Achondroplasia –A rare case report

Shobha.S.Rawlani[a], Shivlal M. Rawlani[b], Monika Khubchandani[c]

[a]*Deptarment of Anatomy, Dr PDMMC Amravati, Maharashtra, India*: [b]*Deptarment of Dentistry, M.G.I.M.S Sevagram, Maharashtra, India*: [c]*Deptarment of Pedodontics, S.P.D.C. Sawangi, Wardha, Maharashtra, India*

Introduction: Achondroplasia is rare genetic disorder also known as short limb dwarfism and occurs roughly 1 in 20,000 live births. Although all bones formed from cartilage are involved in achondroplasia, the proliferation of cartilage is greatly retarded in the metaphysis of long bones. There is abnormal physical growth, defective metaphysical modelling and shortening of tubular bone.
Method: A girl of one year presented with shortening of limbs and progressive enlargement of head. Her skeletal survey showed characteristic phenotypic features of achondroplasia.
Result: Clinical examination revealed height of baby was less and head circumference was more along with frontal bossing. Diagnosis was done by physical examination, radiological findings and genetic testing.

178. Horseshoe kidney –A case report

Bokan R.R., K.Shyamkishore

Seth G.S. Medical College, Parel, Mumbai, Maharashtra, India

Introduction: Horseshoe kidney is a known congenital anomaly of the upper urinary tract. The frequency of appearance is 1/400—.In the horseshoe kidney there is a fusion of the lower poles or upper pole of both kidneys. During migration from the sacral region the two metanephric blastemes can come into contact at the more commonly at the lower pole. The bridge of parenchyma by which they are fused is called the isthmus. When the isthmus of a horseshoe kidney reaches the level of origin of inferior mesenteric artery from the aorta, it cannot rise further. This leads to arrest of ascent at L3 level.
Method: During a routine abdominal dissection a horseshoe kidney was observed in male cadaver.

The morphologic appearance of horseshoe kidney is in direct relation with the manner of fusion of the two kidneys.
Result: In our case, symmetrical fusion of the two kidneys was observed. The right and left kidneys were fused at their lower poles by a parenchymal isthmus located ventral to the abdominal aorta and formed a U-shape with two equal arms. The isthmus was in the midline.

The isthmus of a horseshoe kidney reaches the level of origin of inferior mesenteric artery from the aorta, it cannot rise further. This leads to arrest of ascent at L3 level.
Discussion: Embryological basis and clinical significance of this anomaly is important in planning and conducting surgical procedures.

179. Common hepatosplenic trunk with anomalous origin of right gastric artery

Suman, Rani P, Nagar M

Department of Anatomy, University College of Medical Science & GTB Hospital, Delhi, India

Introduction: Variation in the branching pattern of abdominal vessels are important with the introduction of new diagnostic, therapeutic and operative techniques. Celiac trunk, one of the ventral branches of abdominal aorta usually trifurcates into three branches namely left gastric artery, splenic artery and common hepatic artery which supply important visceras in the upper abdomen.
Method: Anomalous branching of celiac trunk was observed on routine dissection for undergraduate teaching in a fifty five year old female cadaver.
Result: Celiac trunk gave off left gastric artery at a distance of 1.5cm from its origin and continued as a long common hepatosplenic trunk (1.7cm).It gave off splenic artery and continued as common hepatic artery which gave off the gastroduodenal artery, thereafter continued as a very small hepatic artery proper (4mm).The hepatic artery proper divided into left and right hepatic branches which entered the liver .Before the left hepatic branch entered the liver, it gave off the right gastric artery which is a rare variant.
Discussion: It is suggested that such anomalous origin of right gastric artery needs to be kept in mind during surgeries involving liver and gall bladder, chemo-embolisation for hepatic carcinomas and during diagnostic angiography.

180. An abnormal foetus of 20 weeks with multiple congenital anomalies –A case presentation

Banerjee Jaya, Ramarao K, Tripathy LP, Ghosh Subrata

Kalinga Institute Of Medical Sciences, KIIT University, Bhubaneswar, Odisha, India

Introduction: Presentation of a case with Prenatal diagnosis of external obvious congenital anomalies in a 20 weeks foetus without any precipitating factors present in mother.
Method: Collection of foetus from a private clinic soon after termination of pregnancy with proper preservation, elicitation of proper meticulous history of the mother, and collection of all relevant antenatal investigation reports as far as possible. All these materials for this case was studied thoroughly in the department of anatomy of the Institute and tried to elicit the external obvious anatomical anomalies found in the dead foetus.
Results And Conclusions: Studying all the reports, taking history of the mother and thorough investigations of the dead foetus it was found that it has got the following external anatomical congenital anomalies : Narrow Thorax, Micromelia, Incomplete formation of vault of the skull, Umbilical hernia, Talipes (bilateral).

181. Unusual high opening of supra orbital foramen —A case report seen in dry skull bone

Gokul Krishna, Reddy Nune, K. Rama Rao

Kalinga Institute of Medical Sciences, Bhubaneswar, Odisha, India

Introduction: Supra orbital foramen is present in the form of a notch or foramen, usually at the junction of outer 2/3 and inner 1/3 of the supra orbital rim. But this positon is highly variable.
Method: During routine osteology teaching to students, a case of supra orbital foramen was found on the left side of the frontal bone that opened at the middle of the superior ciliary arch.
Result: This opening was high up compared to earlier studies, on the right side the position of the foramen was normal and slightly above the supra orbital margin.
Discussion: The anatomy and knowledge of the opening of the supra orbital foramen has clinical significance during forehead, coronal, brow lift surgeries; during supra orbital block(migraine); probing of the naso lacrimal duct in cases where spontaneous opening absent.

182. Situs inversus —A case report

B. Ramkumar, Vathsala Venkatesan, WMS Johnson

Sree Balaji Medical College & Hospital, Chrompet, Chennai, Tamilndau, India

Introduction: Situs inversus is a congenital positional anomaly characterized by transposition of abdominal viscera, and when associated with a right sided heart (Dextrocardia) is referred to as situs inversus totalis. The situs inversus totalis is a rare syndrome, with an estimated prevalence of 1/10.000 births. Generally, patients with situs inversus totalis are asymptomatic and have a normal life expectancy The importance of imaging in this pathology lies in identifying those patients to avoid misdiagnosis and most important in examining these patients before surgery.
Method: We report the case of a 20-year-old girl who presented to the emergency department with a 4-day history of diffuse abdominal pain.
Results: On investigation, chest radiograph showed dextrocardia with gas under left dome of diaphragm and ultrasonography of the abdomen revealed situs inversus.
Discussion: Surgeons must be aware of such anomalies of development to reduce error of diagnosis. Radiological examination has significant value in detection of situs inversus viscerum. To reduce diagnostic errors other procedures like USG, CT scan can be used.

183. A rare anatomical case of existence of dorsal pancreatic artery —A clinical perspective

Hansdak Ranjeeta, Pakhiddey Rohini, Thakur Avinash, Anshu Ashutosh, Mehta Vandana, Suri R K, Rath Gayatri

Department of Anatomy, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi, India

Introduction: The celiac trunk is considered an important landmark in the sub-hepatic region especially while performing abdominal surgeries. It has specific relevance for abdominal surgeons and radiologists in their operative and radiological manoeuvres. Thus it has been studied in the past for its significant embryological, phylogenetic morphometric and anatomical details.
Method: During an undergraduate medical teaching programme at Vardhman Mahavir medical college, a 65 years male cadaver was dissected and observations were noted.
Result: The current case study illustrates a rare quadrifurcation of the celiac trunk into left gastric common hepatic, splenic and dorsal pancreatic arteries.
Discussion: Precise knowledge of the origin, course and regional distribution of this anomalous artery is of utmost clinical significance to the Surgeons and Radiologists performing different procedures of the abdomen. In addition, this information of a rare branch from the celiac trunk has academic relevance as well.

184. An unusual sensory-motor nerve communication —A case report

Dhawan V., Jain N., Dhar P.

Department Of Anatomy, All India Institute of Medical Sciences, New Delhi, India

Introduction: The posterior femoral cutaneous nerve (PFCN) has been widely studied with context to its origin, distribution and mononeuropathies. However, a communication between PFCN (sensory) and inferior gluteal nerve (IGN) (motor) seems to be a rare variation.
Method: During routine dissection of a 56-year-old male cadaver, we observed an unusual communication between between the PFCN and the IGN on right side. However, the origin, course and distribution of the PFCN as well as the IGN showed no other variation. The remaining branches of the sacral plexus were within normal limits.
Result: The block of PFCN, providing sensory innervation to gluteal and uppermost postero-medial thigh, assumes importance when thigh tourniquets are used for lower extremity procedures of long duration at the knee or below knee. The PFCN has been rarely documented to show a peripheral sensory motor communication with the IGN. A motor response can thus be elicited by stimulation of the IGN while attempting the PFCN stimulation. The grade of the motor response elicited can be a reliable estimate in achieving adequate PFCN block to avoid the tourniquet pain in such procedures requiring application of thigh tourniquet.

Discussion: This communication may also be helpful in assessing the function of IGN in case of iatrogenic injury to the nerve during posterior or postero-lateral approach to hip in hip replacement surgeries.

185. Bilateral variation of sternocleidomastoid muscle origin –A case report

Dhawan V., Bhattacharya A., Dada R.

Department of Anatomy, All India Institute of Medical Sciences, New Delhi, India

Introduction: Sternocleidomastoid (SCM) muscle serves as a prominent surface landmark during attempted surgical interventions in the cervical region. The anatomical and developmental aspects of SCM and its morphological variations assume relevance during interventions of the lesser supraclavicular fossa located between its sternal and clavicular heads. An awareness of these variations may be important because of its close relationship with neurovascular structures lying deep to it.
Method: Bilateral variation of SCM origin was observed during routine dissection in two cases of 47 and 54 year old male cadavers.
Result: The presence of an additional clavicular head causing significant stenosis of the lesser supraclavicular fossa was observed in both cases. This additional lateral clavicular head was seen to blend with the medial head. Cranially the SCM muscle was attached to the mastoid process and superior nuchal line.
Discussion: These findings are of prominent significance for anaesthesiologists in subclavian or external jugular vein catheterization as well as ultrasound guided needle positioning in brachial plexus block, and in surgical interventions involving structures lying under SCM. The familiarity of such variations is important for radiologists to interpret magnetic resonance imaging scans and for surgeons as these additional slips can be used as myocutaneous flaps in head and neck region.

186. Variation in origin of medial circumflex femoral artery

Pallavi Sahay, F Shaikh, K Nemade, N Y Kamdi, M M Meshram

Department of Anatomy, Government Medical College, Nagpur, Maharashtra, India

During a routine dissection of lower limb of a male cadaver in the department of anatomy GMC Nagpur, it was observed that medial circumflex femoral artery originated directly from femoral artery instead of Profunda femoral artery. This variation was bilateral in this cadaver. After origin the courses of medial circumflex femoral arteries were normal on both sides.

187. Bilateral levator glandulae thyroideae with absence of isthmus

Yadav Abhijeet[a], Dixit Asha[b], Sharma Vandana[b], Baweja Sonia[b], Marskole Sandeep[b], Srivastav Monika[b]

[a]*Bundelkhand Medical College, Sagar, Madhya Pradesh, India*: [b]*Gandhi Medical College, Bhopal, Madhya Pradesh, India*

Introduction : To throw light on the anatomy and embryological basis of the study variation - bilateral levator glandulae thyroideae with absence of isthmus.
Method: Dissection of the neck of a male cadaver as a routine procedure was performed. Variation noted was thoroughly examined. The area was cleaned properly.
Result: In the present cadaver, the variation under study existed from the upper 2 lobes of thyroid gland and ended up at hyoid bone measuring approximately 5 cm. There was absence of isthmus in this case.
Discussion:

1. This is one of the extreme variations of thyroid according to literature.
2. Important for anatomists, morphologists and embryologists.
3. Very important for thyroid surgeons.

188. An ossified anterior longitudinal ligament of verterbral column –A case report

Priyanka. M, S.B. Malipatil

Department of Anatomy, Mahadevappa Rampure Medical College, Gulbarga, Karnataka, India

During the routine osteology class MBBS students phase I ,2012-2013 batch in the department of anatomy, M. R. Medical college Gulbarga, an ossified anterior longitudinal ligament of thoracic vertebra was found. The probable cause and details of the same will be dealt during the presentation.

189. Bifid rib –A case report

Priyanka. J, S.B. Malipatil

Department of Anatomy, Mahadevappa Rampure Medical College, Gulbarga, Karnataka, India

During the routine osteology class of MBBS students phase I, 2012-2013 batch in the department of anatomy, M. R. Medical college Gulbarga, a bifid typical rib of right side where the sternal end was cleaved into two was found. The probable cause and details of the same will be dealt during the presentation.

190. Prenatal and postnatal stress of long duration only affects the developing substantia nigra neurons

Prakash B. Babu[a], Ramachandra K.Bhat[b], Muddanna S Rao[c]

[a]*Department of Anatomy, Kasturba Medical College, Manipal University, Manipal, Karnataka, India*: [b]*Department of Anatomy, Father Mullers Medical College, Karnataka, India*: [c]*Department of Anatomy, Faculty of Medicine, Kuwait University, Kuwait*

Introduction: Neuronal organization, neurochemical make up and functional integrity of hippocampus and substantia nigra (SN) are highly plastic and shown to be affected by stress.

This study was aimed to study the effect of restraint stress during prenatal and early postnatal period on the development of SN neurons in mice.
Methods: Pregnant mice (BALB/C strain) were restraint stressed (6 hours/day in a wire mesh restrainer) either for 5 days [Gestation

day (GD) 16-21] or21 days (GD0-21). New born pups were restraint stressed for 5 days [Postnatal day (P) 16-21] or 21 days (P0-P21).All stressed mice were sacrificed at the end of stress period along with age matched control mice. SN was dissected, processed for Golgi staining. Well stained SN neurons were traced using camera lucida, and dendritic arborization was quantified by concentric circle method. Data was analyzed by one way ANOVA.

Results: The suprarenal weight was significantly increased in pups which were stressed during GD0-21, but not in those stressed during GD16-21. Stress during P0-21resulted in increased suprarenal weight, but not during P16-21.In mice pups stressed from GD0-21, there was a significant decrease in dendritic branching points and dendritic intersections compared to age matched controls. Such dendritic deficiency was not noticed in mice pups stressed from DG16-21.Stress from P0-21resulted in significantly decreased dendritic arborization, but not stress from P16-21.

Discussion: Results of the present experiment suggest that stress of significant duration(21days) is essential in altering dendritic development in substantia nigra neuron both during prenatal and postnatal developmental periods. Stress of shorter duration (5days) during the above developmental period has no effect on dendritic growth.

191. Anatomical variation of unilateral high division of sciatic nerve —Case report with clinical implications

Badaam Asim M., Sukre S. B., Diwan C.V.

Department of Anatomy, Government Medical College, Aurangabad, Maharashtra, India

Introduction: To present anatomical variation findings that have clinical significance. Significant number of reports regarding anatomical variation of high division of Sciatic nerve is being given by several authors. This variation (high division of sciatic nerve) may result in sciatica, nerve injury during deep intramuscular injections in gluteal region, piriformis syndrome and failed sciatic nerve block in anaesthesia and so on. Descriptions of Entrapment Neuropathies involving the peripheral nerves are relatively common, especially in Sciatic nerve (SN).

Methods: During routine cadaveric dissection for a graduate teaching program, 20 gluteal regions were examined in ten formalin-fixed adult cadavers &unilateral sciatic nerve variants were observed in relation to piriformis muscle. Further dissection was performed to fully expose their anatomy.

Result: Unilateral sciatic nerve variants were observed in relation to piriformis muscle in 2 cadavers that is in one female and one male. Totally 2 lower limbs showed variation in the division of sciatic nerve.

Discussion: Knowledge of these variations in course of sciatic nerve may help surgeons and all those concerned to avoid complications and plan their intervention in a better and more effective way.

192. Cleidotrapezius: An unusual variant slip from the sternocleidomastoid —A case report

Mittal Sachendra Kumar, Sushma RK, A S D'souza, Kumar M.R. Bhat

Department of Anatomy, Kasturba Medical College, Manipal University, Manipal, Karnataka, India

Introduction: The abnormal origin, presence of additional bellies and slips, layered arrangement of fibres are common variations of the sternocleidomastoid muscle. Variations are more common in the cleidomastoid portion of the muscle.

Method: During routine dissection classes in the department of Anatomy, Kasturba Medical College, Manipal rare variation was encountered in a 62-year-old male cadaver.

Result: A muscle fascicle was found arising from the clavicle close to the clavicular part of the sternocleidomastoid. This then crossed the posterior triangle running deep to the external jugular vein but superficial to the supraclavicular nerves. Finally the muscle fasciculus was found blending with the trapezius. The nerve supply when traced was provided by the spinal accessory nerve.

Discussion: Awareness of such variations is important for surgeons as it might interfere with the invasive techniques and cause difficulties in the surgeries in this region. These variations may also be a reason for the pain due to nerve compressions in this region. These additional slips can be used as myocutaneous flaps in head and neck surgeries. This type of variation is also important for radiologists while interpreting MR images of this region.

193. Low formation of median nerve in arm: An interesting case

Brijendra Singh[a], Dushyant Agrawal[a], Shilpi Gupta Dixit[a], Renu Gupta[a], Ashish Nayyar[a], Surajit Ghatak[a], Gitika Arya Agrawal[b]

[a]*Department of Anatomy, All India Institute of Medical Sciences, Jodhpur, Rajasthan, India*: [b]*Rishikul Government Ayurvedic PG College, Haridwar, Uttarakhand, India*

Introduction: Median nerve is formed by lateral cord & medial cord union in front of third part of axillary artery as a routine, some times high, low and very low formation is encountered during dissection in anatomy as well as surgical operations/ exploration in the operation theatres. Importance of the present case report is to increase awareness about the variations in the formation of median nerve, so that these variation must be kept during teaching, learning and clinical application.

Methods: During routine dissection of upper limb for MBBS 1st year students at LLRM Medical College, Meerut & Hamdard Institute of Medical Sciences & Research, Jamia Hamdard, New Delhi, we found variation and low formation of median nerve in one case on right side out of total 44 upper limb in 22 cadavers.

Results: As we all know that routinely there are few variations ranging from 1-3 % and may be more related to formation of various nerves from the cords of brachial plexus. Median nerve formation has got more importance because it is formed by two different root, as well as it is formed in front of third part of Axillary artery, high & low formation variation are more important in view of clinical/surgical procedures.

Discussion: In the case of low formation, the median nerve may be more superficial and may be pressed/ injured by sphygmomanometer pressure/ fracture of shaft of humerus.

194. Voluntary body donation —A survey of awareness in Ujjain district

Jain Ravi, Patil Manish, Gupta Jitendra, Babu Sangeeta, Jain Amit, Ranjan Rajiv, Chaturvedi Manish, Chouhan Vijay

Department of Anatomy, R.D.Gardi Medical College, Ujjain, Madhya Pradesh, India

Introduction: The knowledge of human anatomy plays a vital role. The extensive knowledge of human Anatomy can only be gained by exploring the human anatomy. But the availability of human cadavers for the purpose of study is becoming a scarcity. The only way of obtaining the cadavers has been through voluntary body donation in this aspect a study is conducted in Ujjain district, M.P. among the general public and the medical professional.
Methods: A questionnaire is prepared and distributed to totally 100 people of which 50 belong to general public and 50 belong to medical professionals. The data was collected in three categories: the number of people who denied donating the body and the number who agree to donate and number of people who were unaware of body donation but accepted to donate the body after they were explained the importance of body donation.
Result: The data is collected and analyzed. In that most of the people are interested to donate body.

195. Third head of biceps brachii (caput accessorium) –A case report

Mittal Anupama, Saxena Preeti, Khare Satyam

Department of Anatomy, Subharti Medical Medical,Meerut, Uttar Pradesh, India

Introduction: The 3rd head of biceps brachii muscle may be an incidental finding at autopsy or during anatomical dissection. To study a supernumerary & variant head of biceps brachii muscle in a male adult cadaver.
Method: A male adult cadaver which was fixed in formalin was studied for abnormal head of biceps brachii muscle. The flexor compartment of arm was dissected and attachment of biceps brachii muscle was studied in detail & appropriate photographs were taken.
Results: In the cadaver which was dissected we observed 3rd head of biceps brachii muscle on left side. The two heads of biceps (long & short) arose from its usual position, the anomalous 3rd head was taking origin from lateral side of middle one third of shaft of humerus below the insertion of deltoid. The 3rd head was found to fuse with common belly of muscle for insertion & was supplied by twig of musculocutaneous nerve.
Discussion: Variant bicep brachii muscle may confuse a surgeon who perform procedure on the arm & may lead to iatrogenic injury, so surgeon & traumatologist must keep such muscular variations in mind.

196. Anatomical variations of infraorbital foramen –A study in adult human skulls

Dixit Shilpi Gupta, Agrawal Dushyant, Nayyar Ashish Kumar, Singh Brijendra, Gupta Renu, Ghatak Surajit

Department of Anatomy, All India Institute of Medical Sciences, Jodhpur, Rajasthan, India

Introduction: To analyze the anatomical variations by comparing various morphometric measurements of infra orbital foramen in dry skulls of adult North Indian population.
Methods: The study was conducted on 75 dry adult human skulls which were a part of Department of Anatomy used for teaching purposes in medical colleges. Straight distance of the infraorbital foramen from the infraorbital rim, supraorbital foramen and sagittal plane were measured with the help of digital vernier callipers. The position of the infraorbital foramen was determined in relation to maxillary teeth and supraorbital foramen. The data thus obtained was analyzed statistically.
Results: The distance of infraorbital foramen from infraorbital rim, supraorbital foramen, sagittal plane in the present study was found to be 6.71±1.11 mm, 42.02±4.31mm and 31.94±4.88 mm respectively. The position of infraorbital foramen was lateral in relation to supraorbital foramen (in 88% of cases). Infraorbital foramen was above the 1st premolar tooth in most of the cases. Accessory Infraorbital foramen was found in 11.2% cases (double foramen).
Discussion: The data thus obtained will perhaps be helpful to the surgeons in identifying the extent of the operative field thereby reducing procedural risks.

197. Tubular stomach –A case report

Dernase Nagorao P., Bhagwat V. B., Dhapate S.S.

Department of Anatomy, S. R. T. R. Government Medical College, Ambejoqe, Maharashtra, India

Introduction: Anatomical Variation in the shape and size of the stomach has been well documented in various literatures.
Method: During the routine anatomical dissection of the human cadavers in the Department of Anatomy, SRTR Government Medical College, Ambajogai a variation in the shape of stomach was found. In the present report this variation has been studied and documented.
Result: Shape of stomach depends upon its distension and surrounding viscera. It is "J" shaped (vertical) when empty, pyriform in shape when partially distended and horizontal in obese. The Tubular stomach may be due to normal anatomical variation or due to pathological condition.
Discussion: Variation of these kinds can be of interest to surgeons and pathologist while doing surgical operations on stomach and possible development of malignancy in stomach.

198. Accessory spleen –A case report

Walwante R.D., Dhapate S.S., Gardanmare D.B.

Department Of Anatomy, SRTR Government Medical College, Ambajogai, Maharashtra, India

During routine cadaveric dissection of 1st year MBBS students of academic year 2012-13, we found one unusual finding on cadaveric body that there is small nodule of splenic tissue found apart from the main body of spleen, measuring 2.5x2x1.5 cm, near the hilum of spleen and it is supplied by artery originating from splenic artery and the venous drainage is carried out by separate vein and then drained into the main splenic vein. These findings have been studied by dissection and histological examination, and was concluded that this nodule is of accessory spleen.

Accessory spleen is observed in about 10% of human population. Although it is often placed at the splenic hilum or the tail of

pancreas, but it can also be seen at many places including thoracic cavity.

As the disease affecting spleen may also affect the accessory spleen, gross and microscopic structure of the accessory spleen has also been studied. We present this case to stress its clinical importance.

199. Accessory left renal artery –A case report

Hiware S.H, Gujar V.K, Sontakke B.R, Wankhede V.R, Tarnekar A.M, Shende M.R

Department of Anatomy, Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha, Maharashtra, India

During undergraduate dissection of 55 year old male cadaver at MGIMS Sewagram (2012-13 batch) an accessory left renal artery was found about 2.5 cm below the main left renal artery arising from the abdominal aorta and supplying the lower pole of the left kidney in front of the left ureter. Left gonadal artery was arising from left accessory renal artery. The relations of the structures at the sinus of kidney on both the sides were maintained as normal.

200. Partial assimilation of the Atlas –A case report

Pawar Sudhir E., Zambare B.R.

Department of Anatomy, Pad. Dr. Vithalrao Vikhe Patil Foundation's Medical college, Vilad Ghat, Ahmednagar, Maharashtra, India

Introduction: A rare case of congenital malformation i.e. Partial assimilation of the Atlas was observed in the department of Anatomy and presented here. Though it is a rare, but when it creates symptoms, then it is very important in view of Orthopedicians and Surgeons to know such a rare variation in the upper cervical spine.
Method & Result: During routine analysis of all bones in the department, arranging for osteology section in museum, we came across such a skull in which the Atlas was partially fused with occipital bone. Then we searched in details for this rare congenital malformation of the craniovertebral region.
Discussion: The assimilation may be partial or complete. It may have resulted due to disruption in the separation of the caudal part of the first sclerotome from the cranial part of the first sclerotome.

201. Multiple sutural bones along the lambdoid suture –A case report

Paramasivam Velu, A.Perumal, Shastri Deepti, Chandrasekaran Shanta

Department of Anatomy, Vinayaka Mission's Kirupananda Variyar Medical College, Salem, Tamil Nadu, India

Introduction: Wormian bones are small bones found at the sutures of skull. They are commonly found in relation to frontal and occipital bones. wormian bones are typically present along the lambdoid suture. During routine demonstration of a male skull to medical students we observed multiple wormian bones along the lambdoid suture in the skull. More than 10 wormian bones are considered to be abnormal. In our case 17 wormian bones were found along the lambdoid suture. Knowledge of this variation is very important for anthropologists, radiologists, orthopaedicians and neurosurgeons because it can mislead in the diagnosis of fracture of skull bones.

The aim of present study is to identify the multiple sutural bones along the lambdoid suture. To classify the bones based on their shape.
Methods (Parameters Of Measurements): Human dry skull, photographic equipment. Observation of number and shape of sutural bones.
Discussion & Results: A case of sutural bone is reported. In our case 17 sutural bones were found along the lambdoid suture. It can be mistaken as a fracture of skull bones.

202. Unilateral variation in the internal carotid artery –A case report

Kumaraswamy R., Sangeeta M., Shiny Vinila B H.

Department of anatomy, Sri Devaraj Urs medical College, Kolar, Karnataka, India

Introduction: Internal carotid artery is a terminal branch of common carotid artery at the level of upper border of thyroid cartilage (3rd cervical vertebra). The internal carotid artery runs vertically upward in the carotid sheath, and enters the skull through the carotid canal.
Method: During the routine dissection of 57yr old male cadaver at sri devaral urs medical college, kolar, we observed a variation in the course of internal carotid artery.
Results: Usually the artery ascends straight upwards in neck but in our case the artery took a sharp "S" shaped turn about 3cm from its origin.

203. Variations in supratrochlear foramen

Chakraborty D, Thanaojum NS, Ningthoujam DD

Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur, India

Introduction: The study was aimed to highlight some knowledge on the variations on size, shapes in supratrochlear foramen.
Method: The study of supratrochlear foramen was done on 20 numbers of humerus in the Department of Anatomy, RIMS, Imphal. Permission from concerned authority was taken to do the study. Transverse and vertical diameters of STF were taken by sliding caliper to the highest dimensions. The translucency and opacity were noted by placing against the light.
Results: In 15% of the humerus, STF was present. 10% of the cases were oval shaped measured 8 mm X 6 mm and 4 mm X 3 mm. 5% cases were rounded and measured 3 mm X 3 mm.
Discussion: Supratrochlear foramen is an important variation in the distal end of the humerus. The anatomic knowledge of STF will be beneficial for anthropologist, orthopedic surgeon and radiologist in day to day clinical practice.

204. Effects of therapeutic doses of diclofenac sodium on the histomorphology of Liver ff Albino rats

Sharma M, Raina S, Sharma A K, Magotra R

Postgraduate Department Of Anatomy, Government Medical College, Jammu, Jammu and Kashmir, India

Introduction: Anti-inflammatory drugs reduce pain and inflammation in response to infectious agents, trauma, musculoskeletal diseases and surgical procedures.
Method: Thirty male Wistar Albino rats were randomly divided into 3 equal groups. The first group (control) received normal saline (0.5ml/day), second & third group received diclofenac sodium (DS) at a dose of 5 & 10mg/kg orally once daily for thirty days.
Results: The results showed that, DS in group II induced mild congestion of central vein, sinusoids and portal vein with mild inflammatory cell infiltration in portal areas. Hepatocytes showed pleomorphism, mild cloudy swelling, vacuolar degeneration, double nuclei with occasional mitotic figures, apoptotic cells and increased number of Kupffer. DS in group III revealed findings which were almost similar to group II, but to a greater degree or extent and in addition hepatocytes showed hydropic degeneration both in paravenular & paraportal areas. Focal necrotic hepatocytes were found at places. Regenerative attempts by hepatocytes like binucleate hepatocytes, karyomegalic nuclei, prominent & double nucleoli and increased number of mitotic figures were seen.
Discussion: It could be concluded that administration of DS even at therapeutic dose induced some adverse effects on histology of liver. That could be attributed to oxidative stress induced by the drug, formation of toxic metabolites and covalent binding of the drug to hepatic proteins forming protein adducts. Therefore, precautions should be taken before these drugs are prescribed to vulnerable patients to reduce the risk of liver related deaths seen with the therapeutic doses and it is advisable to use diclofenac and other anti-inflammatory drugs on the prescription of a Registered Medical Practitioner only.

205. Greater omental pancake tumour due to metastasis of ovarian cancer –A cadaveric study

Bhusari Prashant Amanrao, Khairnar Karan Bhagwan

Department of Anatomy, MVPS Dr.Vasantrao Pawar Medical College, Adgaon, Nashik, Maharashtra, India

Introduction: A unique rare attempt is made here to trace masses & its causes found in an abdomen of female cadaver during routine anatomy dissection
Method: Routine dissection of abdomen
Results & Conclusion: The mass was thick, hard, somewhat nodular in the region of greater omentum. It was found that both the ovaries were bulky, nodular & hard. It is also found that liver also involved by metastasis. Primary human omental adipocytes promote homing, migration and invasion of ovarian cancer cells, and that adipokines including interleukin-8 (IL-8) mediate these activities. An author feels to investigate such mass to upgrade the knowledge & fulfil curiosity of 1st MBBS students too.

206. A rare case with multiple variations of liver and associated arteries

Jain M, Shukla L, Jain S

Maharaja Agrasen Medical College, Agroha, Haryana, India

Introduction: Variations of liver, its arterial supply and branching pattern of coeliac trunk are not uncommon as separate entity but this case presents several variations.
Method: During routine dissection of a 50-55 year old male cadaver for undergraduate students, a multi-lobular liver with irregular inferior margin was observed occupying only right upper quadrant of the abdomen.
Result: An extra (accessory) lobe was hanging from its inferior surface. Common hepatic artery was giving eight branches, six on left side and two on right side. Five of the left branches were entering the liver but none was passing through porta hepatitis. Coeliac trunk showed tetrafurcation; the additional branch was supplying pancreas and transverse colon.
Discussion: Knowledge of these variations or combinations is important in open access surgeries, endoscopic surgeries and diagnostic and interventional radiology of the region.

207. Highest extent of medial and lateral head of triceps brachii muscle

Kaur D, Shukla L, Jain M

Maharaja Agrasen Medical College, Agroha, Haryana, India

Introduction: Triceps brachii muscle (TBM) arises by three heads; long, lateral and medial. Description of the highest extent of lateral head (LH) and medial head (MH) of the TBM is undermined.
Aims: To know the extent of proximal attachment of MH and LH in relation to the anatomical neck of humerus and capsule of shoulder joint (SJ).
Methods: This study was conducted on 50 formalin fixed upper limbs obtained from dissecting room. Scapular region was cleared to expose proximal attachments of LH & MH and anatomical neck of humerus. Distance of proximal attachment of LH and MH to the lowermost part of anatomical neck of humerus medially (OD) &Vertical distance from proximal attachment of LH and MH to the anatomical neck of humerus (VD) were measured with the help of sliding caliper.
Results: LH in 28% and MH in 6% of cases were blending with capsule of SJ. Mean VD of LH and MH were 2.8 cm & 5.1 cm respectively while mean OD of LH and MH were 2.8 cm and 4.8 cm respectively, but these differences were not significant statistically. In most of the cases of LH, OD and VD falls in the range of 2-4 cm (64%& 58% respectively) whereas in case of MH, OD and VD falls in the range of >4 cm (68% & 74% respectively).

208. Axillary arch muscle

Sachdeva K, Lalit M, Mahajan A, Delmotra P

Department of Anatomy, Sir Guru Ram Das Institute of Medical Sciences & Research, Amritsar, Punjab, India

Introduction: Purpose of the present study was to report a rare case of axillary arch muscle. Knowledge of this muscle variation and the possibility of finding it during axillary procedures are crucial for lymph node staging, lymphadenectomy & for differential diagnosis in compressive pathologies of axillary vessels & brachial plexus.
Methods: During routine dissection of left axilla in a 60-year old male cadaver, an anomalous muscular slip was encountered.
Results: The slip was extending between latissimus dorsi muscle to pectoralis major muscle and was confirmed as axillary arch muscle.
Discussion: The embryological basis, genetics & clinical implications will be discussed at the time of presentation. This variation

will be of interest not only to anatomists but also for clinicians and surgeons dealing with this area.

209. Placenta with double umbilical cord

Khan Mohd Anas, Sinha D N, Singh A K, Deopa Deepa, Niranjan Richa, Pant M K.

Government Medical College, Haldwani, Uttrakhand, India

We have studied 100 term placentas procured from Obs and Gynae Dept from Dr. Sushila Tiwari Govt Hospital Haldwani. We have noticed one placenta found to have dual umbilical cord radiating in two divisions just 4 cm above the fetal surface of placenta. Having seen this peculiar type of placenta we have decided to present this in form of a case report.

We have measured the morphological feature of this placenta which revealed 25 cm length of umbilical cord from fetal surface and the distance between two cords on the fetal surface was 4cm and further thickness is recorded as 1.6cm. The study also revealed the site of insertion of cord was slightly away from centre therefore it could be ascertained as eccentric position. We have also appreciated presence of 3 knots at following distance 4.5cm, 14.3cm, 17.2cm respectively from junction of meeting point of two cords. The placenta appeared to be circular in shape and we have noticed 2 arteries and 2 veins. The weight of the baby delivered was 3.7kg. Hospital information did not show presence of any congenital anomalies in neonate.

210. Bilateral unusual course of musculocutaneous nerve and abnormal communications with the median nerve –A case report

Gangmei G, Thounaojam N S, Ningthoujam D D

Department of Anatomy, Regional Institute of Medical Sciences, Imphal, Manipur, India

Objective: To report variations in the course of musculocutaneous nerve.
Methods: During routine dissection on a male cadaver, aged about sixty years, performed in the Department of Anatomy, Regional Institute of Medical Sciences, (RIMS), Imphal, Manipur, bilateral variations in the course of Musculocutaneous nerve were observed, examined and photographed.
Result: On the right side, the lateral cord of the Brachial Plexus gave a small lateral root for the Median Nerve and at the same level the Musculocutaneous nerve also originated and entered the anterior compartment of arm by piercing the Coracobrachialis muscle and gave a separate branch each to Biceps Brachii and Brachialis and also gave a large abnormal communication to the Median nerve in the arm.

On the left side, the Musculocutaneous nerve instead of piercing the Coracobrachialis muscle it passed in front of the muscle and gave a separate branch each to all the three muscles of the front of arm. It also gave abnormal communication to the Median nerve in the arm.
Discussion: Musculocutaneous nerve is the largest branch from the lateral cord of Brachial plexus. It enters the anterior compartment of arm by piercing the Coracobrachialis muscle. Variations of this nerve are common and well documented in various literatures and applied anatomical knowledge of such variations is of immense importance in clinical practice.

211. High origin of subscapular artery –A case report

Thounaojam O S, Thounaojam N S, Ningthoujam D D

Department of Anatomy, Regional Institute of medical Sciences, Imphal, Manipur, India

Objective: To report a case of high origin of subscapular artery on right side.
Methods: During routine dissection of upper limb of a female cadaver of about 62 years, in the Department of Anatomy, RIMS, Imphal, a variation in the origin of subscapular artery was found on the right side. The origins of the branches of the axillary artery were evaluated after reflection of skin, superficial fascia and pectoralis major; pectoralis minor was cut and axillary artery was fully exposed.
Result: Superior thoracic artery was found originating from first part of axillary artery. Anterior circumflex humeral and posterior circumflex humeral arteries were originated from the third part. Subscapular artery was originated from the second part of axillary artery opposite to the origin of the thoracoacromial artery and behind the lateral thoracic artery.
Discussion: Origin of subscapular artery from the second part of axillary artery is an uncommon variation. Awareness about different variations of branches of axillary artery will be of utmost importance in various surgeries of the region.

212. A case report on the accessory spleen

Biswas Krishna Kanta, Ahmed Abdul Alim, Talukdar Kunjalal

Gauhati Medical College, Guwahati, Assam, India

Objective: To study the presence of accessory spleen.
Methods: During routine dissection of abdomen of an approximately 40 years old male cadaver allotted to first year MBBS students in the Department Of Anatomy, Gauhati Medical College, Guwahati, a case of multiple accessory spleens was found.
Result: In the present study, 8 numbers of accessory spleens of different sizes were found, which are supplied by separate vessels. Out of these, 2 are marble shaped and the rest 6 are pea shaped.
Discussion: Additional collections of fully functional splenic tissue may exist near the spleen, especially within the gastro-splenic ligament and the greater omentum. These accessory spleens or splenanculi are usually isolated, but can be connected to the spleen by thin band of similar tissue.

213. Presence of natural foramen in the leaflet of the tricuspid valve –A case presentation

Borah Biswajit, Talukdar Kunjalal, Bongshiary Chandan

Department Of Anatomy, Gauhati Medical College, Guwahati, Assam, India

Introduction: To study the presence of natural foramen in the leaflet of the tricuspid valve.

Methods: During routine dissection, a heart with a foramen in the tricuspid valve leaflet was found. To see the tricuspid valve orifice heart was dissected through the coronary sulcus followed by exposure of the right ventricle through the right lateral wall. Then cutting through the anterior-posterior commissure, the tricuspid valve leaflets were exposed.
Result: A foramen was found in the posterior leaflet of the tricuspid valve which is ellipsoid in shape.
Discussion: In around 11% to 20% of heart specimen foramina found naturally. The natural foramina present in the leaflets of the tricuspid valve may be single or multiple. These are located in the one of the three leaflets, mostly in the septal leaflet. The natural foramina in the leaflets of the tricuspid valve may be responsible for the additional jets which can be seen during echocardiography.

214. Bicornuate uterus –A case report

Deb Barma Saranya,Talukdar Kunjalal

Department of Anatomy, Gauhati Medical College and Hospital, Guwahati, Assam, India

Objective: To study a rare case of bicornuate uterus.
Methods: A 30 year old female married for 10 years came to the Department of Obstetrics and Gynaecology, Gauhati Medical College, Guwahati. She presented with a history of ruptured ectopic pregnancy in shock. She was gravida five. Her past history had 4 abortions for which she had undergone blood tests which were all normal. Her menstrual history was also normal. Her previous physical examination did not reveal any remarkable findings. There was no history of consanguineous marriage and there were no family history of abnormal pregnancies.
Results: The patient underwent emergency laparotomy which revealed bicornuate uterus.
Discussion: Bicornuate uterus is a rare mullerian duct anomaly caused by fusion defects of the mullerian duct during embryogenesis. The incidence of uterine malformation is estimated to be 3% to 5% in general population. They are of clinical significance because they can result in fertility problems ranging from infertility and recurrent abortions to prematurity, malpresentations and ectopic pregnancy. Due to the rare incidence of the case it is being reported, analysed and studied.

215. Unusual branching pattern of splenic artery-Anatomical description and clinico-embryological explanation

Pakhiddey R, Hansdak R, Mehta V, Suri R.K, Rath G

Department of Anatomy, Vardhaman Mahaveer Medical College & Safdarjung Hospital, New Delhi, India

Objective: To present two rare variations in the branching pattern of splenic artery.
Methods: During the course of routine dissection of a 42 year male cadaver for teaching of preclinical medical students, we noticed two rare variations in the branching pattern of the splenic artery.
Result: The splenic artery was significantly non-tortuous; it was smaller (6 cm) in length. The splenic artery was seen to give a posterior gastric branch along with an accessory branch to the splenic flexure of the colon.
Discussion: The uniqueness of the current report lies in the fact that the splenic artery gave both posterior gastric branch and an accessory branch to left colic flexure. It is important for the surgeon to be aware of the existence of these variant branches of splenic artery. These variations may be overlooked intraoperatively increasing the chances of inadvertent bleeding if damaged. Hence, their importance in abdominal surgical procedures especially, pancreatic transplant surgeries and left colonic resections cannot be overlooked. It is equally interesting to note that in the present case; an artery of the foregut was seen supplying an area of the artery of hindgut. This variation in the branching pattern of splenic artery can be correlated with its embryological development.

216. A radiological study of polycystic kidney with oligohydramnios –Potter's Syndrome

Arun Kumar.S. Bilodi[a], Arjun[b]

[a]*Department of Anatomy, Velammal Medical College Hospital & Research Institute , Madurai, Tamil Nadu, India*: [b]*Department of Radiology, Velammal Medical College Hospital & Research Institute, Madurai, Tamil Nadu, India*

Introduction: The objective of present study is to report a case of fetus showing polycystic Kidney with oligohydramnios by ultrasound study.

This study was done in the month of May 2013-08-28. In Radiology department of Velammal Medical College Hospital & Research Institute, Madurai.
Methods: A mother of 26 years old with 34 weeks amenorrhoea underwent ultra sound examination dated 28.05.2013 at our Velammal Medical College Teaching Hospital which showed 38 weeks of amenorrhoea with enlarged bilateral autosomal recessive polycystic kidneys with severe oligohydramnios .
Results: Ultrasound report done on female aged 26 years old on 28.05.2013 at our Velammal Medical College Hospital showed Single live intrauterine fetus in cephalic presentation with the foetal spine to the maternal left. Foetal movements were present along with foetal cardiac pulsations and foetal heart rate of 134 bpm. Ultra sound also showed placenta in fundal and anterior wall region of the uterus Features were suggestive of Autosomal bilateral enlarged recessive polycystic kidney with oligohydramnios.
Discussion: This is study of bilateral enlarged recessive polycystic kidney with oligohydramnios suggestive of Potter's Syndrome.

217. Bilateral renal agenesis –A case report

Vahini.P, Vathsala Venkatesan, WMS.Johnson

Sree Balaji medical college & hospital, Chrompet, Chennai, Tamilnadu, India

Introduction: Renal agenesis is a relatively common congenital anomaly although its etiology is unknown. Renal agenesis refers to a congenital absence of one or both kidneys (bilateral or unilateral).Bilateral agenesis is less common affecting approximately 1 in 4000 live births and it is fatal. Bilateral agenesis is associated with anhydramnios and additional birth defects.

Aim & Objectives: Is to report a case of bilateral renal agenesis which is a less common congenital anomaly .This was studied from an embryological perspective and with reference to the multifactorial etiologies attributed to it.
Case Report: We present to you an interesting case of a 26yr old female with no previous bad obstetric history in wedlock with a consanguineous spouse, who had incidentally been diagnosed to have bilateral renal agenesis in her 2nd pregnancy.
Discussion: The importance of preconception counseling and management in patients at risk needs to be stressed upon, as organogenesis occurs early in pregnancy, so that congenital anomalies can be prevented.

218. An anatomical investigation into increased complications and mortality in inferior wall myocardial ischemia in left-dominant hearts

Gupta T, Saini A, Sahani D

Post Graduate Institute of Medical Education & Research, Chandigarh, India

Introduction: Left coronary dominance has been reported to be associated with increased mortality and severity in case of myocardial ischemia involving left coronary artery. Present cadaveric study was proposed to objectively study and document the termination and branching pattern of the right coronary artery in left coronary dominance heart, in relation to the blood supply to the posterior surface of the right ventricle.
Methods: Seventy five cadaveric hearts were studied. The coronary vessels were injected with colored cellulose acetate butyrate and dissected. The coronary dominance was determined. In left dominant hearts, branches and termination of the right coronary artery were studied on the inferior ventricular wall.
Results: Left coronary dominance was found in 13% of the specimens. The number of ventricular branches was found to be present as 0, 1, 2 and 4 in 2, 4, 2 and 2 of the cases respectively. The average length of the ventricular branch was 12.7mm with a range of 5mm-35mm. The atrial branch was found in 50% of hearts varying from 2-3mm in length. In 3 hearts the acute marginal artery did not give any posterior ventricular branch while 2, 3 and 5 posterior ventricular branches were seen in 4, 2 and 1 hearts respectively. The length of the posterior ventricular arteries was between 5mm-15mm.
Discussion: The RCA is an inconstant and unreliable source of posterior right ventricular perfusion in population with left coronary dominance hearts. This might be the reason of increased morbidity and mortality seen in the event of left coronary ischemia.

219. Variations in lumbar vessels –A case report

Gupta R, Chawla K, Gupta T, Aggarwal A, Harjeet K, Sahni D

Postgraduate Institute of Medical Education and Research, Chandigarh, India

Introduction: Lumbar arteries arise from abdominal aorta. Some abdominal and spinal surgeries can damage these arteries and that can lead to serious consequences.
Method: During the routine dissection, it was observed that in a 73 years old cadavers, fourth pair of lumbar vessels and median sacral artery were seen to be arising from the common stem of abdominal aorta.
Results: In this case, 4th pair of lumbar vessels arose at the level of L4-L5 disc. Knowing the anatomy of lumbar arteries is important to understand many clinical problems related to the lumbar region and use them in surgical procedures. When both lumbar arteries arise from a common stem, the chance of both arteries getting obstructed together by atheromatous lesions is higher and that could give rise to problems such as low-back pain. Interruption of blood flow in the lumbar arteries can be responsible for some cases of postoperative paraplegia in surgeries.
Discussion: Having knowledge of such anatomical variations in individuals will help surgeons who perform surgery in the retroperitoneal region and the diaphragmatic region.

220. Histology of lumbar pedicle

Kunal Chawla[a], Mahesh Sharma[b], Avinash Abhaya[b], Suman Kochhar[c], Daisy Sahni[a]

[a]*Post Graduate Institute of Medical Education and Research, Chandigarh, India*: [b]*Department of Anatomy, Government Medical College & Hospital, Chandigarh, India*: [c]*Department of Radiodiagnosis, Government Medical College & Hospital, Chandigarh, India*

Introduction: The unique anatomy of the pedicles provides an excellent implantation site for reconstructive spinal surgeries. Pedicle screw fixation is used to maintain and restore stability in such patients.
Method: Transverse paraffin sections of the 20 decalcified pedicles of the lumbar vertebra (L3) were stained with hematoxylin and eosin.
Result: The matrix of decalcified bone was strongly eosinophilic because of high content of collagen. The pedicles consisted of cancellous bone covered all around by cortical bone. The superolateral side of the section was identified by the presence of nick given before preparation. The bone of medial cortex was thicker than lateral cortex. The cortical bone of the inferior side of the pedicle was thicker in comparison to superior and was thickest of all margins. Osteons were seen which had concentric alignment of lamellae and lacunae around it and Haversian canal was identified,. Lamellar bone layer was absent at the surface of pedicle where it came in contact with periosteum. The core of pedicle was filled up with irregularly placed bony trabaculae separated by labyrinth and marrow spaces containing a large number of adipocytes and haemopoetic cords separated by sinusoids. Trabaculae in pedicle were thin and composed of irregular lamellae of bone with lacunae containing osteocytes. They were isotropic and plate like.

221. Bilateral triple renal artery

Kunal Chawla[a], Richa Gupta[a], Tulika Gupta[a], Anjali Agarwal[a], Daisy Sahni[a], G.S.Kalyan[b]

[a]*Post Graduate Institute of Medical Education and Research, Chandigarh, India*: [b]*Government Medical College, Patiala, Punjab, India*

Introduction: Knowledge of the variations of the renal artery has grown in importance with increasing numbers of renal transplants, vascular reconstructions and various surgical and radio logic techniques being performed in recent years.

Method: We report the presence of bilateral triple renal arteries, discovered on routine dissection of a 83 year old male cadaver. On both sides additional renal arteries originated from the abdominal aorta.
Result: On the right side all the three renal arteries arose from the aorta. 1st renal artery gave branch to superior pole of kidney before dividing into 3 branches which were supplying anterior surface of the kidney. 2nd renal artery after emerging divided into two branches supplying posterior surface of kidney. 3rd renal artery was observed to be supplying lower end of hilum of the right kidney. On the left side all the three renal arteries arose from the abdominal aorta. 1st renal artery bifurcated into 2 branches to supply anterior part of kidney. It was supplying the posterior part of hilum of left kidney. Third branch supplied lower part of hilum of left kidney. Left kidney had cyst located on the anterior surface of kidney near the hilum. The knowledge of this vascular anomaly might prove critical for surgeons, radiologist and interventionists.

222. Congenital Diaphragmatic Hernia in adults —Incidence, embryological basis and it's clinical correlation

Budi Savita R., Math Shailaja C., Ganga Gourishankar, Angadi A.V.

Department of Anatomy, S. S. Institute of Medical Sciences and Research Centre Davanagere, Karnataka, India

Introduction: Congenital Diaphragmatic Hernia(CDH) is seen in 1 in 2500 to 4000 live births and accounts for about 8 % of all major congenital anomalies. It may occur as a non syndromic or isolated defect. Herniation through the Foramen of Morgagni accounts for approximately 2% of all CDH cases. It is rare in adults and if present, they present in later life.

The aim of our study was to analyze incidence of diaphragmatic hernia, its different types, correlate with embryological basis and it's applied aspects in medical and surgical interventions.
Method: During our routine dissection in the department of Anatomy, S.S. Institute of Medical Sciences Davanagere, Karnataka, out of 17 cadavers, one cadaver aged about 64 yrs old male presented with CDH which was though the foramen of morgagni. The hernial sac present in the thoracic cavity in anterior mediastinum, contained large intestine, along with part of stomach and greater omentum.
Discussion: CDH incidence is seen in 1 in 2500 to 4000 cases, out of which Bockdalek's hernia accounts for more than 95% of CDH cases where as Morgagni's hernia is seen in only 2% of cases.

223. Incidence of variation in the branching pattern and distribution of facial nerve and it's clinical correlation

Budi Savita R., Math Shailaja C., Ganga Gourishankar, Angadi A.V.

Department of Anatomy, S. S. Institute of Medical Sciences and Research Centre Davanagere, Karnataka, India

Introduction: To analyze different variations, correlate with embryological basis and applied aspects in medicine and surgical interventions.
Methods: During our routine dissection in Department of Anatomy, S.S.I.M.S & R.C, Davanagere, variation was found in one out of 17 cadavers.
Results: The variation found was:-

The facial nerve was dividing into 7 terminal branches after coming out of parotid gland. Multiple connections were found between the branches of facial nerve. Spiderweb like pattern was observed in the division pattern of facial nerve.
Discussion: Superficial or total parotidectomy with preservation of facial nerve has been used since many years in the treatment of parotid gland tumours. The operating surgeon should be familiar with such variations to prevent post operative facial nerve paralysis. Knowledge of these variations is also important from surgical point of view during decompressive fasciotomies, debridements and skull base surgeries.

224. Study of dorsal wall of sacrum

Rashmi B.N[a], Jayanthi K S[b]

[a]*Mysore Medical College and Research Institute, Mysore, Karnataka, India*: [b]*Vydehi Medical college and research Institute, Bangalore, Karnataka, India*

Introduction: To study the anatomical variations of dorsal wall of sacrum in order to clarify the structural variations of sacral hiatus and surrounding structures for improving the reliability of caudal epidural block.
Method: The present study was done on 50 male and 50 female dry human sacra after calculating the sacral indices and sexing of sacra. The dorsal wall of sacrum was studied with respect to level of sacral hiatus, deficiencies and apertures.
Results: Less extensive apertures in the bony dorsal wall of sacral canal were observed in 29% of sacra with preponderance to male group (19%in male sacra and 10% in female sacra). Other variations included low lying lamina of the first sacral vertebra due to failure of fusion of the first lamina (7%) and unilateral and bilateral midline deficiencies (22%) between the extremities of dorsal wall. The collective percentage of these deformities was as high as 25.4%. These apertures in the dorsal wall of sacral canal though closed by ligaments, may provide an escape for the tip of the needle leading to subcutaneous infusion.
Discussion: The dorsal wall of sacrum has anatomical variations. Understanding these variations may improve the reliability of caudal epidural anesthesia.

225. Comparative study of morphology of knee joint of tetrapod —Class —Reptilia —Genus —Calotes —Species —Versicolar (Garden Lizard) to mammals (Human Being)

Roul.B.N., Nayak.M, Tidke.S.N

Hi-Tech Medical College & Hospital, Rourkela,Odisha, India

Introduction: Advancement in knowledge of the comparative Anatomy of joints has generally lagged behind than that of other structural systems. The knee joint has been chosen for special study as representing the largest and functionally important articular unit, provided with an extensive synovial cavity and a variety of both intra and extra articular structure.
Methods : Ten Garden lizards collected from the central animal house and Ten knee joints of human being from dissection hall department of Anatomy , Hi- Tech Medical college, Rourkela, Orissa, India .All the animals were sacrificed, with prior clearance from ethical committee, Hi-Tech medical college after giving Euthanasia

dose of phenobarbitone and preserved in formalin. The morphological study of knee joint of garden lizard was carried out under the following headings Articular surface, Muscles, ligaments.

Results: The popliteus muscle is absent In Garden lizards. Biceps femoris has got single head of origin. The femoro fibula disc in garden lizard is the lateral expansion of the lateral meniscus. The gastrocnemius muscle acts as flexors of knee, planter flexor of ankle, intertarsal joint. This probably helps in propelling movements which requires simultaneous flexion at the knee joint and plantar flexion at the ankle joint.

Discussion: In reptiles such as lizards the tibia and fibula are not attached to each other by any strong interosseous membrane. . In the lizards the ankle joint there is no appreciable rotation, so that when the foot rotated relatively to the femur the tibia and fibula rotate with it.

226. Persistence of oxidative DNA damage in sperm and its consequences

Rima Dada [a], Swetasmita Mishra[a], Neena Malhotra[b], Deepika Deka[b], Vastala Dhadwal[b] Rajeev Kumar[c]

[a]*Laboratory for Molecular Reproduction and Genetics, Department of Anatomy, All India Institute of Medical Sciences, New Delhi, India*: [b]*Department of Obstetrics & Gynaecology, All India Institute of Medical Sciences, New Delhi, India*: [c]*Department of Urology, All India Institute of Medical Sciences, New Delhi, India*

Introduction: Maintaining genomic integrity in sperm is vital for birth of healthy offspring. Sperm DNA damage is associated with poor assisted reproductive technique (ART) outcome, birth of offspring with congenital malformations, recurrent spontaneous abortions after assisted and spontaneous conception and even childhood cancers. We hypothesized that, since certain cases have high DNA fragmentation index and these cases may harbour defects or deficiencies in DNA repair mechanisms (mutation in DNA repair genes, promoters leads to aberrant expression). PARP1 is a DNA repair enzyme recruited when there are double strand breaks in DNA. PARP-1 also plays a role in telomere maintenance. It is a key enzyme for DNA repair. Once breaks are detected in the DNA, following recruitment of PARP other proteins are recruited for repair. It is established that, PARP-1-/- mouse embryonic fibroblasts (MEFs) exhibited heightened genomic instability and telomere dysfunction following exposure to DNA damaging agents. Therefore this study was planned with aim to analyse level of PARP.

Methods: This study was planned to analyze the expression levels of PARP1 in the sperm samples from both infertile and control (fertile) men and correlate with sperm DNA damage and the Telomerase activity per cell. The study included both infertile men and age matched controls. The expression level of PARP1 was quantified by qPCR. For all samples sperm chromatin structure assay (SCSA) was performed and DNA fragmentation index (DFI) calculated.

Results: By SCSA DNA Fragmentation Index (DFI) was found to be significantly higher ($p=0.0015$) in sperm samples from infertile men (29.02 ± 5.6) as compared to controls (23.37 ± 3.6).Reactive oxygen species levels in patients was 295.12 and in controls was 20.2 RLU/sec/million sperm. Relative quantification showed that the level of expression of PARP1 were significantly ($P<0.0001$) lower and percentage DFI significantly ($P=0.0015$) higher in sperm samples from infertile men compared to controls. There was a negative correlation between PARP1 levels and sperm DNA damage.

Discussion: Lower levels of expression of DNA repair enzymes explain for the persistence of DNA damage in sperm. Our study confirmed lower levels of PARP1 expression and high DFI in the sperm of infertile men compared to controls. Study is ongoing with more cases and controls for analysing telomerase activity and expression pattern in DNA damage repair genes.

227. Variant palmaris longus muscle –A case report

Balachandra N; Padmalatha K; Prakash B S; Vasudha K; Ramesh B R

Dr B R Ambedkar Medical College, K G Halli, Bangalore, Karnataka, India

Introduction: It is a slender, fusiform muscle, lying on the medial side of the flexor carpi radialis. It arises from the medial epicondyle of the humerus by the common flexor tendon, from the intramuscular septa between it and the adjacent muscles, and from the antebrachial fascia. It ends in a slender, flattened tendon, which passes over the upper part of the flexor retinaculum, and is inserted into the central part of the flexor retinaculum and lower part of the palmar aponeurosis, frequently sending a tendinous slip to the short muscles of the thumb. The palmaris longus tendon is responsible for exposing the claws in other mammals. The palmaris longus is a variable muscle,(1) absent in about 16 per cent of Caucasians, and less frequently absent in other populations. (2) It may be tendinous above and muscular below; or it may be muscular in the centre with a tendon above and below; or it may present two muscular bundles with a central tendon; or finally it may consist solely of a tendinous band. (3)The muscle may be double. (4)Slips of origin from the coronoid process or from the radius have been seen.

Method: Partial or complete insertion into the fascia of the forearm, into the tendon of the Flexor carpi ulnaris and pisiform bone, into the scaphoid, and into the muscles of the little finger have been observed.

Results: Here we see the muscle which is muscular in the centre with a tendon above and below.

228. Three roots of the median nerve –A case report

Balachandra N; B S Prakash; Vasudha K; B R Ramesh

Dr B R Ambedkar Medical College, K G Halli, Bangalore, Karnataka, India

Introduction: The Median Nerve is the nerve of the forearm & the hand. It supplies most of the flexor muscles of the forearm through it's interosseous branch & thenar muscles of the hand & the radial two lumbricals & cutaneous branches to the palmar aspect of the thumb, index & middle fingers & the radial half of the ring finger. It is formed by the union of the terminal branches of the lateral & medial cords of the Brachial plexus. Sometimes an additional root is seen forming the median nerve. It could be from the roots, trunks or cords and also from the branches of the various cords. Here we observed the third root arising from the Musculocutaneous nerve.

Method: During routine dissection of the upper limb of an adult female cadaver by the undergraduate students of our college, the median nerve was seen to be arising by three roots on the Right side.

Results: The third root was arising from the Musculocutaneous nerve while the medial & lateral roots were arising from the medial & lateral cords of the brachial plexus respectively. On the left side the origin of the median nerve was normal, from medial &

lateral roots, from the medial & lateral cords respectively. Further dissection towards the roots of the brachial plexus did not reveal any variation except a communication between the medial and lateral pectoral nerves.

229. Sacralization: The structural complications and body biomechanism

Ajitpal Singh[a], Jeewanjot Sekhon[a], **Navjot Kaur**[b]

[a]*Desh Bhagat Dental College & Hospital, Sri Muktsar Sahib, Punjab, India*: [b]*Adesh Institution of Medical Sciences and Research, Bathinda, Punjab, India*

Introduction: The present study is an effort to analyse the structural complications of sacralization and its related impact on the body biomechanics.
Methods: The present study included an examination of 20 adult sacra for the cases of sacralization. Score system formulated by Khairnar and Rajale (2013) is used for morphological analysis of sacralization. Six structures assessed in the score system are left & right inferior articular facets, left & right transverse processes and the left and right sides of the vertebral body. Classification proposed by Castellvi et al. 1984 for the degree of transition based on form and orientation of the transverse processes of LSTV was used in the study.
Results: In present study 2 males (20%) and 01 female (1%) showed the cases of sacralization. After complete morphological and score system analysis, it has been observed that in all the three specimens of sacra bilateral sacralization has been found. According to classification of LSTV (Castellvi et al.1984) present specimen of all sacra shows TYPE III LSTV which shows enlarged transverse process, with bilateral (b) complete fusion with adjacent sacral ala.
Discussion: It is concluded from the study that sacralization brings very remarkable structural changes in the anatomy of skeleton of pelvis which can be the reason of various serious complications of low back pain, complicated delivery or labor, vertebral deterioration or disc compressions which all together shows its great impact on the body mechanics.

230. Variation in sacral hiatus anatomy —Important reason of failure of caudal epidurals

Sunanda Raina, **Simriti**

Government Medical College, Jammu, Jammu and Kashmir, India

Introduction: To ascertain the anatomical reasons for failure of caudal epidurals.
Methods: Twenty sacrums were covered with clay wrapped in a cloth and five clinicians regularly administering caudal analgesia were asked to negotiate the sacral hiatus without fluoroscopy with a 20 gauze spinal needle. Needle placement was checked by lifting the clay.
Results: Out of the 100 chances it was found that in 30 % of cases the needle has not negotiated hiatus. Out of these 30 instances in 10 instances the needle was short of hiatus and in twenty the needle has gone dorsally. The failure was highest in the sacra having longer hiatus.
Discussion: Caudal epidurals is a very frequently offered procedure and its results are not predictive . Variation in sacral hiatus anatomy is an important cause for there failure and its recommended to use fluoroscopy for the procedure.

231. Bilaterally elongated styloid process —A case report

Shree B[a], Sharma RK[b], Singla RK[b]

[a]*Civil Hospital, Faridkot, Punjab, India*: [b]*Department of Anatomy, Government Medical College, Amritsar, Punjab, India*

Introduction: The styloid process is a long cylindrical process arising from the temporal bone. It is usually 20-30 mm long. If it is more than 30 mm long, it is said to be elongated styloid process. It may be due to ossification of stylohyoid ligament and may be unilateral or bilateral.
Method: The material for the present study comprised of a skull prepared in the Department of Anatomy, Government Medical College, Amritsar after routine undergraduate dissection.
Result: The styloid processes in the said skull were elongated on both the sides, the length being 76.01 mm on right and 71.14 mm on left side. These were fused with the hyoid bone at site of lesser cornua.
Discussion: Knowledge of such variation may be of interest not only for anatomist but also for physicians and surgeons. An elongated styloid process may be responsible for different sets of clinical features like cervico facial pain or feeling of foreign body in pharynx. These may be attributed to compression of some neural or vascular structure by it.