

Materials and Methods: Total 450 (200 male and 250 female) students were identified as subjects for the study after taking consent.

Results: Stature in males varied from 138 cm to 184 cm with mean value of 158.71 cm and standard deviation (SD) of 5.988 cm. Median of stature was 161.14 cm. Stature in females varied from 132 cm to 166 cm with mean value of 146.82 cm and standard deviation (SD) of 5.604 cm; median of stature stood at 149.08 cm. This difference in mean stature between males and females was statistically highly significant ($p < 0.001$).

Conclusion: Estimation of stature among the population can be carried out using foot length and there is positive correlation between stature and foot length in a particular population.

14. Study of variations in the base of the skull

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Aims and Objectives: Base of the skull is highly irregular and the variations are very likely to be observed very frequently because of the highly complicated way in which the development occurs. The objective of the study is to report the different variations and the frequency in which the variations are observed in south Indian population.

Methods: The present study was done in the Department of Anatomy, DM-WIMS, Meppadi, Kerala using 100 skulls.

Results: The variations observed were elongated styloid process, tubercle on the anterior margin of the foramen magnum, tubercle on the posterior margin of the foramen magnum, bilateral facets on the posterior margin of the foramen magnum, and occipitalization of the first cervical vertebrae.

Conclusion: Variations are common around the foramen magnum; so it complicates the picture because many important structures are passing to and fro from the foramen magnum and presence of such variations may lead in complications. So to the clinicians, it is important to be aware of such malformations.

15. Carotid bifurcation level and morphometry of anterior branches of external carotid artery

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Objective: The common carotid artery bifurcates into external and internal carotid arteries at superior border of thyroid cartilage. The superior thyroid, lingual, and facial arteries are anterior branches of external carotid artery.

Materials and Methods: Common carotid artery, external carotid artery, and the anterior branches of external carotid artery were dissected in 30 adult formalin-fixed sagittal head and neck sections in the Department of Anatomy, KMC,

Manipal. The parameters studied were level of bifurcation of common carotid artery, relation of external and internal carotid arteries, and origin and distance of anterior branches of external carotid from bifurcation; any other variations were also noted.

Results: In 53% of cases the common carotid artery bifurcated at the level of superior border of thyroid cartilage, in 16% cases below the level of superior border of thyroid cartilage, in 26% cases at the level of inferior cornu of hyoid bone, and in 3% cases at the mandibular angle.

Conclusion: A clear anatomical knowledge of the carotid arteries and their branches is essential for any surgical interventions to minimize unwanted bleeding and also during radiological investigations of the carotid arterial system.

16. A comet assay study on DNA damage in children with non-syndromic congenital malformations

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Aims and Objectives: Congenital malformations or birth defects are often classified as major and minor anomalies. About 40–60% of birth defects are due to unknown etiology. Increased genomic instability in the form of chromosomal breaks, deletions, and translocations has been observed in children with congenital malformations of various types. The present study is undertaken to assess the DNA damage in these cases.

Materials and Methods: Twenty cases of different types of congenital malformations in children below 5 years of age were considered for the current study. Equal numbers of normal healthy children without any congenital malformation matched with the cases in age and sex were also taken as a control to investigate the extent of DNA damage in both groups. The comet assay is very sensitive and useful for detection of DNA damage.

Results: The mean tail length of the cases was found to be 22.66 μm and that of the control group was 1.992 μm . The values were analyzed for statistical significance and were found out to be extremely significant with the P value < 0.0001 .

Conclusion: There was a significant increase in comet tail length observed in different types of congenital malformations when compared to matched controls. The significant DNA damage among cases may be related to the types of malformations and also their clinical condition.

17. A Morphometric Study Of Variations In The Innervation Of Pronator Teres With Its Clinical Implications

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Introduction: The median nerve innervates the muscles of the forearm and hand. Variations in the number of branches

to pronator teres are frequently seen. The knowledge of its innervation to pronator teres is of utmost importance in understanding the several presentation of pronator teres syndrome, in investigating the median nerve lesions, to design satisfactory treatment and to avoid iatrogenic injuries during operations. So, the aim of this study is to evaluate possible variations in the innervation of pronator teres muscle.

Material & Method: The study was carried out in 24 cadaveric upper limbs. Dissection of the cubital fossa was done and branches of the median nerve to the pronator teres were identified. The branches were measured in reference to the interepicondylar line, (determined by the medial and lateral epicondyles of the humerus) by a divider and a ruler.

Results: We found there were 1, 2, 3 and 4 branches in 5 (20.8%), 12 (50%), 5 (20.8%) and 2 (8.3%) specimens respectively out of 24 upper limbs. In one specimen we also found that the musculocutaneous nerve was supplying the pronator teres muscle which was arising 10.9 cm above the intercondylar line.

Conclusion: This study will increase the knowledge of the anatomical distribution of nerves to pronator teres and therefore help in the treatment of pronator teres syndrome and in various surgical procedures of cubital fossa and upper limb surgeries.

18. Detailed morphological study of lower end of fibula and its clinical significance

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Introduction: Biomechanical studies have demonstrated the role of fibula in weight bearing and in normal function of the knee and ankle. Fibula has been shown to bear one-sixth of axial loading on the leg, with a key role in dissipating torsional stresses produced by ankle motion. Transmission of load to fibula from its lower to upper end is crucial to all sports activities involving movement at the ankle and the knee. Blood supply of fibula is important for planning free tissue transfer. Peroneal artery provides nutrient vessel to the fibula and at the distal end there is perimalleolar arterial ring which is connected with the three arteries of leg.

Material and Method: Forty-six (23 right and 23 left) dry fibulae were obtained from the Department of Anatomy for this study.

Results: There are three important areas seen on the medial aspect of lower one-fourth of fibula:

- (a) Rough triangular area which gives attachment to interosseous tibiofibular ligament,
- (b) triangular articular facet, and
- (c) malleolar fossa.

The rough triangular area extended to higher level on the right fibulae compared to left. The articular are triangular in 71.7%, diamond shaped in 6.5%, circular in 4.3%, and pear shaped in 19.5%. The articular surface was flat in majority of cases (65%); it was concavo-convex in 26%. Height of the facet was 19 mm and with width at its base being 17.5 mm. Malleolar fossa was

deep in 73% cases and shallow in the remaining. The fossa showed an average of 10 vascular foramina. The significance of these findings shall be presented and discussed.

19. Anatomical variations of ureter: A cadaveric dissection-based study

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Objective: Ureter is a major part of human urinary excretory system. Each measures about 25–30 cm in length. It is continuing superiorly with the funnel-shaped renal pelvis. The diameter is 3 mm, which is slightly less at the junction with the renal pelvis. Inferiorly, each ureter opens into the base of the urinary bladder. Anatomical variations such as incomplete duplication and megaureter are documented by Gray's Anatomy (40th edition) to be 1/800 and 1/125, respectively. So in view of these facts, the study has been carried out to know the incidence of major ureteric variations in this part of the country.

Material and Method: About thirty human kidneys of either sex were dissected to study the major variations of ureter.

Result: A number of anatomical variations were observed. Megaureter (6.6%) and incomplete duplication (3.76%) were most common variations in our study. The details of the study with statistical analysis will be discussed during the time of oral presentation.

Conclusion: A thorough knowledge on anatomical variations of urinary system is of great importance not only for urological conditions but also for the surgeons as it would ease the management and surgical interventions and will reduce possible unnecessary complications.

20. Variation in the branching pattern of popliteal artery

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Objective: To study the variation in the branching pattern of popliteal artery. Preoperative diagnosis of variations in the branching pattern of the popliteal artery may help to avoid excessive unwanted haemorrhage during operative procedure. Also knowledge of these variations is important for the success of the arthroscopic surgeries. The popliteal artery is a continuation of femoral artery and crosses the popliteal fossa. It descends laterally from the opening in adductor magnus to the femoral intercondylar fossa, inclining obliquely to the distal border of popliteus where it divides into the anterior and posterior tibial arteries. This division usually occurs at the proximal ends of the asymmetrical crural interosseous space between the tibial metaphysis and the fibular metaphysis. The artery may show a high bifurcation and divides into terminal