

**Method:** Gross morphological features of cervical vertebrae were noted and anatomical variations recorded. Appropriate photographs were taken. Consequent radiological study was also performed for osteological variations.

**Results:** During osteological study of morphological features of one hundred cervical vertebrae for skeletal abnormalities, fusion of axis vertebra with third cervical vertebra was observed. Radiological study of the same was conducted. Unusual fusion of bodies of axis and third cervical vertebra was recorded. Laminae of both vertebrae were fused. Spinous processes of axis and third cervical vertebra were fused but the latter showed incomplete fusion. Radiological details of this anomalous fusion of both vertebrae were also studied.

**Conclusion:** Abnormalities of cranio-cervical region are of great clinical and embryological importance to the anatomists, anesthetists, orthopedicians and neurosurgeons. Such abnormalities may be congenital and acquired. The resultant sequelae of neck pain and other sensory deficits make such studies of utmost importance especially during interventional procedures like endotracheal intubation, cervical or lumbar puncture.

## 11. Histomorphological study of testes in three different mammals

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**Aims and Objective:**

- To study the interspecies variations in three different mammals with following objectives.
- To study the morphological characteristic of testes in human, pig and goat.
- To study the diameter of the seminiferous tubules in these adult mammals.

**Materials and Methods:** 5 pairs of human testes were collected from cadavers of unclaimed bodies from the Department of Anatomy and Department of Forensic Science, Gauhati Medical College, Guwahati, preserved after fulfilling all medicolegal criteria. 5 pairs of goat testes and 5 pairs of pig testes were collected from the local slaughter's house immediately after death of the animals and preserved.

**Results and Observations:** Average length, breadth, thickness and weight of right testes in human are 4.54 cm, 2.54 cm, 2.91 cm and 12.32 g, respectively and left testes in human are 4.48 cm, 2.52 cm, 2.82 cm and 12.25 g, respectively. Average length, breadth, thickness and weight of right testes in pig are 6.29 cm, 5.09 cm, 4.14 cm and 75.20 g, respectively and left testes in pig are 6.24 cm, 5.06 cm, 4.09 cm and 75.12 g, respectively. Average length, breadth, thickness and weight of right testes in goat are 4.68 cm, 3.46 cm, 3.09 cm and 54.88 g, respectively and left testes in goat are 4.64 cm, 3.44 cm, 3.03 cm and 54.82 g, respectively. Average diameter of seminiferous tubules was measured in both right and left testes.

**Conclusion:** In all three groups, the testes on right side have high value than the left side.

## 12. The study of palatal dimensions in relation to palatal index in adult human skulls of Eastern Indian population

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**Aims and Objectives:** A scientific knowledge of palatal dimensions in facial skeleton is of paramount importance in the fields of Orthodontics, Paedodontics, Reconstructive Maxillofacial surgery and Forensic Odontology. The purpose of our study is to stabilize the osteometric data regarding palatal indices in Eastern Indian population and to find out any sexual dimorphism in hard palate.

**Method:** The present study was done on 50 dry, sexed, human skulls (devoid of any damage or deformity), from Eastern Indian population. The specimens were collected from Dept. of Anatomy and Dept. of Forensic and State Medicine of all Medical Colleges of Kolkata, West Bengal. Their palatal indices were measured with a pair of vernier callipers to the nearest 0.1 mm.

**Results:** The osteometric data collected from the study were analyzed on the basis of scientific compilations. The results obtained were correlated with those of previous studies. Our observation reveals that there is quantifiable dimensional reduction in all parameters of measurements in female palate. Observation and discussion will be presented in detail during oral presentation.

**Conclusion:** The anatomical information gathered from the present study will be immensely useful to:

- Dental surgeons during maxillofacial surgery.
- Plastic surgeons during correction of craniofacial deformities.
- Anaesthetists in achieving complete nerve blocks
- Anthropological studies for sex, race and ethnic demonstrations.

## 13. A study of relation of stature with foot length in first year medical students of south Indian origin

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**Aim and Objectives:** Stature is the height of the person in the upright posture. It is an important measure of physical identity. Establishing the identity of an individual from mutilated, decomposed and amputated body fragments has become an important necessity in recent times due to natural disasters like earthquakes, tsunamis, cyclones, floods and man-made disasters like terror attacks, bomb blasts, mass accidents, wars, plane crashes, etc. The aim of the study was to know the relation between foot length of the person with their height.

**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.

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#### 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.

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#### 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.

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#### 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  $\mu\text{m}$  and that of the control group was 1.992  $\mu\text{m}$ . 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.

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#### 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