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Morphological variations of musculocutaneous and median nerves in armStuti Tandon^{1,*}, P. Singh¹, R.S. Rajpoot², Rani Archana¹, A.K. Srivastava¹¹ King George's Medical University, Lucknow, India² RIMSR, Saifai, Etawah, Uttar Pradesh, India**Aims and objectives:** The study was aimed to observe variations in the branching pattern of musculocutaneous and median nerves.**Material and methods:** The present study was performed by routine dissections on 38 cadavers at King George's Medical University UP, Lucknow.**Results:** Out of 38 cases studied, in 6 cases were observed in which variation of musculocutaneous and median nerves were seen. In one case, musculocutaneous nerve on left side arose as a slender branch from the lateral cord, supplied and pierced coracobrachialis muscle and ended. In the same case just after its formation, median nerve gave a branch which descended between biceps and brachialis, sending branches to both and emerged from beneath the lateral border of tendon of biceps as the lateral cutaneous nerve of forearm. In three limbs there were longer roots of the median nerve which united at the level of mid arm and were intercommunicating. In another left upper limb, apart from long roots, after formation of median nerve a branch was given off which descended downwards and laterally and communicated with musculocutaneous nerve at the level of elbow joint. In another limb there was a communication between the median nerve and the musculocutaneous nerve at the level of mid arm.**Conclusion:** Such variations are important clinically for surgeons performing surgeries on upper limb.**Conflicts of interest**

The authors have none to declare.

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Fetal foot and hand lengths: Their relationship with crown-rump (CR) length and gestational age

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Aims and objectives: To study the relationship between fetal crown rump length and fetal hand and foot length, thereby determining the accuracy in estimating gestational age by a cross sectional study.**Material and methods:** A total of 100 formalin fixed fetuses of Manipuri origin, obtained from the Department of Obstetrics and Gynaecology, Regional Institute of Medical Sciences, Imphal were studied in the Department of Anatomy from February to July 2015. The parameters measured in fetuses were: (i) CR length, (ii) foot length, and (iii) hand length. The data was analysed using SPSS software by regression analysis. Graphs were also plotted to determine pattern of growth and their correlation with crown rump length, if any.**Results:** Out of 100 fetuses (43 female and 57 male) the mean foot length and hand length progressively increased with increase in crown rump length. Measurements were not significantly different on right or left side or among male and female fetuses.A statistically significant linear relationship was found between foot length and crown rump length ($r = 0.980$, $p < 0.0001$) and hand length and crown rump length of the fetus ($r = 0.986$, $p < 0.0001$).**Conclusion:** In the present study fetal hand and foot lengths have been found to highly correlate with crown rump length and thereby gestational age. Therefore these parameters could be utilized to estimate gestational age.**Conflicts of interest**

The authors have none to declare.

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A study of highest nuchal line in north Indian crania

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Aims and objectives: Studies of non-metric cranial variants have been a field of considerable interest to research workers especially because of their racial and regional importance.**Material and methods:** 18 north Indian skulls of UP were studied for the highest nuchal line a cranial variant in the present study.**Results:** Highest nuchal line variant was seen in 50% cases.**Conclusion:** Findings are discussed and compared with other global studies and are found to be of considerable regional and racial significance.**Conflicts of interest**

The author has none to declare.

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Morphometrical study of thyroid cartilage

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Aims and objectives: To find out dimension of various parameters of thyroid cartilage, variation, differences among all the data and to compare data between males and females.**Material and methods:** Thirty samples of adult thyroid cartilage (16 males and 14 females) of known sex were taken from embalmed cadavers. Morphometric measurements were taken using a digital vernier caliper and optical goniometer to see normal variation, sex differences and bilateral asymmetry. Observations were analysed statistically.**Results:** Parameters measured in thyroid cartilage were height (average in males 31.19 mm and in females 24.17 mm), width (average in males 39.73 mm and in females 30.00 mm), posterior border length (average in males 45.31 mm and in females 35.40 mm) of thyroid lamina and thyroid angle (average in males 85.75 and in females 98.86), show significant differences in males and females. All the parameters of thyroid cartilage except thyroid angle were higher in males than females. Bilateral asymmetry in the size of thyroid lamina was seen in majority of specimens. However, in 3 cases (10%) thyroid prominence was not in median plane, deviated towards left side. In one case asymmetry was also associated with asymmetry in direction of superior cornu.

Conclusion: As thyroid cartilage is largest among all laryngeal cartilages, its detailed study in the form of morphometric parameters of thyroid cartilage is useful for anatomists, plastic and ENT surgeons, and radiologists to perform advanced surgical procedures, endoscopic procedure and surgeries, planning of laryngeal framework surgery, facial feminization surgery and for analysis of laryngeal CT-MRI scans.

Conflicts of interest

The authors have none to declare.

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Study of variations in origin and course of musculocutaneous nerve



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Aims and objectives: Variations in the origin, course, branching pattern, termination and connections of the musculocutaneous nerve are not uncommon. The musculocutaneous nerve arises from the lateral cord of brachial plexus, opposite the lower border of the pectoralis minor, pierces the coracobrachialis, descends laterally between the biceps and brachialis to the lateral side of arm and just below the elbow it pierces deep fascia lateral to the tendon of biceps brachii to continue as lateral cutaneous nerve of forearm. The aim was to study the variations in the origin and course of the musculocutaneous nerve.

Material and methods: 60 upper limbs of 30 cadavers (25 males and 5 females) ranging from age group of 50–80 years were studied in the department of anatomy, Dr DY Patil Medical College & Research Centre during routine dissection. All limbs were meticulously dissected and variations were noted. Photographs were taken for documentation.

Results: Out of 60 upper limbs variations were noted in the course and origin of musculocutaneous nerve in 6 cases. The nerve did not pierce the coracobrachialis muscle in three, it communicated with the median nerve in one, and was absent in one upper limb. There were no associated vascular variations.

Conclusion: Knowledge about the variations is important for surgeons, clinicians and anatomists. Awareness of possible variations is essential to avoid unexpected complications during surgical procedures such as brachial plexus blocks, arthroscopy of shoulder joint and repair of fractures of humerus.

Conflicts of interest

The authors have none to declare.

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Prevalence of various types of talar articular facets on calcanei of UP region and its clinical correlation



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Aims and objectives: The calcaneus is the largest tarsal bone. On the superior surface of calcaneum normally three articular facets have been described. However, these show wide variations. The main objective of this study was to calculate the prevalence of these variations on superior surface of calcanei.

Material and methods: This study was conducted on 200 adult calcanei of unknown sex available in the osteology section of anatomy department of KGMU.

Results: Classically described 3 talar articular facets were observed in only 22.5% calcanei. In 75% calcanei anterior and middle facets were continuous with each other whereas in 2% calcanei anterior facet was absent and in 0.5% all three facets were continuous with each other.

Conclusion: In the present study, the prevalence of type 2 calcanei was highest (75%). This type of facet predispose the individual for subtalar joint instability and can be a predisposing factor for developing arthritic changes.

Conflicts of interest

The authors have none to declare.

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Anatomical study of radial artery and its variations correlated with clinical implications



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Aims and objectives: To describe the radial artery and its variations with reference to origin, course, branching pattern, mode of termination and correlate them with their probable clinical implications.

Material and methods: This study was done on 30 upper limbs (15 cadavers). Axillary region was dissected and radial artery exposed throughout its extent to note any variation in length, lumen circumferences and thickness.

Results: The mean distance of the normal origin of the radial artery as one of two terminal branches of the brachial artery was 38.7 ± 9.5 mm below the intercondylar line, and variant origin of the radial artery was found in three limbs. The mean of radial artery length was 216.4 ± 2.2 mm and that of its lumen circumference was 3.3 ± 0.4 mm at 1 cm distal to its origin and 3.1 ± 0.73 mm at 2 cm proximal to the styloid process of the radius. The radial artery showed different branching patterns and modes of termination which will be presented.

Conclusion: Knowledge of the variations of the radial artery is important as it is used in various clinical procedures like cardiovascular interventional and reconstructive surgeries. Moreover, superficial course of this artery makes it vulnerable to accidental injuries as it may be mistaken as a vein and intravenous injections into it can be disastrous.