Conflicts of interest

The authors have none to declare.

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Morphological variations in the shape of the mandibular coronoid process and its clinical implications

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Aims and objectives: To observe incidence of various shapes of the coronoid process of mandible and its correlation with age and sex.

Material and methods: The morphological observation of shapes of coronoid process of both sides was carried out on total 99 mandible collected from M.P. Shah Government Medical College, Jamnagar, Gujarat. The incidence was observed in both the sex and in different age groups.

Results: The shape of the coronoid processes was classified into hook, triangular and round. The incidence of hook shape was 30.81%, triangular shape 43.94% and round shape 25.25%. The incidence of triangular shape was highest in both sexes. The incidence of hook shape was higher in males (33.86%) than in females (25%) whereas the incidence of round shaped coronoid process was more in females (32.35%) than in males (21.54%). The incidence of round shape (66.67%) was higher in young age while triangular shape (48.57%) was more in adult and hook shape (40.74%) was more in old age. The results were compared with those of earlier workers.

Conclusion: The triangular coronoid process was most common present in both males and females. As age advances the shape of the coronoid process gradually changes from round to triangular, and/or to hook shape. The present study will be helpful for maxillofacial surgeons, and also in anthropological and forensic studies.

Conflicts of interest

The authors have none to declare.

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Anatomical study of variations in the branching pattern of aortic arch

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Aims and objectives: The aim of the present work is to study the branching pattern of arch of aorta, which will provide an anatomical basis for surgeons in performing safe vascular surgery involving the arch of aorta. Knowledge of these variations in branching pattern of arch of aorta is highly vital for vascular surgeons.

Material and methods: The present work consists of 50 aortic arches (45 male and 5 female) carefully dissected from embalmed human cadavers available in the department of anatomy, NRI Medical College, Chinakakani and nearby medical colleges from 2012 to 2015.

Results: In the present study, the most common branching pattern is three major branches, the brachiocephalic trunk, left common carotid artery and left subclavian artery arising independently from the arch of aorta. It is observed in 43 (86%) out of 50 specimens. Other variations in the branching pattern were observed in 7 (14%) out of 50 specimens. The clinical significance and embryological basis of these variations are discussed.

Conclusion: Keeping abreast with the latest tendencies of the variations of the aortic arch is utmost essential for clinicians and CT surgeons, as the prior identification of these vascular anomalies through diagnostic interventions is crucial, in order to avoid complications during heart and vascular surgeries.

Conflicts of interest

The authors have none to declare.

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Anatomical basis of femoral component sizing of total knee arthroplasty

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Aims and objectives: Quantitative knowledge of distal femur articular surface geometry is critical to understand the relationship between anatomy and function of knee joint. It is also the foundation for total knee arthroplasty. There are metric differences in skeletal components among various populations. Most implants were designed and manufactured for the western population. The use of such implants in India may not be appropriate.

Material and methods: The present study was conducted on 202 adult human femora. Femoral notch width, medial lateral width and anterior posterior length was measured. Mean and SD of these values were calculated and compared with those reported in western literature.

Results: Values in present study are smaller than those in western counterparts. The mean antero-posterior length in the present study was 56.47 mm. The mean medial lateral width in the present study was 69.73 mm, which was smaller ($p < 0.05$) than earlier reported in western population.

Conclusion: Regional variation exists in the morphological parameters of distal femur. The data of present study was compared with design and size of knee implant available and commonly used in India. This information will be helpful in designing of implants for Indian population.

Conflicts of interest

The author has none to declare.

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Morphological study of ponticulus on posterior arch of atlas vertebrae

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Aims and objectives: The aim of the study was to determine incidence of impression of vertebral artery, posterior ponticulus and lateral ponticulus on posterior arch of the atlas vertebrae.

Material and methods: The incidence for presence of exostosis from posterior margin of atlas vertebrae was studied in a total of 86 dried human atlas vertebrae, which were obtained from the department of anatomy, M.P. Shah Government Medical College, Jamnagar, Gujarat. The morphological variations on posterior arch like depth of groove for the vertebral artery and partial or complete ponticulus was observed.

Results: The incidence of impression for the vertebral artery on posterior arch of atlas vertebrae was 38.37% and impression for vertebral artery deeper then former was 33.72%. The presence of partial posterior ponticulus was in 22.1% cases whereas complete posterior ponticulus was found in 1.74% cases. The incidence of partial lateral ponticulus was 4.07%. There was no any posterolateral tunnel found in present study.

Conclusion: Present study reveals that the prevalence of posterior ponticulus was more as compared to lateral ponticulus. The incidence of partial posterior ponticulus was higher than complete ponticulus. The study also suggest that incidence of bilateral partial ponticulus was more than the unilateral. Knowledge of this incidence is essential for neurosurgeon and orthopaedicians in treatment of vertebrobasilar insufficiency due to compression of vertebral artery in bony ring.

Conflicts of interest

The authors have none to declare.

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Study of Brocq and Mouchet arteriovenous triangle in human hearts

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Aims and objectives: The study aimed to observe the topographic region of human hearts, i.e. Brocq and Mouchet arteriovenous triangle composed by the intersection of the great cardiac vein, the circumflex artery and the anterior interventricular branch of the left coronary artery.

Material and methods: The study was performed on thirty human hearts. Great cardiac vein, circumflex artery and anterior interventricular artery were analyzed by dissection without disturbing the vessels from adjacent adipose tissue for maintaining the anatomy in situ. They were analyzed regarding to their disposition in the triangle and the relations between them: classifying the patterns as: (i) absent, (ii) open inferiorly, (iii) open fully, (iv) closed, and (v) open superiorly.

Results: The presence of Brocq and Mouchet triangle was noticed in all the 30 cadaveric hearts. However, the triangle was closed in 17 hearts (56.66%); open in 13 (43.33%). It was open inferiorly and superiorly each in 5 cadaveric hearts (16.66%) each. The triangle was open completely in rest of 3 hearts (10%).

Conclusion: The triangle of Brocq and Mouchet is commonly used when performing an intravascular ultrasound of coronary arteries to help in identifying pericardium, myocardium and neighbouring vessels. Variations of this triangle may have implications in detecting those structures by ultrasonography.

Conflicts of interest

The authors have none to declare.

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Variations of anterior cerebral artery in human cadavers

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Aims and objectives: In the anterior component of circle of Willis, the anterior cerebral artery is an important terminal branch of internal carotid artery along with the anterior communicating artery. The knowledge of anatomical variations in anterior cerebral artery is more important to clinicians.

Material and methods: Morphology and variations of anterior cerebral arteries and the anterior communicating artery were studied in 40 formalin preserved brains. The variations of segment in relations with size course, communications and termination of anterior cerebral artery were noted under different groups like hypoplasia, aplasia, duplication and fenestrations.

Results: In 31.3%, i.e. (35%) variations were found. The mean diameter and length of the proximal segment of the anterior cerebral artery was 3.2 mm and 15.7 mm, anterior communicating artery was 2.4 mm and 3.3 mm and distal segment of the anterior cerebral artery was 2.5 mm and 42.1 mm respectively.

Conflicts of interest

The author has none to declare.

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Study of variations in the origin of obturator artery

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Aims and objectives: To study the variations in the origin of obturator artery.

Material and methods: The pelves of 35 cadavers embalmed with 10% formalin were, sagittal bisected to note, in each half, the origin of obturator artery and any variations.

Results: Different types of variations in the origin of the obturator artery were noticed. In some cases the artery arose from the external iliac artery. In some other cases it was arising from posterior division of internal iliac artery while in some cases it was arose from any branch of the anterior division of internal iliac artery.

Conclusion: Obturator artery is considered as the branch arising from anterior division of internal iliac artery but it shows numerous variations in its origin. Occasionally the obturator artery is replaced by an enlarged pubic branch of the inferior epigastric artery being rarely injured during femoral hernia repairs. Sometimes, the obturator artery curves along the edge of the lacunar part of the inguinal ligament, of a hernial sac, and may be inadvertently cut during enlargement of the femoral ring in reducing femoral hernias.

Conflicts of interest

The authors have none to declare.

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