

52

Topographic anatomy of the temporalis muscle

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*Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi, India***Aims and objectives:** To examine the attachments of the temporalis muscle in cadaveric dissection.**Material and methods:** The study was performed on thirty embalmed adult cadaveric head-halves. Dissection of the infratemporal fossa was carried out and anatomical details of the temporalis muscle were studied. This investigation was conducted in the Department of Anatomy, VMCM and Safdarjung Hospital, New Delhi.**Results:** The cranial attachment of the temporalis muscle was found to be from the floor of the temporal fossa and from the deep surface of the temporal fascia in all of the specimens examined. However in two of the cases, an additional aponeurotic part of the temporalis muscle was found originating from the mastoid portion of the temporal bone. The mandibular attachment of the temporalis muscle was found to be on the coronoid process and at the anterior border of the ramus of the mandible. However in one specimen, it was observed that the temporalis muscle had a musculo-aponeurotic insertion encroaching the mandibular notch. In another specimen, there was an unduly extensive insertion of the temporalis muscle which extended up to the body of the mandible.**Conclusion:** Precise knowledge of normal anatomy and morphological variations of the masticatory muscles is relevant for dentists and maxillo-facial surgeons for performing safe surgery. Temporalis muscle flap is beneficial for the reconstruction of both extraoral and intraoral defect.**Conflicts of interest**

The authors have none to declare.

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53

Evaluation of fetal cardiac dimensions from 18 weeks of gestation to term

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*Post Graduate Institute of Medical Education and Research, Chandigarh, India***Aims and objectives:** To provide data of fetal cardiac dimensions measured in coronal section which is comparable to four-chamber echocardiography and correlate it with gestational age.**Material and methods:** The study was conducted on 33 hearts of formalin preserved stillborn fetuses (gestational age 19–39 weeks). Coronal section through crux of heart to expose four-chambers was made. Cardiac measurements in four-chamber view were taken with digital caliper of precision 0.02 mm under stereo zoom microscope.**Results:** Increase in cardiac dimension from 19 to 39 weeks was as follows: Tricuspid annulus (TA) and mitral annulus (MA) diameters increased from 2.6 mm to 12 mm and 2.1 mm to 10.4 mm respectively. Right ventricular diameter (RVD) and left ventricular diameter (LVD) increased from 3.27 mm to 12.90 mm and 2.69 mm to 12.67 mm respectively. Length of right ventricular cavity increased from 7.47 mm to 21.83 mm and of left ventricular cavity from 7.47 mm to 22.50 mm. Diameters of aortic orifice (AO)and pulmonary orifice (PO) increased from 2.10 mm to 4.59 mm and from 1.8 mm to 5.88 mm respectively. Steady increase in TA, MA, LVD, RVD with increasing gestational age was seen. However, increase in these dimensions was more in ≥ 28 weeks than in < 28 weeks gestational age. Although LVD/RVD ratio increased significantly in ≥ 28 weeks gestational age, MA/TA ratio did not show significant change in two age groups. Pearson correlation coefficient showed good positive correlation with the crown rump and crown heel lengths.**Conclusion:** In case of suspected cardiac defect, data obtained may be a valuable in the prenatal assessment of cardiac malformations.**Conflicts of interest**

The authors have none to declare.

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54

Surgical anatomy and regional drainage pattern of pancreatic ducts in the head and uncinete process of the pancreas: A cadaveric studyHarsimranjit Singh^{1,*}, S. Sahni¹, A. Aggarwal¹, R.K. Kocchar², T.D. Yadav³, T. Gupta¹¹ Department of Anatomy, Postgraduate Institute of Medical Education and Research, Chandigarh, India² Department of Gastroenterology, Postgraduate Institute of Medical Education and Research, Chandigarh, India³ Department of General Surgery, Postgraduate Institute of Medical Education and Research, Chandigarh, India**Aims and objectives:** Pancreatic tumors like intraductal papillary mucin neoplasm (IPMNS) which spread along the branches of main pancreatic duct (MPD), particularly draining the head and uncinete process. Surgical removal of these tumors poses the risk of development of post-operative fistula and leakage from the smaller ducts. To minimize these complications, it is essential to recognize the normal and variant anatomy and spatial arrangement of pancreatic ducts and their branches in head and uncinete process.**Material and methods:** The present study was conducted on 50 formalin fixed enbloc specimens consisting of duodenum, pancreas, spleen and superior mesenteric vessels. MPD was injected with green colored latex solution at the tail of pancreas. Main and accessory pancreatic ducts and their branches were dissection out. Ductal drainage patterns of head and uncinete process of pancreas were recorded and variations in their branching pattern were noted.**Results:** Pancreas divisum was seen in two cases. Accessory pancreatic duct (APD) was absent in 14% cases. APD was confined to upper half of head of pancreas in 70% and in the remaining specimen lies in lower part. Lower part of head and uncinete process drained into MPD in 40% cases, into the APD in 12% cases and into both ducts in 46% cases. Head of pancreas was divided into 4 quadrants regional drainage each was identified.**Conclusion:** A comprehensive knowledge of arrangement of ducts in head and uncinete process of pancreas would help in precise localization and complete removal of benign and low grade malignant pancreatic tumors and diagnostic and surgical strategies to reduce the post operative complication.

Conflicts of interest

The authors have none to declare.

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55

Acromial morphology in relation with impingement syndrome

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Aims and objectives: The morphology of acromian is important to understand impingement syndrome. The acromioplasty is required in cases of decreased subacromian space. To increase subacromian space and improve rotator cuff tendonopathy surgeons need to do acromioplasty. The aim of study is to do morphometry of acromian and correlate it with other study.

Material and methods: The present study was conducted on 61 adult scapulae of unknown age and sex. The length and breadth of acromian process and the distance from the tip of the acromian process to supraglenoid tubercle and coracoid were measured with the help of a digital caliper.

Results: Shape of acromian from dorsal view was 55.73% quadrangular, 31.14% triangular and 13.11% tubular. We found quadrangular was most frequent type. Length of acromian was 41.23 mm and breadth of acromian process was 22.12 mm.

Conclusion: Acromioplasty is needed in some impingement syndromes and in some cases, only coracoacromial ligament excision without acromioplasty improves the symptom. Acromian morphology and morphometry is pivotal for surgeons and interventionists to do the surgery for rotator cuff tendonopathy.

Conflicts of interest

The author has none to declare.

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56

Assessment of 2nd and 4th digit length ratio as an anatomical marker for predicting the risk of developing polycystic ovarian syndrome

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Aims and objectives: Human finger lengths demonstrate constant ratios amongst themselves throughout life. The ratio between 2nd and 4th digit length (2D:4D ratio) is found to be indicative of intrauterine effect of testosterone and oestrogen upon growing foetus. 2D:4D is usually <1 in male and ≥1 in females. With this anatomical expression of sex-hormonal predominance during intrauterine life, we tried to find any possible association with developing polycystic ovarian syndrome (PCOS) in adulthood.

Material and methods: 251 women of reproductive age group (15–45 yrs) attending the G&O OPD of I.P.G.M.E.&R., Kolkata & R.G.K.M.C., Kolkata, who had fulfilled the Rotterdam criteria (2003), were taken as cases. Age matched 285 healthy female were examined for control data. Finger lengths of 2nd and 4th digit were measured using digital vernier caliper.

Results: After obtaining a statistically significant difference ($P < 0.05$) between 2D:4D ratio of cases and controls, a cut off value of 0.9928 for left hand with sensitivity 68.92 and specificity 72.98 and for right hand a cut off value of 0.9846 with sensitivity 66.53 and specificity 83.51 were determined, by interpreting 2D:4D of cases and controls using the ROC curve analysis. Thus we can say that those with a lower ratio than the determined cut off values have high probability of developing PCOS in adult life.

Conclusion: This anatomical expression can be used as a tool for early prediction of PCOS and hence substantiates the need for suitable lifestyle modification to counteract this syndrome at its nascent stage.

Conflicts of interest

The authors have none to declare.

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57

Termination variants of left coronary artery in north coastal Andhra Pradesh

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Aims and objectives: Coronary artery disease is a major cause of mortality in developed and developing countries. Anatomically coronary arteries show variations in branching pattern. A study of normal and variant pattern of termination of left coronary artery is of utmost importance in various interventional diagnostic and curative procedures. The perfusion dynamics of left coronary artery are important. With this aim the left coronary artery termination was observed in 50 cadaver hearts of north coastal Andhra Pradesh.

Material and methods: 50 hearts of cadavers of Anatomy department of MIMS, Nellimarla, Andhra Pradesh were collected over a period of 5 years. Left coronary artery origin course and termination was dissected.

Results: Bifurcation of left coronary artery was observed in 43 specimens where as trifurcation was observed in 6 specimens and quadrifurcation was found in 1 specimen. The results of the study were compared with others.

Conclusion: Variations in the left coronary artery is important as it is baring an interpretation of its effects in occlusion. It also affects the risk factors in atherosclerotic patients.

Conflicts of interest

The authors have none to declare.

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