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A study of abdominal wall perforators from deep inferior epigastric artery

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Aims and objectives: The deep inferior epigastric perforator flap is based on the perforator arteries of the deep inferior epigastric artery. The rectus abdominis muscle provides an excellent myocutaneous flap, either pedicled or free, because of the rich vascularity provided by the epigastric vessels and separation of muscle belly from the surrounding tissue within the rectus sheath.

Material and methods: The study was conducted on 30 adult cadavers. The length and width of the rectus abdominis muscle and length, direction, muscular branches of the perforator, branching pattern and termination of the inferior epigastric artery were observed.

Results: The diameter of inferior epigastric artery at the point of origin was between 2.1 and 3.5 mm, the artery dividing into two major branches was seen in 11 cases, the lateral branch being dominant in 3 cases, the medial branch in 3, both branches having equal caliber in 5 cases and in 19 cases there was one central axis with multiple side branches. Total number of perforators was 243. In 101 cases diameters was between 0.5 mm and 1.0 mm, and 139 exceeded 1.0 mm. The average running distance was 7.20 mm. Fifty-one percent perforators were present above the level of the umbilicus and 49% below. On each side 43% ideal perforators were present.

Conclusion: Majority of ideal perforators (72%) were concentrated 4 cm superiorly, 7 cm inferiorly and 5 cm laterally to the umbilicus. Our data inferred that 43% of all perforators with diameters over 1 mm are ideal perforators and most are located about a 5 cm radius around the umbilicus can easily be dissected.

Conflicts of interest

The authors have none to declare.

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Morphometric analysis of the first rib in dry bones

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Aims and objectives: Interscalene triangle is formed by the anterior and middle scalene muscles with the first rib, through which the brachial plexus and the subclavian artery pass to the costoclavicular space. Compression of these structures leads to symptoms of thoracic outlet syndrome. To calculate the ratio between the interscalene distance and inner circumferential length of the first rib in one hundred dry bones.

Material and methods: A cotton thread and vernier calipers to measure: (i) the inner circumferential length (ICL) of the first rib; and (ii) the interscalene distance (ISD) of the first rib. The ratio between the interscalene distances to inner circumferential length of first rib was calculated.

Results: The value of ICL was 70 mm in the following bones 16,21,29,82 then the value of ISD were 15,11,14,8 respectively and the ratio between ISD to ICL for bone no. 16 was 0.21, for bone no. 21 was 0.16, for bone no. 29 was 0.20 and for bone no. 82 is 0.11 respectively. It was noted that if ISD value decreases, subsequently the ISD to ICL ratio was also decreased. The same result was seen in all other bones. Total 100 first ribs ISD mean value were 12.07.

Conclusion: A decrease in ISD value shows a subsequent decrease in the ISD to ICL ratio. Clinical significance of the ratio will be discussed.

Conflicts of interest

The authors have none to declare.

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Study of annular pancreas – A rare finding

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Aims and objectives: Annular pancreas is a rare congenital developmental anomaly characterized by presence of ring of pancreatic tissue around the second part of duodenum. Rarely it can present in late adult life with wide range of clinical severities there by making its early diagnosis difficult. Frequency of this anomaly is nearly equal in infants and in adults. Aim of the study was to see incidence of annular pancreas in cadavers, to explain it embryologically and correlate it clinically.

Material and methods: 50 formalin fixed cadavers were dissected, the stomach was removed and the pancreatic tissue was dissected in detail, any variations seen were noted and photographed.

Results: 2 out of 50 cadavers showed presence of complete annular pancreas and 2 cadavers showed incomplete pancreatic tissue around the 2nd part of duodenum.

Conclusion: Annular pancreas involves a portion of pancreas winding around the posterior and right lateral side of second part of duodenum, to overlap it anteriorly. It can present as duodenal obstruction in new born and as pancreatitis, peptic ulcer and several other conditions in adults. But still surgery is necessary to confirm the diagnosis and a range of surgical procedures can be carried out to bypass the obstructed segment.

Conflicts of interest

The authors have none to declare.

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A study on the bifurcation of sciatic nerve with clinical significance

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Aims and objectives: Since the point of bifurcation of the sciatic nerve is very much variable. The aim of the present study was

to investigate the variations in the division of the sciatic nerve at different levels with the clinical implications.

Material and methods: For the above study, dissections of 50 lower limbs conducted in the department of Anatomy, NRS Medical College, Kolkata, over two years, from December 2012 to November 2014. The relevant structures were observed carefully and photographs of interested findings taken.

Results: Out of 50 inferior extremities, sciatic nerve divided normal in the back of the thigh, near the apex of the popliteal fossa in 41 cases (82%). In 9 limbs (18% cases), the nerve divided higher than normal: in the sacral fossa (14% cases) and in the gluteal region (4% cases).

Conclusion: A high division of the sciatic nerve may produce damage to the nerve after deep intramuscular injections in the gluteal region, sciatica, piriformis syndrome etc. So this variation has importance in gross and clinical anatomy.

Conflicts of interest

The author has none to declare.

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Abnormal origin of sural nerve from sciatic nerve

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Aims and objectives: Usually sural nerve arises from tibial nerve in the popliteal fossa. It accompanies the small saphenous vein in the superficial fascia and distributed to the lateral border of foot both on the plantar and dorsal aspect. In this study we found the abnormal origin of sural nerve.

Material and methods: During our routine dissection over the period of 4 years from 2011 to 2015 in 20 cadavers, we found in 2 male cadavers of age around 50 years each, the sural nerve on the right side was found to be arising from the sciatic nerve at the root of the thigh. It had a long course, starting from the root of the thigh to it's termination in the skin of the foot. In the popliteal fossa, the nerve becomes superficial by piercing the popliteal fascia. In the leg, it accompanied the small saphenous vein and had a usual course and relation up to its termination.

Results: The sural nerve on the right side was found to take origin from the sciatic nerve (abnormal origin) whereas on the left side, it originated from the tibial nerve (normal origin). This shows the variable origin of sural nerve.

Conclusion: The present study showed differences in the anatomy of sural nerve as it's origin from sciatic nerve compared to earlier studies, warranting further studies in Indian population. The nerve is often used as an autologous peripheral nerve graft as it is easily harvested, easily identified and exclusively sensory.

Conflicts of interest

The authors have none to declare.

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Variation of branching pattern of arch of aorta in North Maharashtrians

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Aims and objectives: The variations of vessels arising from the aortic arch are numerous. The purpose of this study is the description of the variations on the branching pattern of arch of aorta, in order to offer useful data to anatomists, radiologists, vascular surgeons, neck and thorax surgeons in North Maharashtrian subjects, and relating it with embryological basis.

Material and methods: Sixty-six arches of adult North Maharashtrian cadavers were exposed and their branches examined during cadaveric dissection in the Department of Anatomy of MVPS Dr. Vasantrao Pawar Medical College, Nashik and PDDVPFs Medical College Ahemadnager, Maharashtra.

Results: In this investigations three-branched aortic arch was found in 59 cadavers (89.39%); the 5 (7.57%), remaining aortic arch showed only two branches, out of which one was a common trunk, which incorporated the brachiocephalic trunk and left common carotid and other left subclavian artery and 2 (3.03%) aortic arches showed direct arch origin of the left vertebral artery.

Conclusion: The accurate information on this is vital for vascular surgery in the thorax, head and neck regions. Although, the variations are usually asymptomatic, they may cause dyspnea, dysphagia, intermittent claudication, misinterpretation of radiological examinations and complications during neck and thorax surgery. These observations are precious while invading the arch of aorta and its branches by instruments, as all areas are susceptible to surgical attack.

Conflicts of interest

The authors have none to declare.

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Gross study of intracranial part of internal carotid artery in humans

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Aims and objectives: To describe morphological features of various segments of intracranial part of ICA in foetuses and adults, and also to describe its relations to intracranial structures.

Material and methods: The study was conducted on 30 embalmed adult cadavers and 10 embalmed foetus of gestational age 20 weeks and above. The intracranial course of the internal carotid (ICA) was traced by dissecting the course of the artery from its entry in carotid canal in the petrous temporal bone thence cavernous sinus to its termination as anterior and middle cerebral arteries.

Results: The ICA in carotid canal runs upwards and forwards with two bends. In cavernous sinus it takes a serpentine course in vertical plane to pierce dura mater and enter subarachnoid space.