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Partial ossification of left sacrotuberous ligament and bilateral ossification of transverse acetabular ligament with sacralisation of left part of l5 vertebra: a case report

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The present study describes the topography and morphometry of partially ossified left sacrotuberous ligament, bilateral ossification of transverse acetabular ligament with sacralisation of left lower side of body of L5 vertebra in a male articulated pelvis. Ossified sacrotuberous ligament was 4.84 cm in length with a maximum thickness of 1.19 cm and fell short of attachment of sacrum by 1.18 cm. It showed a very rough exterior appearance and a groove bifurcating its terminal end. Bilateral transverse acetabular ligaments were ossified totally and converted the acetabular notches into foramena. The thickness of right and left TAL was 13.98 and 11.7 cm respectively. Sacralisation of L5 vertebra was unilateral on left side. The body of left side of L5 fused with base of sacrum. Additionally, it presented a large outgrowth of bone from the fused part and ala of sacrum. The other tuberosities like iliac and ischial, iliopectineal eminence and ischial spine were extra normally rough. These ossified structures may impede the movement of joints of pelvic bone and result in pain. They may also compress neurovascular bundle. These may help clinicians, radiologists and and surgeons for differential diagnosis and can be implicated in the development of innovative treatment of gluteal and perineal pain.

Keywords: ossification, sacrotuberous ligament, transverse acetabular ligament, sacralization, clinical implication.

Conflicts of interest

The authors have none to declare.

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Branching pattern of the internal iliac artery: an observation of the abnormal obturator artery in the western Indian population – a study linked with hernia reduction surgery

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Introduction: A severe and potentially lethal complication in pelvic injuries is arterial bleeding commonly involving the branches of the internal iliac artery. A sound knowledge of retropubic pelvic vascular anatomy is pivotal for successful performance of endoscopic total extra-peritoneal inguinal hernioplasty, as well as for laparoscopic herniorrhaphy.

Knowledge of presence of accessory obturator artery is very handy in reducing a strangulated femoral hernia. Knowledge of the possibility of an abnormal venous plexus on the lateral pelvic wall is also important in pelvic surgeries. Obturator artery is usually a branch of the anterior division of internal iliac artery. It runs forwards on the lateral pelvic wall, accompanied by the obturator vein and nerve and leaves the pelvis by passing through the obturator foramen. Lateral wall of the pelvis has the obturator internus muscle, with obturator fascia from which the levator ani muscle arises. Normally there is no venous plexus in the anterolateral wall of the pelvis.

The trans-abdominal approach is an approach to hernia repair that is unfamiliar to most general surgeons. The ideal reconstruction of the floor of the inguinal canal during a herniorrhaphy involves good anatomic dissection and exposure, which can only be accomplished by entering the sub-inguinal space of "Bogros". There is adequate anecdotal experience to indicate that the relationships of structures near the internal ring are not generally well known, and this may predispose them to injury during surgery. Surgeons must be conscious of unexpected sources of hemorrhage, such as an aberrant obturator artery or vein, and unexpected iliopubic vessels and accordingly must take appropriate precautions to avoid injury to these structures.

In the past, accessory obturator artery is found to be present in 30%–40% of cases. When both the normal and accessory obturator arteries are present with rich anastomoses at the obturator canal it is known as "corona mortis" or "crown of death". In other words, it is the anastomosis between the pubic ramus of the inferior epigastric artery and the obturator artery. It is significant because hemorrhage may occur if the corona mortis is accidentally cut and achievement of subsequent hemostasis is extremely difficult. There are reports on the existence of a venous corona mortis also which is more frequent than the arterial corona mortis.

Variations in the origin of obturator artery are not uncommon. It can originate from common iliac, anterior division of the internal iliac artery, inferior epigastric artery, superior gluteal artery, inferior gluteal, internal pudendal arteries or external iliac artery. Its origin from the posterior division of the internal iliac artery has also been reported.

The area of the pelvic brim and lateral pelvic wall is very important and it is the anchoring site for the repair of inguinal and femoral hernias. During surgery, the abdominal muscles are retracted laterally by applying pressure on the lateral pelvic wall. Hence a very good knowledge of arterio–venous variations in this area is very important for surgeons. Knowledge of the variations is quite useful in Burch procedure, as they might bleed significantly in this procedure.

Materials and methods: The human cadaver is probably the most ideal model to safely explore the surgical anatomy. 32 formalin-fixed human cadaver hemi-pelvises after dissection was completed by the first MBBS students were used for this study. The pelvises were separated at the level of L4-L5 articulation then sectioned in the midline and were further dissected in the pelvic and retropubic inguinal region. The pelvic viscera were pulled away from the pelvic walls to expose the obturator artery. The branches of the internal and external iliac artery were judiciously dissected in order to identify and trace the obturator artery from its origin to its exit at the obturator membrane. The observations regarding the origins of obturator artery were recorded carefully. The course of the artery and its relation to the surrounding structures was followed and variations were documented. Venous plexuses on the lateral pelvic walls were also observed. Photographs were taken using Sony Alpha SLR camera with zoom lens and diagrams were drawn to document the findings.

Hence to summarize, this study investigates the frequencies of (a) the presence of abnormal obturator vessels (vasa corona mortis), (b) the occurrence of abnormal obturator veins (venous corona mortis) and (c) the different patterns of the origin of the abnormal obturator arteries from the Iliac arterial system.

Observations and results: Vasa corona mortis was documented in the cadaveric study but venous corona mortis was found to have a higher significance. The remaining findings and discussion maybe presented at the conference.

Conflicts of interest

The authors have none to declare.

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Split right inferior belly of omohyoid with suprascapular artery in between it

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Inferior belly of omohyoid is use as a landmark for endoscopic exploration of the brachial plexus. Variation of inferior belly of omohyoid muscle has immense clinical significance because of its relation to brachial plexus, external jugular vein, suprascapular nerve, vessels and phrenic nerve. The need to understand muscular variation is of greater importance because of the increased number of endoscopic surgeries and images for diagnosis.

A number of variations of omohyoid muscle such as the absence of muscle, unusual sites of origin and insertion, and multiple bellies have been reported. Doubling or splitting of superior belly of the omohyoid was reported several times. However the splitting of the inferior belly of the omohyoid muscle is rarely reported. Here-in we report a case of unusual splitting of inferior belly of omohyoid muscle. During the dissection for undergraduate students at AIIMS, Bhubaneswar, unusual morphology of inferior belly of omohyoid muscle has been observed in formalin embalmed 60 year old male cadaver. The inferior belly of omohyoid was split. Another important finding observed was suprascapular artery entrapment between the split upper and lower parts of belly of inferior omohyoid with slight indentation mark on the artery suggestive of chronic compression. This muscle is used for various important clinical procedures and is an important landmark for radical neck dissection so the knowledge of possible anomalies of omohyoid is important.

Conflicts of interest

The authors have none to declare.

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Ossification of falx cerebri: a case report

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Objective: To study ossification of falx cerebri which is rare but can be associated with various medical conditions. In accidental finding of ossification of falx cerebri in CT scan or MRI further work up should be carried out to rule out the various pathological causes.

Method: The variation was observed during routine osteology tutorial. The same is being presented.

Result: Complete ossification of falx cerebri is observed during routine osteology tutorial most likely physiological.

Conclusion: Ossification of dural folds is very rare and falx ossification is seen in 0.7% of patients. It can be physiological or pathological as associated with many medical conditions. Since falx cerebri is derived from embryonic mesenchymal cells, occasional ossification might be seen due to friction, haemorrhage or trauma, which results in some osteogenic change leading to formation of membranous bone. It can be physiological as found in old age or pathological. Incidence of ossification of falx has been reported in medical disorders such as endocrine disorder (hyperparathyroidism), vitamin D intoxication, chronic renal failure, basal cell nevus syndrome (Gorlin-Goltz syndrome), hypertelorism, psuedoxanthoma elasticum, Chavany-Brunhes syndrome, etc.

Keywords: falx cerebri, ossification, Chavany-Brunhes syndrome, Gorlin-Goltz syndrome.

Conflicts of interest

The authors have none to declare.

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Parametric analytical study of human hip bone

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Introduction: Hip bone usually displays differences in morphology in two senses due to different reproductive functions, which are influenced by sex hormones. Therefore, shapes of hip bone are different in males and females that make it interesting anatomically and anthropologically. Though non-metric methods such as visual examination of bone morphology for sex determination is entirely dependent on experience and expertise but anthropometry plays some role in creating a data which can be useful for sex determination.

Aim: Present study was done to find out sexual dimorphism in hip bones with respect to ischio-pubic and chelotic indices.

Materials and methods: For the present study, hip bones were retrieved from Department of Anatomy, PGIMS, Rohtak were used. In the present study, 100 adult human hip bones of known sex were studied out of which 66 were males and 34 were females. From these two groups, bones were studied for metrical parameters of hip bone as pubic length, ischial length and ischio-pubic index and also chelotic index.

Results: In this study it was observed that pelvic segment of chelotic line is greater in females than in males. While sacral segment was found more in males than in females. Chelotic index was found more in males (mean = 135.98 ± 15.79 mm) than in females (mean = 131.54 ± 18.46 mm) while ischial length of males was more than that of females and pubic length was less in males. Ischio-pubic index was found less in males (mean = 100.72 ± 4.53 mm) than in females (mean = 113.00 ± 7.69 mm)

Conclusion: Sexual dimorphism as well as bilateral asymmetry of hip bones is observed by these variables.

Keywords: chelotic line, chelotic index, sexual dimorphism, ischio-pubic index, asymmetry of hip bones.

Conflicts of interest

The authors have none to declare.

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