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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 foramina. 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 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 retro-pubic 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-pelves 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 retro-pubic 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.