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Case Report

Anatomy Section

An Indirect Inguinal Hernia Discovered in an 80-Year-Old Cadaver: A Case Report

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ABSTRACT

Arguably, one of the most prevalent surgical problems across the world is Inguinal Hernias (IH). They are defined as a protrusion of the viscus or part of the contents of the abdominal or peritoneal cavity, inferiorly through a weakness in the abdominal wall. Among the various types of hernias, IH are known to be more common across both genders, but more so in men. Here, we report an incidental finding of a large inguino-scrotal swelling that was observed in an 80-year-old male cadaver during routine dissection of the pelvic region; it was not reducible and contained loops of small bowel within the hernia sac. Although IH is a common pathology, the size and extent of this IH make it a unique case study.

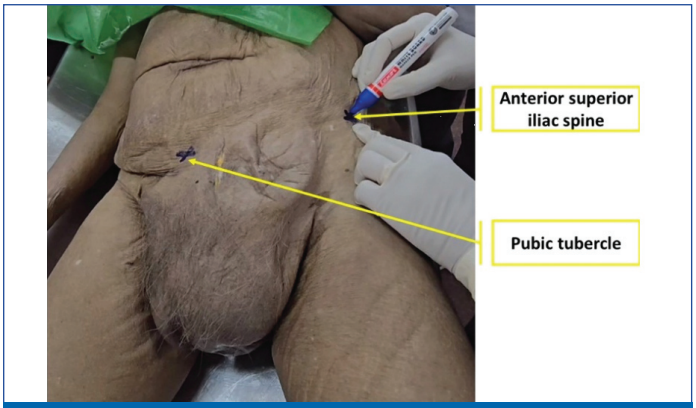
Keywords: Anatomy, Cadaver dissection, Indirect inguinal hernia, Inguino-scrotal swelling

CASE REPORT

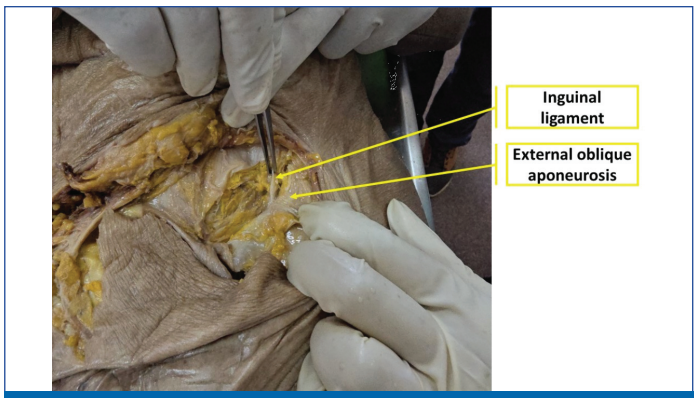
During routine dissection for medical students, an 80-year-old male cadaver, which was donated under the body donation programme, was examined. The cause of death of this man, as per submitted records, was natural causes. On gross examination of the cadaver, a grossly enlarged inguino-scrotal swelling was observed with colour changes noted on the overlying skin, as seen in [Table/Fig-1]. The scrotal sac measured approximately 12 cm in width and 24 cm in length.

Primary markings of the Anterior Superior Iliac Spine (ASIS) and pubic tubercle were made, after which an incision was made 2.5 cm above and medial to the pubic tubercle [Table/Fig-1]. The skin was reflected up to the superficial fascia, and the anterior wall was carefully dissected to reveal the inguinal canal. The inguinal ligament and superficial inguinal ring were visualised [Table/Fig-2]. A glistening hernial sac was observed and then opened by reflecting the external oblique aponeurosis and internal oblique muscle [Table/Fig-2].

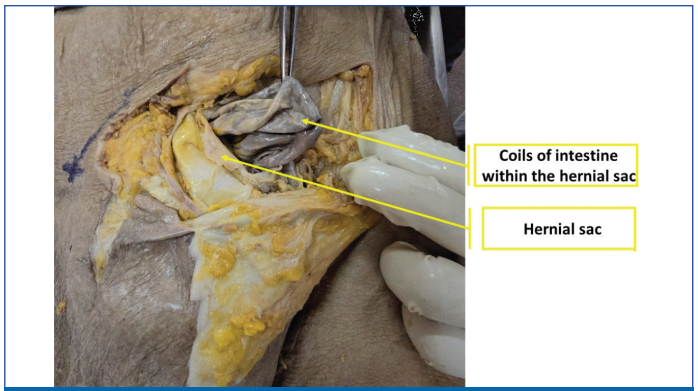
After reflecting the anterior wall, the contents, which were coils of small intestine, were exposed [Table/Fig-3]. The coils of small intestine were carefully observed, showing no change in colour, and palpated along their length, suggesting no obstruction or features of incarcerated bowel loops. Upon further dissection, the deep inguinal ring was located approximately 2 cm above the mid-inguinal point. Medial to this ring, the inferior epigastric artery was identified, and the spermatic cord was viewed, as seen in [Table/Fig-4]. There was no compression of the blood vessels or spermatic cord. As the hernia sac was not protruding through Hesselbach's triangle and was present through the deep inguinal ring, lateral to the inferior epigastric artery, a diagnosis of indirect IH was made.



[Table/Fig-1]: Cadaver showing the large inguino-scrotal swelling.



[Table/Fig-2]: Dissection of the anterior wall of the inguinal canal.



[Table/Fig-3]: Cadaver showing the herniated loops of small intestine within the hernial sac.

[Table/Fig-4]: Deeper dissection showing the contents of the inguinal canal.

DISCUSSSION

During the development of the foetus, the formation of the inguinal canal is attributed to the differential growth of the body wall. As the morphological state of sexual development is not different in both sexes, it has been observed that the anatomical components forming the walls of the inguinal canal develop during 8-10 weeks of intrauterine life [1].

Patients with Inguinal Hernias (IH) who are asymptomatic may be discovered coincidentally during standard physical examinations. Patients often complain of pain that radiates down the leg or inferiorly into the scrotum. IH categorised as strangulated or incarcerated may exhibit obstructive symptoms related to herniated contents or excruciating pain. For the most part, a physical examination suffices for diagnosis. Imaging, although seldom needed, can aid in the diagnosis of a hernia or provide further details regarding the type of hernia [2]. Hernias can cause severe complications for the patient, especially if they are incarcerated, as they can develop into strangulated hernias, which can be fatal and lead to intestinal ischaemia if not treated [3]. Even though most patients with incarcerated hernias need immediate surgery within 24 hours to reduce their chance of developing intestinal necrosis, these individuals still have high mortality rates. Torsion of the greater omentum is another uncommon complication that has been documented, and it can result in excruciating, sudden abdominal discomfort [2].

Common risk factors for IH include family history, prior contralateral hernias, advanced age, aberrant collagen metabolism, prostatectomy, and low body mass index [4]. While there is currently no standard repair method for groin hernias, there are several options available, such as Shouldice, Lichtenstein tension-free repair, laparoscopic Transabdominal Pre-peritoneal Repair (TAPP), and Totally Extraperitoneal Repair (TEP) [5]. It has also been demonstrated that using mesh dramatically decreases the need for reoperation after hernia surgery [4]. The benefits of intensive surgical treatment in this context must be evaluated against the possibility of potentially fatal surgical complications [6].

It is very rare to find cadavers with IH, especially those with indirect IH. A similar cadaveric case report by Saralaya VV et al., reported that the contents of the hernia sac included a 5.5 cm loop of intestine with a 13 cm length of transverse mesocolon, highlighting the rarity of indirect IH in cadavers [7]. Desai Y et al., also noted the rarity of indirect IH, measuring approximately 4.3 cm, where a co-occurrence of a hiatal hernia along with the indirect hernia was present; the herniated sac contained mesentery with part of the proximal ileum but showed no signs of strangulation or obstruction [8].

It is only possible to speculate on the causes of the IH and the rationale behind not receiving treatment because of the limited information and medical history provided about the cadaver due to confidentiality. The patient's age makes it likely that a period of constipation raised intra-abdominal pressure to the point that it created an opportunity through a weakness in the abdominal wall. There could have been many reasons why the IH was not treated once it was discovered. It is possible that, as the patient neared the end of his life, comfort and palliative care took precedence over medical intervention.

The possibility of hesitation or reluctance may have prevented this patient from seeking treatment. In conclusion, given the evidence of no other surgical operations we discovered in this patient, such as the absence of surgical mesh in his left pelvis, we believe that financial constraints were more likely to have prevented him from obtaining care, even though it was still conceivable at this stage of his life.

CONCLUSION(S)

The presence of these hernias emphasises the significance of considering uncommon anatomical characteristics. This case serves as a reminder of the importance of having a comprehensive understanding of the pathological, clinical, and anatomical aspects that contribute to the development of hernias. Further investigation into such associations may help guide hernia management plans and diagnostic techniques, especially in populations with unusual symptoms.

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