

An obstructed spigelian hernia with ipsilateral cryptorchidism: A rare case scenario of an obstructed spigelian hernia with ipsilateral cryptorchidism

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ABSTRACT

A spigelian hernia is the type of ventral hernia that appears in the abdomen's lower quadrant between an area of dense fibrous tissue and abdominal wall muscles, forming a spigelian aponeurosis. Undescended testicle" is the term used when one or both of the testicles fail to descend into the scrotum. Here, we report the case of a right lower quadrant spigelian hernia with ipsilateral undescended testes that may be a part of the new spigelian-cryptorchidism syndrome in a 27-year-old male. An exploratory laparotomy was performed via the right paramedian incision. The right-sided orchidectomy was also done. The resected bowel and testes were sent for histopathological examination. The patient was discharged and is doing well on follow-up visits.

Key words: Ipsilateral cryptorchidism, Obstruction, Spigelian hernia

A spigelian hernia is the type of ventral hernia where the aponeurotic fascia pushes through a defect in the junction of the linea semilunaris and the arcuate line, creating a bulge. It appears in the abdomen's lower quadrant between an area of dense fibrous tissue and abdominal wall muscles, forming a spigelian aponeurosis. It is the protuberance of the omentum, adipose tissue, or bowel in that weak space between the abdominal wall muscles that ultimately pushes the intestines or superficial fatty tissue through a hole, causing a defect. As a result, it creates the movement of an organ or a loop of intestine in the weakened body space that it is not supposed to be in. It is at this separation (aponeurosis) in the ventral abdominal region that herniation most commonly occurs. Spigelian hernias are rare compared to other types of hernias because they do not develop under abdominal layers of fat but between fascia tissue that connects to muscle [1]. The Spigelian hernia is generally smaller in diameter, typically measuring 1–2 cm and the risk of tissue becoming strangulated is high [2].

Undescended testicle" is the term used when one or both of the testicles fail to descend into the scrotum. The child's pediatrician will evaluate this during a routine examination. The scrotum looks and feels empty. Testicles that don't descend into the scrotum won't work normally. Testicles sit in the scrotum, slightly below body temperature, in order to keep sperm healthy. While the testicles are in the abdomen, they are warmer than they should


be. If they are at a higher temperature for too long, the sperm will not mature well. This can lead to infertility. This is a greater risk when both testicles remain within the abdomen [3]. Undescended testicles are also linked to a higher risk of testicular cancer in adulthood, testicular torsion (twisting of the blood vessels that bring blood to and from the testis), and inguinal hernia (a hernia that develops near the groin).

Among male patients with such types of hernias, 75% of them are associated with cryptorchidism. In this paper, we report a case of a right lower quadrant spigelian hernia with ipsilateral undescended testes that may be a part of the new spigelian-cryptorchidism syndrome [4].

CASE PRESENTATION

A 27-year-old male presented to the emergency room with complaints of swelling over the right lower abdomen for 6 h which was painful, firm, non-reducible, and not mobile (Fig. 1). The local temperature was raised. The rest of the abdomen was soft and non-tender, and bowel sounds were absent. The patient had not passed stool or flatus for 6 h. The patient had a history of swelling over the same site in the past, which was reducible. The patient also had right testes that had not been present in the scrotum since birth.

Upon general physical examination, the patient was vitally stable on admission. The total leukocyte count was raised on admission, and the rest of the laboratory parameters were within

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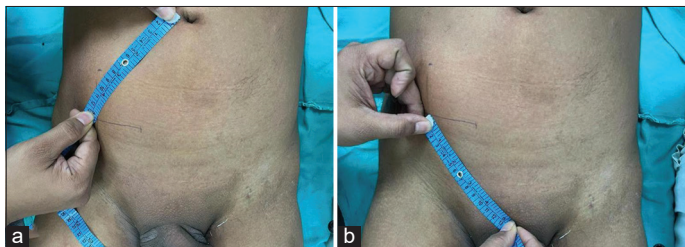


Figure 1: Clinical presentation of swelling which is (a) approximately 13 cm inferolateral to umbilicus and (b) 13 cm superolateral to pubic symphysis

normal limits. Chest and abdominal radiographs showed no abnormalities. Testicular tumor markers were within normal limits. A contrast-enhanced computed tomography (CT) of the whole abdomen was done and was suggestive of the right lower abdominal wall herniation of the bowel with mesentery (Fig. 2). Ultrasound in the inguinoscrotal region was suggestive of the right ectopic testes.

An exploratory laparotomy was performed via the right paramedian incision, and the sac was seen along with a gangrenous bowel segment approximately 40 cm in length. The right testis was also found along with the sac. On bowel exploration, the gangrenous bowel segment was found to be 50 cm proximal to the ileocecal junction, which was resected, and anastomosis of the resected ileal segments was done (Fig. 3). The right-sided orchidectomy was also done. The resected bowel and testes were sent for histopathological examination. The patient was discharged and is doing well on follow-up visits.

DISCUSSION

Spigelian hernia, which was first described by Klinkosch in 1764, accounts for about 0.1% of all abdominal hernias. This is a defect that occurs in the spigelian fascia located between the transversus abdominis aponeurosis lateral to the rectus muscle at the level of the arcuate line. It is hypothesized that perforating vessels may weaken the area in the fascia as a small lipoma or fat enters, which eventually leads to hernia formation. They can also be related to stretching in the abdominal wall caused by obesity, multiple pregnancies, or previous surgeries. The hernial sac is typically intraparietal, passing through the transversus and internal oblique aponeuroses and extending out beneath the external oblique or within the rectus sheath. The reported literature shows that hernias usually consist of preperitoneal fat. However, the hernia may contain a small bowel, colon, omentum, or occasionally the appendix [1,5]. In this case, the content was ileum, leading to an acute small bowel obstruction, as happened in this patient. This diagnosis is usually difficult to diagnose clinically as it does not often present as a mass or bulge.

Most patients present with pain as a symptom, and a CT can be used to diagnose the hernia. Most authors suggest repairing the spigelian hernia, as the fascia here typically forms a rigid neck, which could lead to future incarceration or strangulation. Clinical onset can be acute or chronic. In the first case, an acute abdomen may be the main sign of complications, often requiring urgent investigation and surgery. Chronic onset shows no characteristic or pathognomonic signs or symptoms. Non-complicated hernias

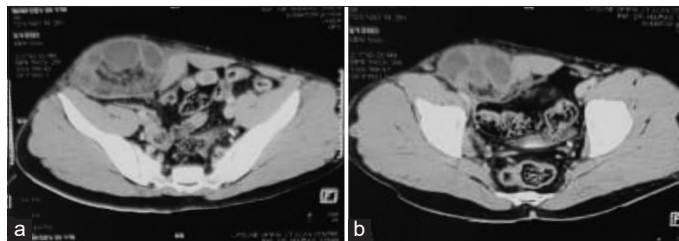


Figure 2: Contrast-enhanced computed tomography whole abdomen showing bowel segment entrapped within sac in abdominal wall

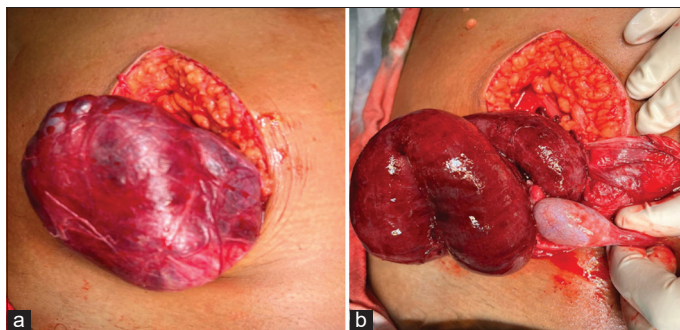


Figure 3: Sac containing gangrenous bowel segment along with ipsilateral undescended testes

can cause vague abdominal discomfort or bowel dysfunction as the only appreciable symptoms in an often incidental diagnosis. Imaging procedures such as US and CT are now routinely used and integrated to diagnose bowel emergencies, including herniations [6]. The role of imaging is very important if the hernia is clinically occult and in diagnosing complications such as incarceration, obstruction, strangulation, and content necrosis, conditions that often require prompt surgical intervention.

Undescended testis (UDT), or cryptorchidism, is a common birth defect in male genitalia in which at least one testicle is absent from the scrotum. The missing testicle can be found along the inguinal canal, or in the ectopic case, it could go as far as the pre-pubic area or perineum. Cryptorchidism itself means “hidden testis” and is interchangeable with UDT. Normal testicular descent raises scientific interest in terms of its mechanism. The etiology of this condition remains poorly understood. It is almost always associated with hernias [7].

Raveenthiran suggested that the co-existence of a spigelian hernia and an ipsilateral UDT probably forms a new syndrome. According to his hypothesis, the first step is a testicular maldescent of unknown origin. Then, the ectopic testis “drags down a processus vaginalis” that forms a potential hernia sac. This sac opens up with increased intra-abdominal pressure, thus converting it into a spigelian hernia. In the absence of a gubernaculum and inguinal canal, this hernia may serve as an “emergency exit” for the testis. When evaluating his theory, it should be remarked that in the patient referred to in this paper, with multiple anomalies, the testis was found outside the hernia sac, thereby mimicking a testis on the outside of a processus vaginalis, such as in the case of a normal testicular descent through the inguinal canal [8].

We conclude that cryptorchidism, combined with the finding of the ipsilateral testis in the spigelian hernia sac, is probably a

new syndrome that is distinct from ordinary cryptorchidism, in addition to being distinct from other pediatric spigelian hernias. We hypothesize that “the spigelian-cryptorchidism syndrome” consists of the following four congenital, ipsilateral elements: a defect in the spigelian fascia, a hernia sac containing the testis, the absence of the gubernaculum, and the absence of an inguinal canal. Future surgical explorations and descriptions of these rare cases may add more evidence to this theory. [9] Also, the exact mechanism behind this syndrome, as well as the probable connection between the defect in the spigelian fascia and gubernaculum-associated defects, remain to be investigated. Surgeons should be aware of these associated anomalies when dealing with spigelian hernias and/or cryptorchidism in male infants [10].

CONCLUSION

The possibility of a spigelian hernia should be kept in mind when dealing with parietal wall swelling with cryptorchid testes. One should also look for UDT in the hernial sac. Laparoscopy is a good alternative as it gives better delineation of internal anatomy and better cosmesis. Cases with swelling at hernia sites should be promptly diagnosed and treated to avoid strangulation and necrosis of bowel segments.

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