Strangulated Interstitial Hernia with Strangulated Cryptorchid Testis—First Case Report in the Medical Literature

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Abstract

Interstitial hernias are a rare subtype of abdominal hernias, where sac is present in between the abdominal wall layers. Although, difficult to diagnose clinically, they are usually detected on imaging studies. Interstitial hernias presenting with undescended testis are common. Even after a meticulous online search of the medical literature, we could not find a case report of 'Strangulation of Interstitial hernia, with a strangulated undescended testis in an elderly man. We hereby present this extremely rare case, and possibly, this could be the first of its kind, case report in the medical literature. Our aim is to present a combination of rare presentations in an elderly cryptorchid person with strangulated interstitial hernia. A 65-year male patient presented with 4 days of pain abdomen and vomiting. He was having features of toxemia. Ultrasonography revealed interstitial hernia with bowel loops. During surgery, gangrenous bowel loops with the sac between the interstitial planes, with strangulated cryptorchid testis, were found. Strangulated interstitial hernia in elderly cryptorchid person, leading to the strangulation of the undescended testis, is extremely rare, and this could be the first case reported in the medical literature.

Keywords Interstitial hernia · Interparietal hernia · Undescended testis · Cryptorchid testis · Strangulated hernia · Strangulated testis · Incarcerated hernia

Introduction

Interstitial hernias are a rare sub-type of abdominal hernias, in which the hernial sac is present between the abdominal wall layers. This type of hernia was first described by Bartholin [1], in the year 1661. He described it as a variation of inguinal hernia. These interstitial hernias are usually seen in children with undescended testis [2]. Because of its unusual presentation, interstitial hernias are very hard to detect and can be easily overlooked on clinical examination. These are usually detected by imaging studies. Many a times, due to delay in diagnosis, such hernias present with obstruction and/or strangulation of the bowel content. Undescended testis can sometimes be found in an incarcerated inguinal hernia [3]. Even strangulation of such undescended testes due to constriction at the ring of a

strangulated inguinal hernia was mentioned by Charles E. Farr [4], as a very rare and unusual presentation.

But we have not seen in literature, in spite of a meticulous online search, any case of strangulation of undescended testis due to constriction at the ring of a strangulated interstitial hernia. Hence, we are presenting this rare case here.

Case Report

A 65-year-old male patient presented to the emergency room of our institute, with complaints of pain in the right lower abdomen, vomiting and fever, since last 4 days. On examination, patient was found to be toxic, dehydrated and hypotensive. There was tenderness with guarding and rigidity at the right lower quadrant of the abdomen. A detailed examination after resuscitation revealed absence of testis in the right scrotum with undeveloped right hemi-scrotum. Because of the unstable condition of the patient, unclear history and absence of the testis in the right hemi-scrotum, we preferred ultrasonography as the diagnostic modality. The ultrasound report came as—interstitial hernia with incarcerated bowel loops as its content. No mention was made about the position of the right testis, in the sonography report. He

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was operated through a transverse incision, over the point of maximum tenderness, which was marked pre-operatively. The sac was found and positioned caudally, between the internal oblique and the transverse abdominis muscles. The neck of the sac was at the deep ring. But the sac has travelled into the plane between the internal oblique and transverse abdominis muscles, instead of going into the inguinal canal, as is the norm in case of indirect inguinal hernias. Therefore, the inguinal canal was found to be empty. The sac contained loops of ileum along with the undescended testis. The undescended testis was necrosed due to strangulation of spermatic cord at the tight neck of the incarcerated hernia (Fig. 1). The non-viable testis was removed with its spermatic cord. The ileal loops in the sac had become gangrenous, due to strangulation (Fig. 2). The gangrenous portion of the bowel was removed, followed by anastomosis of its healthy free ends. The neck of the sac (containing both spermatic cord and bowel) was extremely tight, and moreover, the sac was between the fairly tough muscular layers of the parietal wall. These two factors probably may have led to the strangulation of testis along with the bowel.

The hernial defect was closed by primary tissue repair. Incision was closed in layers.

Post-operatively, the condition of the patient further deteriorated and he went into irreversible septic shock with multi-organ failure. Unfortunately, he succumbed on the very next day. The histopathology of the testis specimen showed complete haemorrhagic infarction. There was no evidence of malignancy.

Discussion

Interparietal hernias are a rare subtype of abdominal wall hernias, in which hernial sac lies between the abdominal wall musculoaponeurotic layers. Based upon the location of the sac, these Interparietal hernias can be divided into (i) preperitoneal, in which the sac is located between the peritoneum and transversal fascia, (ii) interstitial, in which the sac is in between the muscle layers of the abdominal wall or (iii) superficial, in which the sac is located between the external oblique aponeurosis and the skin. Among these, the interstitial hernia is the most common [2].

Fig. 1 Strangulated right cryptorchid testis

Fig. 2 Gangrenous bowel loop in the sac

There are many theories explaining, why exactly the sac prefers to go between the parietal layers. One of the explanations is that this happens because of narrowing of the external inguinal ring (especially in cases with undescended testis), which makes it impossible for the hernial sac to descend down the inguinal canal [1].

In interstitial hernias, because of the presence of the sac between the muscular layers of abdomen, diagnosis by clinical examination alone is less accurate. The deeper the location of the sac, the more difficult it will be to diagnose these cases [5]. Although CT scan is considered to be the best diagnostic modality [6], ultrasound also detects the condition with fair accuracy. In spite of employment of all these diagnostic methods, the disease—many a times—will be confirmed intra-operatively [2].

Undescended testis is usually detected early in the childhood and is amenable to surgical correction. Few cases remain undetected (hence uncorrected), till puberty or beyond [7].

Jones and Hutson hypothesised that Spigelian hernias developing in cryptorchid cases could be because the gubernaculum and hence the line of descent of the testis ‘mislocates’ to an ectopic site, along the embryological mammary line [8].

But it is extremely rare to find cases of undescended testis in the old age. In one case report, an undescended testis was present in an individual of 50 years of age [9]. But no cases were found, in which there is an undescended testis in an elderly, with strangulated interstitial hernia, causing strangulation of the testis due to constriction at the neck of the sac.

Interstitial hernia, because of delay in diagnosis, more often than not, presents with complications. This patient also presented to us very late, with features of strangulation, leading to sepsis and multiple organ dysfunction. It was too late for him, as he unfortunately died on the first post-operative day, in spite of our best efforts.

Conclusion

Strangulated interstitial hernia in an elderly cryptorchid person, leading to the strangulation of the undescended testis, is an extremely rare presentation. Not one factor or finding in isolation is unique. The strange mixture of these findings has

made this case unique and could be the first such case presented in medical literature.

Compliance with Ethical Standards

Conflict of Interest The authors whose names are listed above certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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