

A Case Report of Strangulated Small Bowel Spigelian Hernia and Literature Review

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ABSTRACT

Spigelian hernia is considered one of the rarest types of hernias, accounting for only 2% of all abdominal hernias. It is a type of ventral hernia, defined as a defect in the abdominal wall lateral to the rectus abdominus muscle. In the current case report, we present a case of an elderly man who developed a strangulated Spigelian hernia. He was taken to an emergency surgery, where he had a strangulated ischemic small bowel segment. It ended up by resection, anastomosis, and repair of the hernia defect. He had an uneventful post-operative recovery and was discharged in good condition.

Keywords: Intestinal obstruction; Spigelian hernia; Open hernia repair; Laparoscopic repair

Introduction

The incidence of Spigelian hernia is 0.2-2%. It is considered one of the rarest types of abdominal wall defects. Spigelian hernia is a ventral hernia, raised from Spigelian fascia. It lies medial to the semilunar line and lateral to the outer edge of the rectus abdominis muscle^{1,2}. It is more predominant among females. However, risk factors are similar to those related to other abdominal wall defects which include old age, obesity, multiparous, and abdominal trauma^{2,3}. Patients usually present to the ER with vague clinical symptoms and signs, the diagnosis are considered a challenge. At the first visit, it is usually complicated with incarceration. The clinical diagnosis can be confirmed by radiological examinations, such as ultrasound or CT scans. The need for surgical management is crucial once the diagnosis has been established, due to the high risk of strangulation which can reach up to 24%^{1,4}. The operative approach can either be done with open surgical repair or laparoscopic such as TEP, TAPP, or IPOM¹.

Case Presentation

96-year-old male patient presents with a history of reducible right direct inguinal hernia for a long time. He suddenly developed a small tender swelling at the right iliac fossa lateral to the rectus muscle, not reducible for one day. It was associated with constipation and repetitive vomiting. Clinically, the patient was in pain with a reducible right inguinal hernia but irreducible right lateral tender swelling, about 2*3 cm with negative cough impulse. Impression was incarcerated ventral hernia. The patient was taken to the operating theatre and an incision made over the swelling showed intact external oblique fascia with a herniated bowel underneath the fascia (**Figure 1**). The bowel was ischemic, and consequently, resection and anastomosis were performed without mesh. The patient stayed a few days in the hospital and then discharged after fully recovered.

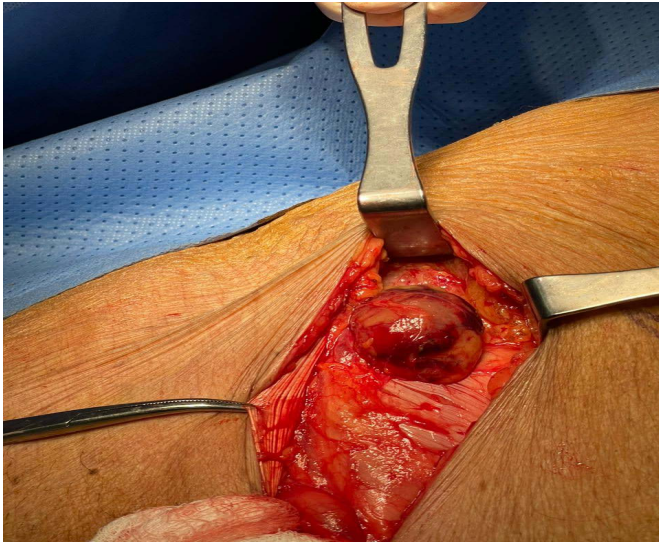


Figure 1: Implies right spigelian incarcerated hernia with ischemic bowel content.

Discussion

Spigelian hernia needs high index of suspicion due to its rarity and the nature of ambiguous clinical presentation as the external oblique fascia is preserved which gives its obscured examination to determine the hernia site^{2,3}. Adrian van den Spiegel was the first surgeon to describe it (1578-1625). It protrudes through a congenital or acquired defect in the Spigelian aponeurosis. It consists of transversus abdominis and internal oblique muscle fusion] between the semilunar line and the rectus muscle^{1,5}. 90% of the cases are located infra umbilically at the Spiegel line³. The content might include preperitoneal fat, peritoneal sac, colon, appendix, ovary, testicle, and endometrial tissue, while the most expected organ is the small bowel^{1,3}. The manifestation of a Spigelian hernia includes chronic intermittent abdominal pain, bulge at the abdominal wall, and sometimes symptoms resemble small or large bowel obstruction^{1,5} pain percentage varies between 31% and 86%¹. As the neck of a Spigelian hernia is usually narrow, it poses a high incarceration risk and it mandates prompt surgical repair⁶. Diagnosis can be challenging by the physical examination solely. Therefore, it is advisable to proceed with either ultrasound or CT scan of the abdomen and pelvis. They can identify the location of the defect, assess the contents of the sac, detect any bowel obstruction or ischemia, and evaluate the layers of the abdominal wall^{3,5}.

The treatment of spigelian hernia is surgical, either open or laparoscopic repair. The open technique is defined as a transverse incision with primary repair of the defect. Laparoscopic repair has different approaches including transabdominal pre-peritoneal (TAPP), total extra-peritoneal (TEP), and intraperitoneal on-lay mesh (IPOM) repair. IPOM is considered the most popular amongst all types of laparoscopic approaches due to its simplicity and shorter operation time^{1,5}. In emergencies, open repair with or without mesh is more practical than the laparoscopic approach, particularly in cases of strangulation or incarceration where there is a risk of bowel ischemia. However, the laparoscopic approach offers advantages such as shorter hospital stays and smaller incisions that results in less postoperative pain. While mesh has an advantage to decrease recurrence rate, it was not used in our case due to concerns about bacterial translocation in the presence of gangrenous bowel⁵. The long-term recurrence rate was reported to be lower with mesh contrary to simple suture closure².

In a single center experience that performed a retrospective study by⁶ reported 8 spigelian hernia cases with right sided in seven cases, and left side in one case. In addition, two of their cases accompanied with inguinal hernia and one other had an umbilical hernia³. Moreover^{7,8}, highlighted that Spigelian hernias are often underdiagnosed and are more common than previously thought. These hernias can manifest in three clinical stages. Stage 1 hernias, which lack peritoneal sacs, are typically found in younger patients. On the other hand, Stages 2 and 3 hernias, which involve peritoneal sacs, tend to occur in older individuals and may present as emergencies⁸.

Spigelian hernias can be evaluated using various radiological methods. A study conducted by D Light et al from 1998 to 2010, revealed that CT scan exhibited a sensitivity and positive predictive value (PPV) of 100%, while ultrasound sensitivity was 90% and a PPV of 100%. In contrast, comparing to clinical assessment, the sensitivity was 100% but the PPV was only 36%⁸.

There was a study compared open versus laparoscopic repair in elective bases, reported that the laparoscopic hernia repair superior in terms of morbidity and hospital stay⁹. T Mittal et al have shown a comparison between different laparoscopic approaches to repair Spigelian hernia, hernia repairs were done either by IPOM, TAPP, or TEP. Despite different laparoscopic methods, no recurrence or morbidity were observed for up to 10 years of follow-up respectively^{10,11}.

Conclusion

In conclusion, the detection and diagnosis of Spigelian hernia represent challenges due to their rarity and non-specific symptoms. Surgical repair, whether open or laparoscopic, remains the gold standard for treatment. The laparoscopic approach offers benefits such as reduced hospital stays and smaller incisions, but the choice of technique should be tailored to the individual patient. The common site of the hernia is the right side and often associated with another defect. However, the long-term outcomes of laparoscopic and robotic techniques remain unclear in the current literature, highlighting the need for further research in this area to enhance our understanding and optimize patient care.

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