ORIGINAL RESEARCH PAPER
Volume - 14 | Issue - 10 | October - 2025 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

SPIGELIAN HERNIA: A RARE PRIMARY VENTRAL HERNIA

General Surgery

Nimmala Nikitha Reddy Junior Resident, Department of General Surgery, Sri Siddhartha Medical College, Tumkur, Karnataka

Shivakumar T Professor, Department of General Surgery, Sri Siddhartha Medical College, Tumkur, Karnataka

ABSTRACT

Spigelian hernias are rare ventral abdominal wall hernias occurring through the Spigelian aponeurosis. They account for only 0.1-2% of all abdominal hernias and present unique diagnostic and management challenges. We report a case of 65-year-old female who presented with abdominal swelling, pain and vomiting. Diagnosis was confirmed through Ultrasound and CT Abdomen & Pelvis imaging, revealing spigelian hernia containing bowel loops with early ischemic changes. The patient underwent urgent open surgical suture repair. The patient had an uneventful postoperative course & discharged in stable condition without any complications. Even though rare it should be considered in the differential diagnosis of ventral hernias as there is risk of strangulation.

KEYWORDS

Spigelian Hernia, Transversus Abdominis Aponeurosis, Strangulation, Suture Repair.

INTRODUCTION

Spigelian hernia, a rare form of ventral abdominal wall hernia, presents a unique challenge in both diagnosis and management. Named after Adriaan van den Spiegel, a 17th-century Flemish anatomist, these hernias occur through the Spigelian aponeurosis, which is defined as the aponeurosis of the transversus abdominus muscle located between the lateral edge of the rectus muscle and the linea semilunaris[1].

The incidence of Spigelian hernias is estimated to be 0.1-2% of all abdominal hernias, making them a rare entity in surgical practice[1]. Their clinical presentation can be deceptive, often manifesting as vague abdominal pain without a visible or palpable lump, leading to potential delays in diagnosis[2]. The majority of these hernias occur distal to the umbilicus within a belt lying 6 cm cranial to the interspinal plane, adopting a characteristic T- or mushroom-shaped appearance as they expand into the space between the internal and external oblique muscles[2].

The importance of prompt diagnosis and management of Spigelian hernias cannot be overstated, given their propensity for incarceration and strangulation. Studies have reported an incarceration rate of 24-27% and a strangulation rate of 2-14%[3]. These statistics underscore the need for surgical intervention upon diagnosis, as the fibrous bands of the Spigelian fascia form a rigid neck, increasing the risk of complications[4].

Recent advances in surgical techniques have expanded the treatment options for Spigelian hernias. While traditionally repaired through open surgery, laparoscopic approaches have gained popularity in recent years. The transabdominal preperitoneal (TAPP) approach, in particular, has shown promise in restoring anatomy and preventing complications such as seroma formation[5-7].

This case report aims to contribute to the growing body of literature on Spigelian hernias by presenting a unique case and reviewing current management strategies. By doing so, we hope to enhance awareness of this rare condition among clinicians and highlight the importance of considering Spigelian hernias in the differential diagnosis of atypical abdominal pain or swelling.

Case Presentation

A 65-year-old female patient presented to the emergency department with abdominal swelling since 1year, abdominal pain & vomiting since 1 week. She is a housewife from middle class family, had a significant obstetric history of five full-term vaginal deliveries and a previous open tubectomy. On admission, her vital signs were stable with pulse rate of 76 bpm, blood pressure of 140/80 mmHg, respiratory rate of 19 cpm, temperature of 96.1°F, and SpO2 of 97% on room air. Physical examination revealed an abdominal swelling 10 x 10cm in right lumbar &right iliac fossa in spigelian belt. A non-reducible globular swelling was palpated, exhibiting a positive cough impulse. Based on these findings, a provisional diagnosis of right irreducible Spigelian hernia was made. Preoperative imaging studies were performed. CT abdomen with contrast revealed a 4.8x4.5cm defect in the right spigelian belt containing distal ileal loops, caecum, ascending colon, and omentum. The bowel loops showed significant wall thickening measuring 8mm at maximum with reduced enhancement pattern, suggesting early ischemic changes. Multiple sub-centimetric lymph nodes and free fluid with surrounding fat stranding were noted in the hernial sac. Ultrasonography confirmed the herniation of omentum and small bowel loops through the anterior abdominal wall lateral to right rectus muscle, with mild free fluid around the hernial sac. Laboratory investigations showed mild anemia with a hemoglobin of 10.9 g/dL and leukocytosis (TLC: 16,010/mm3). Liver function tests and serum electrolytes were within normal limits. Given the evidence of early ischemic changes, the patient was taken to the operating room on 26/10/24 for urgent surgical intervention. Under spinal anesthesia, with aseptic precautions a transverse incision was made over the swelling. Intraoperative findings revealed a right obstructed incarcerated spigelian hernia containing transverse colon, caecum, ascending colon, inflammed appendix, omentum. The surgical team performed adhesiolysis, reduction of hernial contents after incising the constricting agent, appendectomy & suture repair with prolene number 1. The procedure lasted 2.5 hours with an estimated blood loss of 350 ml. Postoperatively, the patient was managed with nil by mouth, intravenous fluids, antibiotics, analgesics, and antiemetics. The postoperative course was uneventful, and the patient was discharged in stable condition without any complications.

This case highlights the importance of considering Spigelian hernia in the differential diagnosis of atypical abdominal swellings, especially in elderly females, and the critical role of imaging in identifying complications requiring urgent surgical intervention.

DISCUSSION

Rarity and Anatomical Basis of Spigelian Hernias

Spigelian hernias are rare, accounting for only 0.1-2% of all abdominal wall hernias[8-9]. They occur through the Spigelian aponeurosis, which is defined as the aponeurosis of the transversus abdominus muscle located between the lateral edge of the rectus muscle and the linea semilunaris[8]. Most Spigelian hernias occur distal to the umbilicus within a belt lying 6 cm cranial to the interspinal plane, known as the "Spigelian hernia belt"[8]. The unique anatomical location, with a small hernia orifice within the rigid Spigelian aponeurosis, contributes to the difficulty in diagnosis and the increased risk of incarceration.

Diagnostic Challenges and Clinical Suspicion

The diagnosis of Spigelian hernias can be challenging due to their often vague and nonspecific presentation[9]. Patients may present with abdominal pain or a palpable mass, but in many cases, the hernia is masked by the intact external oblique aponeurosis and abdominal fat[10]. In our case, the patient presented with abdominal pain and vomiting, which could have been attributed to various abdominal conditions. This underscores the importance of maintaining a high index of clinical suspicion for Spigelian hernias, especially in patients with atypical abdominal pain or swelling.

Role of Imaging in Diagnosis Role of Imaging in Spigelian Hernia Diagnosis

Radiological evaluation plays a pivotal role in the diagnosis and surgical planning of Spigelian hernias. In our case, the multimodality imaging approach provided comprehensive anatomical and pathological information essential for management decisions.

CT Findings and Clinical Correlation Contrast-enhanced CT demonstrated a 4.8x4.5cm defect in the right para umbilical region, consistent with the classical location of Spigelian hernias described in literature. The herniated contents included distal ileal loops, caecum, and ascending colon, representing a more complex presentation compared to the typically reported omental or small bowel herniation. The presence of bowel wall thickening measuring 8mm with reduced enhancement pattern indicated early ischemic changes, a finding that correlates with Skandalakis et al.'s reported 21-33% incidence of complications in Spigelian hernias [1].

Ultrasonographic Features

Ultrasound examination revealed herniation of omentum and small bowel loops through the anterior abdominal wall lateral to the right rectus muscle, supporting Spangen's classical description of the anatomical location of Spigelian hernias4. The presence of mild free fluid around the hernial sac on both CT and ultrasound suggested early inflammatory changes, a finding that Larson and Farley identified as a predictor of potential complications[2].

Imaging-Guided Surgical Decision Making

The radiological findings directly influenced the surgical approach: 1. The size of the defect (4.8x4.5cm) exceeded the 2cm threshold described by Moreno-Egea et al. for considering open surgical repair[5] 2. The presence of bowel wall thickening with hypo enhancement aligned with Weber's criteria for urgent surgical intervention[6] 3. The identification of multiple sub-centimetric lymph nodes and free fluid supported Mittal's observations regarding inflammatory changes requiring immediate attention[3]. The complementary nature of CT and ultrasound imaging in our case demonstrates the value of a multimodality approach in preoperative planning, as emphasized in contemporary surgical literature. The precise anatomical delineation and identification of complications through imaging proved crucial in optimizing surgical outcomes.

Surgical Management Options

The treatment of Spigelian hernias is primarily surgical due to the high risk of incarceration and strangulation[9]. In this case, the surgical team opted for an open approach with, herniotomy, omentectomy, appendectomy and herniorrhaphy. While laparoscopic techniques, such as the transabdominal preperitoneal (TAPP) approach, have gained popularity due to their minimally invasive nature and potential for reduced postoperative complications[8], the open approach was likely chosen due to the size of the hernia and the suspected presence of incarcerated bowel.

Unusual Finding of Appendicitis

The intraoperative discovery of appendicitis within the hernia sac is an unusual and noteworthy finding. This complication highlights the potential for serious sequelae in Spigelian hernias and underscores the importance of prompt surgical intervention. The presence of appendicitis likely contributed to the patient's presenting symptoms and justified the decision to perform an appendectomy during the hernia repair.

Post-operative Care and Potential Complications

Post-operative management in this case included standard measures such as nil per os, intravenous fluids, and a regimen of antibiotics and analgesics. The placement of a drain and close monitoring of drain output were prudent steps to detect any potential complications early. Potential complications following Spigelian hernia repair include seroma formation, wound infection, and recurrence. The patient's uneventful post-operative course and discharge after 10 days suggest a successful outcome, but long-term follow-up would be necessary to assess for any recurrence.

CONCLUSION

The successful outcome in this case, with an uneventful postoperative course, demonstrates the effectiveness of prompt diagnosis and appropriate surgical management in addressing this challenging condition. This case highlights the importance of considering Spigelian hernia in the differential diagnosis of atypical abdominal pain or swelling, the value of prompt surgical intervention, and the potential for unexpected intraoperative findings such as appendicitis within the hernia sac. This case report serves to enhance awareness among clinicians about the varied presentations of Spigelian hernias and the importance of a multidisciplinary approach involving radiologists and surgeons in their management. It also emphasizes the need for ongoing research and case documentation to further refine diagnostic and treatment strategies for this uncommon but potentially serious abdominal wall defect.

Future Directions

The documentation of such cases contributes significantly to the medical knowledge base, particularly given the condition's rarity and potential for concurrent pathologies. This understanding aids in developing more refined diagnostic protocols and surgical approaches for managing these complex abdominal wall defects.

REFERENCES

1. Skandalakis PN, Zoras O, Skandalakis JE, Mirilas P. Spigelian hernia: surgical anatomy, embryology, and technique of repair. Am Surg. 2006;72(1):42–8. Available from: http://dx.doi.org/ 10.1177/000313480607200110
2. Larson DW, Farley DR. Spigelian hernias: repair and outcome for 81 patients. World J Surg. 2002;26(10):1277–81. Available from: http://dx.doi.org/10.1007/s00268-002-6605-0
3. Mittal T, Kumar V, Khullar R. Diagnosis and management of Spigelian hernia: A review of literature and our experience. J Minim Access Surg. 2008;4(4):95–8.
4. Spangen L. Spigelian hernia. World J Surg. 1989;13(5):573–80. Available from: http://dx.doi.org/ 10.1007/bf01658873
5. Moreno-Egea A, Carrasco L, Girela E, Martín J-G, Aguayo JL, Canteras M. Open vs laparoscopic repair of spigelian hernia: a prospective randomized trial. Arch Surg. 2002;137(11):1266–8. Available from: http://dx.doi.org/10.1001/archsurg.137.11.1266
6. Webber V, Low C, Skipworth RJE, Kumar S, de Beaux AC, Tulloh B. Contemporary thoughts on the management of Spigelian hernia. Hernia. 2017;21(3):355–61. Available from: http://dx.doi.org/10.1007/ s10029-017-1579-x
7. Moreno-Egea A, Campillo-Soto Á, Morales-Cuenca G. Which should be the gold standard laparoscopic technique for handling Spigelian hernias? Surg Endosc. 2015;29(4):856–62. Available from: http:// dx.doi.org/10.1007/s00464-014-3738-9
8. Rankin A, Kostusiak M, Sokker A. Spigelian hernia: Case series and review of the literature. Visc Med. 2019;35(2):133–6. Available from: http://dx.doi.org/10.1159/000494280
9. Haji Rahman R, Punjwani A, Notario-Ringwald J, Taneja S, Fahim S, Varghese R, et al. Non-strangulated spigelian hernia: A case report. Cureus. 2022; Available from: http://dx.doi.org/10.7759/ cureus.27699
10. Bell D, Desai P. Spigelian hernia. In: Radiopaedia.org. Radiopaedia.org; 2009.