

Occult Spigelian Hernia Diagnosed on CT Imaging: A Rare Case Report

Kishore Shankar^{1*}, Dhivya Kumar², A. Selwyn J. Kumar³, Abishek Kumar Ashok Kumar⁴, Sahasyaa Adalarasan⁴

Spigelian hernia is a rare ventral abdominal wall hernia that often presents a diagnostic challenge because of its interparietal location and absence of obvious external swelling. We report the case of a 75-year-old male who presented with a reducible right iliac fossa swelling that increased on straining. Clinical findings were subtle, and contrast-enhanced CT imaging revealed a Spigelian hernia containing omental fat with associated fat stranding and early inflammatory changes. The patient underwent successful open onlay mesh repair with an uneventful postoperative recovery. This case underlines the role of CT imaging in accurately diagnosing Spigelian hernia and guiding timely surgical management.

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Introduction

A Spigelian hernia is a rare type of ventral hernia that occurs through a defect in the Spigelian fascia, which lies along the semilunar line lateral to the rectus abdominis muscle.¹ This clinical entity was first described by Josef Klinkosch in 1764 and was later named after the Belgian anatomist Adriaan van den Spiegel for his contributions to the anatomical description of the semilunar line.² Spigelian hernias account for approximately 0.5 to 2% of all abdominal wall hernias.³

Risk factors associated with their development include obesity, chronic cough, chronic straining, advanced age, multiple pregnancies, and conditions causing raised intra-abdominal pressure. Although uncommon, the number of reported cases has increased in recent years,

likely due to improved imaging techniques such as ultrasonography and CT scans, along with increased clinical awareness.⁴ These hernias are often difficult to diagnose clinically because patients may not present with a clear visible swelling owing to their interparietal location.⁵ As a result, many cases are easily missed on routine physical examination.

Because of the narrow fascial defect, Spigelian hernias carry a relatively high risk of incarceration compared to other ventral hernias, making early diagnosis and surgical management important.⁶ Here, we report a case of Spigelian hernia in an elderly male diagnosed on CT imaging and managed surgically.

Case Presentation

A 75-year-old male presented with a swelling in the right iliac fossa for one month. The swelling was more noticeable on exertion and straining and would reduce on rest. There were no complaints of pain, abdominal distension, vomiting, constipation or fever. The patient did not report any previous abdominal surgeries.

On abdominal examination, a mild, ill-defined swelling was noted in the right lower abdomen, which became more prominent on straining. However, the clinical findings were inconclusive, and a definite diagnosis could not be made based on examination alone.

¹Postgraduate, Institute of General Surgery, Madras Medical College and Rajiv Gandhi Government General Hospital, Chennai, Tamil Nadu, India

²Assistant Professor, Institute of General Surgery, Madras Medical College and Rajiv Gandhi Government General Hospital, Chennai, Tamil Nadu, India

³Professor, Institute of General Surgery, Madras Medical College and Rajiv Gandhi Government General Hospital, Chennai, Tamil Nadu, India

⁴Medical Student, Institute of General Surgery, Madras Medical College and Rajiv Gandhi Government General Hospital, Chennai, Tamil Nadu, India

Correspondence to: Kishore Shankar, Postgraduate, Institute of General Surgery, Madras Medical College and Rajiv Gandhi Government General Hospital, Chennai, Tamil Nadu, India. E-mail: mksmkk@gmail.com

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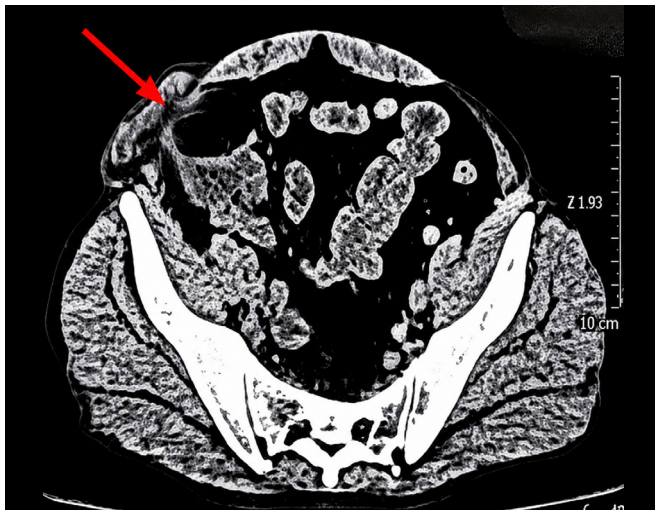


Fig. 1: Contrast-enhanced axial CT image of the abdomen showing a focal anterior abdominal wall defect in the right lower quadrant lateral to the rectus abdominis muscle, with herniation of omental fat through the Spigelian fascia (red arrow), consistent with Spigelian hernia

Other systemic examinations were unremarkable, and the patient's vital signs were within normal limits.

Routine hematological and biochemical investigations were within normal limits. A CT scan of the abdomen was performed for further evaluation. The CT scan showed a focal anterior abdominal wall opening measuring approximately 2.5×2.5 cm in the right lower quadrant, lateral to the rectus abdominis muscle. Herniation of omental fat was seen through the defect. There was associated fat stranding within the hernial sac along with minimal fluid collection. Focal mesenteric fat stranding with thin linear bands was also noted in the right iliac fossa, suggesting early inflammatory changes.

Based on these findings, a diagnosis of Spigelian hernia was made, and the patient was taken up for surgical repair.

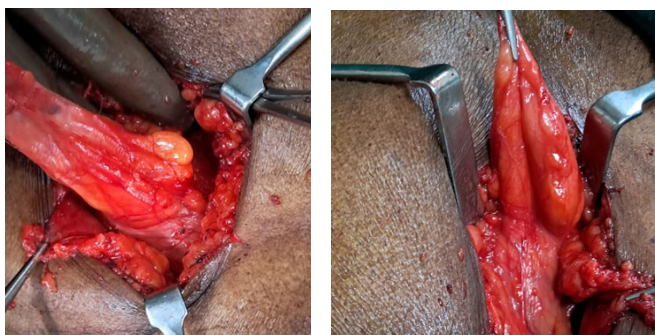


Fig. 2: Intraoperative images showing the Spigelian hernia sac arising through a weakness in the Spigelian fascia. Herniated omental fat is seen protruding through the fascial defect during surgical exploration and repair

Intraoperatively, a hernial sac was identified at the lateral border of the rectus abdominis. The defect, measuring approximately 1.5×1.5 cm, was located in the Spigelian fascia (Fig 2). The contents of the sac consisted of omentum.

The wall opening was closed primarily, and reinforcement was done using an open onlay meshplasty. The postoperative period was uneventful, and the patient recovered well.

Discussion

The Spigelian hernia is a rare type of ventral abdominal wall hernia that occurs through a defect in the Spigelian fascia. This fascia represents the aponeurotic layer situated between the rectus abdominis muscle medially and the semilunar line laterally, extending from the ninth rib to the pubic tubercle on both sides.^[7] Most Spigelian hernias occur at or below the level of the arcuate line, an anatomical landmark located approximately midway between the umbilicus and pubic symphysis, where the posterior rectus sheath ends. Below this level, the posterior aspect of the rectus muscle is supported only by the transversalis fascia and peritoneum, making the abdominal wall relatively weaker. In addition, the arrangement and transition of aponeurotic fibers in this region create a natural zone of weakness, predisposing to herniation.¹

Factors causing increased intra-abdominal pressure, such as obesity, chronic cough, straining, and advanced age, may further contribute to the development of the hernia.⁴

In Spigelian hernia, the hernial sac passes through the Spigelian fascia but often remains confined between the layers of the abdominal wall, giving it an interparietal nature. As the hernia does not always protrude into the subcutaneous tissue, patients may not present with an obvious visible swelling, making clinical diagnosis difficult.⁸ It has been reported that up to 50% of Spigelian hernias may be missed on clinical examination alone.⁷

Imaging remains the primary diagnostic modality for Spigelian hernia. CT scan is particularly useful as it clearly demonstrates the defect in the abdominal wall, the contents of the hernia, and any associated complications.^[5] Omentum is reported as the most common herniated content, followed by small bowel and colon.^[1] In the present case, CT findings of omental herniation with fat stranding suggested early inflammatory changes, which supported the decision for early surgical intervention.

Spigelian hernias are known to have a relatively high risk of incarceration, reported in up to 27% of cases.³ This is mainly due to the small size of the fascial

defect, which can easily trap herniated contents. For this reason, surgical repair is generally recommended once the diagnosis is made, even in patients who are minimally symptomatic.⁴ Some surgeons advocate diagnostic laparoscopy in suspected cases, as it remains highly sensitive in the assessment and confirmation of Spigelian hernias.⁶

Both open and laparoscopic approaches are used for repair. According to current European Hernia Society guidelines, there is no clear superiority of one technique over the other, and the choice largely depends on the surgeon's experience and the clinical scenario.⁹ Three laparoscopic techniques have been reported in literature: intraperitoneal onlay mesh (IPOM), transabdominal preperitoneal (TAPP), and total extraperitoneal (TEP).¹⁰ However, the use of mesh has been shown to reduce recurrence rates. In open onlay meshplasty, the hernial defect is first closed primarily, following which a prosthetic mesh is placed over the anterior rectus sheath/aponeurosis and fixed in position to reinforce the abdominal wall and reduce tension on the repair.¹¹ Laparoscopic repairs have reported recurrence rates as low as around 2–3%, while higher recurrence rates have been noted in some open repairs without mesh.³

In the present case, an open approach with onlay meshplasty was chosen and resulted in a good postoperative outcome without complications.

Conclusion

Timely diagnosis of Spigelian hernia remains difficult because of its vague clinical presentation and the absence of an obvious swelling in many patients. The interparietal nature of the hernia often contributes to delayed or missed diagnosis. Imaging modalities, especially CT scan, are therefore essential for accurate diagnosis, identification of hernial contents, and assessment of complications such as incarceration or inflammatory changes. Although patients may present with minimal symptoms, Spigelian hernias possess a relatively high risk of incarceration owing to the narrow fascial defect. Early surgical management is therefore recommended once the diagnosis is established. Both open and laparoscopic

approaches have shown good outcomes when combined with mesh reinforcement.

In the present case, CT imaging aided early diagnosis, and open onlay meshplasty resulted in a successful postoperative recovery without complications, emphasizing the importance of clinical suspicion, appropriate imaging, and timely operative intervention.

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