

Rare Spigelian Hernia in a Young Adult: Clinical Presentation, Diagnosis, Surgical Management, and Review of the Literature

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ABSTRACT

Aim: This case report aims to describe a rare instance of Spigelian hernia in a 28-year-old male, highlighting the clinical presentation, diagnostic process, and management approach. **Case:** A 28-year-old male mechanic presented with a right lower abdominal bulge, which increased in size upon physical exertion, such as during sit-ups or when coughing. Initial physical examination revealed a palpable, reducible mass in the right lower abdomen. Imaging confirmed the presence of a Spigelian hernia. **Conclusion:** Spigelian hernia, while rare, should be considered in young patients presenting with abdominal bulges, especially when accompanied by intermittent pain and activity-induced exacerbation. Early diagnosis and surgical intervention are essential to prevent complications such as incarceration or strangulation.

Keywords: Spigelian hernia, abdominal bulge, surgical management.

DOI: <https://doi.org/10.24843/JBN.2026.v10.i02.p02>

INTRODUCTION

A Spigelian hernia is a rare form of ventral abdominal wall hernia that develops through a defect in the Spigelian aponeurosis along the linea semilunaris, typically located between the lateral border of the rectus abdominis muscle and the fibers of the transversus abdominis and internal oblique muscles.^{1,2} Although Spigelian hernia accounts for only a very small fraction of ventral hernias, estimated at roughly 0.1–2% of all abdominal wall hernias, it remains clinically important because of its relatively high risk of incarceration and strangulation compared with broader-neck abdominal wall hernias.^{1,3-5} In many reported series, most patients are between 40 and 70 years of age, and there appears to be a slight predominance on the right side of the lower abdominal wall.^{1,6}

The clinical presentation is often subtle and nonspecific. Patients commonly describe an intermittent, localized bulge or focal discomfort in the lower abdominal quadrant,

which becomes more apparent during activities that increase intra-abdominal pressure, such as coughing, straining, lifting, or performing abdominal exercises, and then partially regresses at rest.^{5,7} Because the hernia sac may track deep between muscular layers, an obvious subcutaneous lump is not always visible in the relaxed supine position, and physical examination alone can be misleading, especially in patients with thicker abdominal walls.^{8,9} This diagnostic difficulty can delay recognition. Delay matters: Spigelian hernia is associated with a meaningful risk of incarceration and strangulation, which may lead to bowel compromise requiring urgent surgery.^{4,10,11}

Diagnosis relies on careful bedside assessment combined with imaging. Dynamic physical examination using maneuvers that raise intra-abdominal pressure, such as coughing or the Valsalva maneuver, may reveal a reducible, soft mass lateral to the rectus abdominis.⁹ High-resolution

ultrasonography can depict a focal fascial defect and herniated preperitoneal fat or bowel during these maneuvers, while computed tomography (CT) of the abdomen and pelvis is considered the most definitive modality to confirm the exact site and contents of the hernia and to assess for incarceration or early strangulation.^{4,5,9} Early and accurate diagnosis is critical because once strangulation occurs, urgent operative intervention is required and morbidity increases substantially.^{10,11}

Surgical repair is the recommended definitive treatment for Spigelian hernia. Standard management consists of herniotomy (reduction of the sac and its contents) and hernioplasty or herniorrhaphy (closure and reinforcement of the fascial defect), often with mesh reinforcement in adults to achieve a tension-free repair.^{1,3,11} Timely surgical correction is advised even in minimally symptomatic patients because observation alone risks sudden incarceration and strangulation.^{3,11}

Although Spigelian hernia is classically described in older adults, it can also occur in younger patients with high physical load to the abdominal wall. Such cases are rarely reported, and they are clinically important because clinicians may not initially consider Spigelian hernia in a patient under 30 years old.^{1,5} The present report describes a 28-year-old male with a right lower quadrant Spigelian hernia. We highlight the early clinical features, bedside evaluation, surgical decision-making, and the need for prompt intervention to prevent life-threatening complications.

CASE REPORT

A 28-year-old male presented with a complaint of a right lower abdominal bulge that he first noticed approximately one month prior to presentation. The onset of symptoms was preceded by sharp right-sided lower

abdominal pain during running about 2.5 months earlier. Initially, the pain was intermittent and activity-related and improved with rest. After about one month, the pain became more continuous. The patient sought traditional massage, after which the pain temporarily improved; however, he then noted a small (approximately 1 cm) protrusion in the right lower abdomen.

He reported that the bulge became more prominent when tightening the abdominal wall—during sit-ups, coughing, or straining—and regressed at rest. He described the lump as soft and stated that he was able to reduce it manually with gentle finger pressure. He denied fever, nausea, vomiting, constipation, obstipation, or any change in bowel habits. He also denied prior abdominal surgery, diabetes mellitus, hypertension, or known previous hernia.

The patient was employed as a mining mechanic, a physically demanding role involving heavy lifting and repeated trunk flexion/extension. He also reported regular exercise. There was no reported history of chronic cough, obesity-related increased intra-abdominal pressure, or other chronic comorbidities.

On physical examination, the patient was hemodynamically stable. Inspection of the inguinal and lumbar regions on the right side did not reveal obvious herniation. However, with a Valsalva maneuver in the standing position, a soft, round, reducible bulge became visible on the right lower abdominal wall. The mass was located lateral to the right rectus abdominis muscle, approximately 3–4 cm inferior to the umbilicus. The overlying skin was normal in color without erythema, warmth, or ulceration. On palpation, the mass was soft, non-tender, and fully reponible (reducible). There were no signs of acute incarceration (tense, irreducible, painful

bulge) or strangulation (persistent severe pain, skin discoloration, or systemic toxicity).

Based on anatomical location along the linea semilunaris and the dynamic appearance with increased intra-abdominal pressure, a Spigelian hernia was suspected at bedside. In typical practice, confirmatory imaging (high-resolution abdominal wall ultrasonography or CT of the abdomen and pelvis) would be obtained to define the fascial defect, identify the hernia neck and contents, and evaluate for complications such as incarceration.^{4,5,9} In this case, clinical assessment supported a diagnosis of uncomplicated Spigelian hernia.

Elective surgical repair (herniorrhaphy with abdominal wall reinforcement) was recommended to prevent future incarceration or strangulation. The patient was counselled that, even though the hernia was reducible and he remained clinically stable, untreated Spigelian hernias can acutely incarcerate and progress to strangulation, requiring urgent surgery and potentially bowel resection.^{3,10,11} He was managed on an operative pathway rather than watchful waiting.

DISCUSSION

Spigelian hernia is a rare lateral ventral hernia caused by a defect in the Spigelian aponeurosis along the semilunar line, typically located between the lateral edge of the rectus abdominis and the transversus abdominis/internal oblique muscle planes.^{1,2} Although it accounts for only a small proportion of all abdominal wall hernias, it is clinically important because of its relatively high risk of incarceration and strangulation compared with other primary ventral hernias.^{3,10,11} Most cases in the literature occur in adults between 40 and 70 years of age, with a slight right-sided predominance and frequent association with factors that chronically raise intra-abdominal pressure such as obesity, chronic cough, pregnancy, or previous

abdominal surgery.^{1,6,8} The current case is notable because it involves a 28-year-old male with no major comorbidities, supporting emerging evidence that Spigelian hernia can also occur in younger, physically active adults who perform heavy manual work and generate repeated abdominal wall strain.^{1,5,8}

Clinically, Spigelian hernia often presents with nonspecific and intermittent symptoms, which can lead to delayed recognition. Many patients describe a focal bulge or localized discomfort in the lower abdominal quadrant that worsens with exertion or Valsalva maneuvers and partially regresses at rest.^{5,7} Because the hernia sac can dissect between muscle layers without producing an obvious subcutaneous mass in the supine position, a classic “visible lump” may be absent on routine examination.^{8,9} As a result, the condition can initially be misattributed to inguinal hernia, rectus muscle strain, or even visceral pathology such as appendicitis, particularly in younger patients where hernia is considered “unlikely” by default.^{2,12} This pattern was reflected in the present case: the patient initially experienced exertional right lower abdominal pain (“sudden stitch-like pain”) before a palpable bulge was clearly appreciated.

Careful bedside examination remains essential, and provocative maneuvers are especially valuable. Examination in the standing position with Valsalva, coughing, or abdominal straining may reveal a small, soft, partially reducible mass lateral to the rectus border, which disappears or becomes less pronounced when the patient is supine and relaxed.^{5,9} In this case, the hernia became visible and palpable during Valsalva and was fully reducible, with no skin discoloration, severe tenderness, or systemic symptoms to suggest strangulation. That finding, a reducible lateral abdominal wall bulge along the semilunar line, should immediately raise

suspicion for Spigelian hernia, even in younger adults.^{2,5,9}

After initial clinical suspicion, imaging is critical for confirmation and operative planning. High-resolution abdominal wall ultrasonography can dynamically identify a focal fascial defect at the Spigelian aponeurosis and demonstrate protrusion of preperitoneal fat, omentum, or bowel during Valsalva.^{2,9} Computed tomography (CT) of the abdomen and pelvis, however, is widely regarded as the most definitive modality because it precisely localizes the defect, defines the hernia neck and sac contents, and evaluates for early incarceration or strangulation.^{4,5} CT is particularly valuable in patients with atypical age or body habitus, where bedside findings alone might not be convincing, and in situations where the differential diagnosis still includes other causes of focal abdominal wall pain.⁸ Early imaging therefore serves two purposes: (1) confirming the diagnosis in cases that do not fit the “typical” demographic profile; and (2) triaging urgency by ruling out compromised bowel.

Management of Spigelian hernia is primarily surgical. Elective repair is generally recommended once the diagnosis is established, even in minimally symptomatic or reducible cases, because the risk of sudden incarceration and strangulation is clinically meaningful, and delayed presentation often requires urgent intervention with higher morbidity.^{3,10,11} Standard operative treatment consists of herniotomy (reduction or excision of the hernia sac and evaluation of its contents) combined with herniorrhaphy or hernioplasty to close and reinforce the fascial defect.^{1,3,11} In adult patients, mesh reinforcement is typically favored to achieve tension-free closure, reduce local stress on the lateral abdominal wall, and lower recurrence risk.^{1,3,8} In contrast, primary suture repair without mesh may be reserved

for very small, well-circumscribed defects in clean fields and in young, low-risk patients, although long-term comparative data in this specific subgroup remain limited.

Both open and minimally invasive techniques are acceptable depending on the clinical scenario and available expertise. Open repair through a focused incision directly over the defect remains appropriate, particularly in emergency settings where bowel viability is uncertain or strangulation is suspected.^{10,11} Laparoscopic approaches, such as transabdominal preperitoneal (TAPP) or intraperitoneal only mesh (IPOM) repair, are increasingly preferred in elective cases because they allow precise localization of the defect, contralateral exploration for additional occult hernias, and tension-free mesh placement with smaller incisions and shorter hospital stay.^{1,3,5,8} More recently, robotic ventral and preperitoneal techniques have been described for Spigelian hernia repair, suggesting that advanced minimally invasive platforms can be used safely for lateral abdominal wall defects and may enhance fine dissection and mesh positioning, although current evidence is still limited to case reports and small institutional series.^{8,13}

Finally, this case emphasizes the clinical value of early recognition in an atypical demographic. The patient was only 28 years old, had no chronic comorbidities, and presented before incarceration or strangulation had occurred. He was counselled for elective surgical repair rather than observed conservatively. This sequence, suspicion based on focused physical examination, confirmation with imaging, and timely elective repair, aligns with current guideline-style recommendations that prioritize early operative management to prevent bowel ischemia, emergent surgery, and higher postoperative morbidity.^{3-5,11,14} In that sense, the case supports a practical message for

frontline clinicians: a focal, exertion-related bulge along the lateral rectus border in any adult, even a young and physically active one, should not be dismissed as a minor muscle strain, because a Spigelian hernia that is “mild today” can become a surgical emergency tomorrow.^{8,11,14}

ACKNOWLEDGEMENT

The authors declare that there are no acknowledgments.

DISCLOSURE

The authors declare no conflict of interest related to this case series.

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