

(CASE REPORT)



## Male Patient having a Spigelian Hernia, Prince Osman Digna Referral Hospital, Port Sudan City, Red Sea State, Sudan; 2024: A Case Report

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### Abstract

**Background:** Spigelian hernia is a rare type of abdominal hernias; it occurs through a defect in Spigelian aponeurosis of transverse abdominis (Spiegel's fascia).

**Methods:** A 65 years old male, presented to our refer clinic at Prince Osman Digna Referral Hospital; Port Sudan City; Red Sea State; Sudan, on July 2024, complaining of lower abdominal swelling for 2 months without features of obstruction or strangulation; following heavy lifting, obvious during standing and walking, disappear when lying down; and was not associated with gastrointestinal track disturbances. Patient had history of recurrent repaired right inguinal hernia, para-umbilical hernia, and transurethral resection prostatectomy for Benign Prostatic Hyperplasia. No family history of similar conditions.

**Result:** Abdominal examination showed: positive visible cough impulse revealed reducible mass at the left lower abdomen, oval in shape about 15\*15cm, without features of peritonism. CT abdomen showed: left lower lateral abdominal wall hernia defect lateral to the rectus abdominis muscle measuring (3\*3.7 cm) with hernia sac lie between the external and internal oblique muscles containing bowel loops. Patient diagnosed as Spigelian hernia and planned for mesh hernioplasty. Intra-operative findings revealed: the hernia sac passed through the internal oblique and transverse abdominis muscles, it contained sigmoid colon which released smoothly, sac excised, external oblique aponeurosis sutured by nylon 2, prolene mesh fix onlay, no intraoperative complications. Post-operative course was smooth.

**Conclusion and recommendations:** Spigelian hernia has to be suspected among patients having repeated abdominal hernias. Early diagnosis using CT Abdomen and urgent surgical intervention for such cases were highly recommended.

**Keywords:** Spigelian Hernia; Spiegel's Fascia; Spigelian Belt; CT abdomen with contrast; Sudan

### 1. Introduction

Spigelian hernia is a rare type of abdominal hernias, account for 1-2% of all abdominal hernias; the true incidence still unknown as many of the patients remain asymptomatic. Its first described by the Flemish anatomist Josef Klinkosh in 1764, but named after the Belgian anatomist Adrian van der Spiegel who first described the semilunar line in 1645. It

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occurs through a defect in the Spigelian aponeurosis of the transverse abdominis (Spiegel's fascia); it is bounded medially by the rectus abdominis muscle and laterally by the Linea semilunaris which represents the transition of the transversus abdominis muscle to its aponeurotic tendon marking the specific position for this hernia type. Usually in this type of hernia the external oblique layer remains intact. It usually affects age group between 40-70 years and more frequently in females. The female-to male ratio is 2:1. Ninety percent of Spigelian hernia found within specific area known as the Spigelian belt; which extends 6 cm across the lower quadrant of the abdomen as the posterior sheath is deficient. The hernia ring is well defined defect in the transverse aponeurosis [1-14].

Spigelian hernia can be congenital as in pediatric or acquired as it can result from the iatrogenic trauma of laparoscopic trocars and abdominal drains [5, 6, 14]. The clinical presentations of Spigelian hernia are variable: it can be asymptomatic in 90% of patients, or the patients may present with nonspecific abdominal discomfort, abdominal pain, palpable mass and without management it can lead ~~into~~ to serious complications such as; strangulation of the herniated segments which account for 24% due to the small size of the hernia's neck and the sharp fascial margins around the defect. That is why the diagnosis should be too early and precisely [1, 3, 5, 7-10, 12, 14].

The most common cause of Spigelian hernia is chronic abdominal wall weakness, but it is associated with many risk factors that can be; congenital ~~and~~ or acquired ~~factors~~, including: elevated intra-abdominal pressure, obesity, persistent cough, ~~and~~ multiparous women, abdominal trauma and incisions, advancing age, smoking, ~~also as well as people with~~ connective tissue disorders such as Ehlers Danlos syndrome, ~~also~~ and chronic comorbidities like: diabetes, peripheral vascular disease, chronic obstructive pulmonary disease, cerebrovascular disease, and myocardial infarction. Spigelian hernias are common before and after liver transplantation, as cirrhosis associated with increase intra-abdominal pressure and sarcopenia [1, 2, 3, 5, 10, 13, 15].

Ultrasound and CT abdomen is the diagnostic tools of choice but the best and most reliable tool to diagnose the Spigelian hernia is CT abdomen with contrast [1, 4, 8, 9, 10, 12, 14]. Diagnostic laparoscopy can be a tool of assessment if the imaging is unremarkable but there is high clinical suspicion [10]. The diagnosis of Spigelian hernia could be difficult if the hernia is covered by abdominal fat and the aponeurosis of the external oblique, also the defect may not be detected in the absence of abdominal content herniation, therefore decrease the sensitivity of radiological investigations [3, 6, 10].

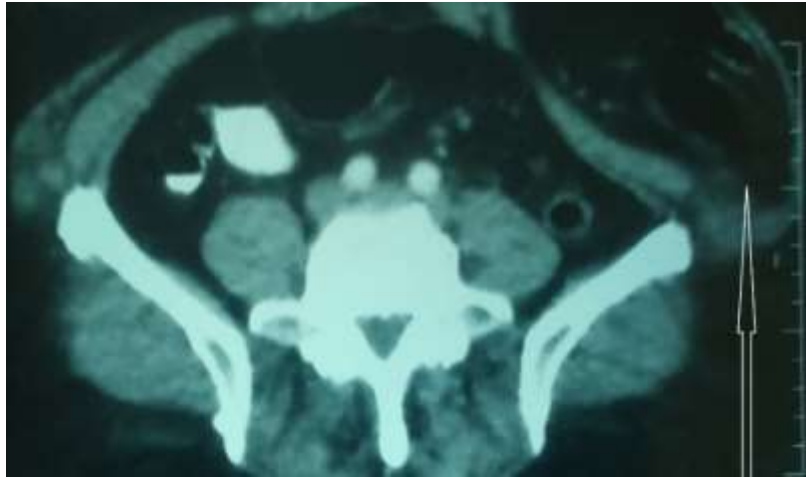
The gold standard treatment is surgery; either open or laparoscopic methods. The open method either by primary suture repair or placing mesh. Laparoscopic method associated with direct visualization of the defect, shorter hospital stay and low morbidity and it's preferable for the repair of large Spigelian hernia [2-6, 9, 14].

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## 2. Case Presentation

Sixty-five years old male, not diabetic or hypertensive, retired army soldier, presented to our refer clinic at Prince Osman Digna Referral Hospital; Port Sudan city; Red Sea State on July 2024, complaining of lower abdominal swelling for 2 months. The condition started 2 months ago as patient developed left lower abdominal swelling noticed by the patient himself when he takes heavy lifting, the swelling is not increased in size, and it is more obvious when patient stand or walk and disappear when he laid down, the condition wasn't associated with abdominal pain, vomiting, nausea or diarrhea, no melena or hematochezia. The patient had history of chronic constipation, no dysphagia orodynophagia, no history of yellowish discoloration of sclera or skin, no history of weight loss. Patient had history of heavy lifting, no history of asthma, COPD, or steroids use, no history of collagen diseases. Patient had history of right inguinal hernia underwent hernia repair at 2020. On 2021 patient diagnosed with Benign Prostatic Hyperplasia underwent TURP with para-umbilical hernia repair in the same session. Then on 2023 he underwent hernia repair for recurrent right inguinal hernia, no family history of chronic illness or similar conditions. Patient on 5 $\alpha$ -reductase inhibitor for treatment of Benign Prostatic Hyperplasia. Examination: The abdomen of normal contour, free flanks, with midline and right inguinal surgical scars, there was positive visible cough impulse revealed reducible mass at the left lower abdomen, oval in shape about 15\*15 cm, no skin discoloration, and no area of tenderness or rigidity. Investigation: CBC: WBC 4.9\*10<sup>3</sup>, Hb: 11.7 g/dl. Plt: 296\*10<sup>3</sup>, RFT+ electrolytes: Blood Urea: 34 mg/dl. Serum Creatinine: 0.7 mg/dl, Na: 140 mg/dl, K: 3.3 mEq/l, viral screening for HBV, HCV, and HIV was negative. Abdominal ultrasound showed: left lower abdominal hernia, CT abdomen showed: left lower lateral abdominal wall hernia defect lateral to the rectus abdominis muscle measuring (3\*3.7 cm) with the hernia sac lie between the external and internal oblique muscles containing bowel loops (Figure 1). Patient diagnosed as Spigelian Hernia and planned for mesh hernioplasty. Intra-operative findings: Through left paramedian incision; abdomen was accessed, subcutaneous tissues dissected, the external oblique aponeurosis was incised and opened revealed the hernia sac which passed through the internal oblique and transverse abdominis muscles, hernia sac found containing sigmoid colon, with mild adhesion, adhesiolysis done, sigmoid colon released smoothly (Figure 2), sac excised, muscles approximated, external oblique aponeurosis sutured by nylon 2, prolene mesh

fix onlay, surgical drain inserted, no intraoperative complications. Post-operative course was smooth, drain was removed and patient came to the refer clinic 2 weeks later on good condition.



**Figure 1** CT abdomen show: left lower abdominal Spigelian hernia; (white arrow), Prince Osman Digna Referral Hospital, Red Sea State, Sudan; 2024



**Figure 2** Spigelian Hernia; the hernia sac contains Sigmoid Colon; (black arrow), Prince Osman Digna Referral Hospital, Red Sea State, Sudan; 2024

### 3. Discussion

Spigelian hernia is a rare form of ventral abdominal wall hernias, account for 1-2% of all abdominal hernias, it common between fifth and seventh decades of life [1]. This case represents Spigelian hernia in 65 years old patient, with history of abdominal incisions, which is similar to many studies [1, 2]. Spigelian hernia commonly occurs in females unlike our case [1, 2, 6, 7]. Most of Spigelian hernia found within specific area known as the Spigelian belt, which spans 6 cm across the lower quadrant of the abdomen like our case which present with left lower abdominal swelling adjacent to the rectus muscle [1, 5]. Regarding risk factors our case has history of elevated intra-abdominal pressure, this is similar to what mentioned globally [1, 2, 3, 10]. The hernia sac usually contains the greater omentum, but also can involve the small bowel, colon, ovaries and testes, like our case the intraoperative findings show: hernia sac containing sigmoid colon protruded through a defect in the transverse abdominis and internal oblique aponeurosis, while external oblique layer remains intact [4, 10]. Our case diagnosed by abdominal U\S and CT abdomen and underwent surgery through mesh repair which is typical to the global reports [3, 4, 5, 6, 9, 10, 12, 14]. In such cases we recommended early diagnosis using CT Abdomen and urgent surgical intervention as it is associated with high risk of obstruction and strangulation

#### 4. Conclusion

Spigelian hernia had to be suspected among patients having repeated abdominal hernias. Early diagnosis using CT abdomen and urgent surgical intervention for such cases was highly recommended; as it was associated with high risk of obstruction and strangulation.

#### Compliance with ethical standards

##### *Disclosure of Conflict of interest*

There is no conflict of interest.

##### *Statement of ethical approval*

The article describes a case report. Therefore, no permission from ethical committee was required. Informed consent was obtained from the patient for publication of this case report.

##### *Statement of informed consent*

Informed consent was obtained from the patient for publication of this case report and accompanying images.

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