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# Laparoscopic Repair of Spigelian Hernia: A Rare Presentation

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**Abstract:** ***Spigelian hernia is uncommon, which frequently presents with features of intestinal obstruction. Clinical diagnosis is usually difficult in patients without any obvious abdominal mass and a computed tomography scan is very helpful in making a diagnosis. We report a case of 74 year old male retired officer who presented with a swelling in the left lower abdomen which became painful and prominent on standing and on exertion. There was a strong suspicion of spigelian hernia clinically and CECT abdomen was done to confirm the diagnosis. Pre-operative workup was done and patient was successfully managed surgically.***

**Keywords:** Hernia, Abdominal pain, obstruction, spigelian hernia, cect whole abdomen, laparoscopic mesh repair

## 1. Introduction

Spigelian hernias are named after Adriaen Van den Spigehel, an anatomist from Belgium who described the fascial defects associated with this condition [1]. They are also called spontaneous lateral ventral hernias, hernia of the semilunar line, or hernias through the conjoint tendon. The incidence is approximately 2% of abdominal wall hernias with a slightly higher occurrence in the female sex and can be congenital or acquired [2].

Spigelian hernias are thought to result from fascial weakness related to perforating vessels. Some authorities suggested that up to 50% of these hernias result from previous abdominal operations that weaken the semilunar line prompting herniation [3]. Factors that may lead to increased tension on the abdominal wall aponeurosis or increase intra-abdominal pressure, such as straining due to bladder outlet obstruction, chronic cough, obesity or multiple pregnancies are also believed to predispose patients to the development of Spigelian hernia. A viscous, lipoma or omentum may be a leading point which gradually results in herniation [4].

A high index of suspicion is required to make diagnosis of this rare entity. Abdominal ultrasonography is useful while Computerized Tomography (CT) scan of the abdomen with contrast has become the best imaging method in confirming the diagnosis especially when in doubt [5].

Spigelian hernia requires surgical repair to prevent strangulation while those presenting with complications need immediate surgery. We report a case of 74 year old male retired officer who presented with a swelling in the left lower abdomen which became painful and prominent on standing and on exertion.

**Figure 1:** Patient presented with swelling in left lower abdomen

## 2. Case Report

We report a case of 74 year old male retired officer who presented with swelling in left lower abdomen which became painful and prominent on standing and on exertion. There was no abdominal distension or fever. He had no history of recurrent abdominal pains, abdominal swelling or previous surgery. Examination revealed a middle aged man in no painful or respiratory distress. He was afebrile, anicteric and not pale or dehydrated. His pulse rate was 80 beats per minute regular and of good volume. Blood pressure was normal while temperature was 37 °Celsius. A Non-tender mass measuring about 8 cm by 5 cm was present in the left lower abdomen. Bowel sounds were normal and there were no signs of intestinal obstruction. Abdominal ultrasonography was done has been successful in the diagnosis of palpable and nonpalpable spigelian hernias. Findings on an ultrasound examination that suggest the presence of a spigelian hernia include visualization of a complex mass within the layers of the anterior abdominal wall. In particular, mesentery and omentum will appear

echogenic, and air-filled bowel will result in shadowing. There was strong suspicion of spigelian hernia clinically and cect abdomen was done to confirm the diagnosis. Patient was worked up and taken up for laparoscopic repair under general anaesthesia. A vertical supraumbilical incision was made approximately 5 cm superior to the umbilicus, and intraperitoneal access was gained with a Veress needle. The abdomen was insufflated with carbon dioxide to a pressure of 15 mm Hg. A 10-mm, 30-degree laparoscope was inserted into the abdomen, and immediately upon entry a small cleft-like defect in left lower abdomen. Intraoperative findings were omentum was found as hernial sac content which was reduced from the sac and redundant sac was excised and peritoneal flaps were raised. Prolene mesh was placed extraperitoneally and peritoneum closed. Postoperative period was uneventful and was discharged in stable condition.

**Figure 2:** CECT whole abdomen showing defect in left lower abdomen

**Figure 3:** hernial defect found Intraoperatively

**Figure 4:** Defect closed with prolene suture

**Figure 5:** Prolene mesh placed over the defect

## 3. Discussion

Spigelian hernia is a rare type of ventral abdominal wall hernia which occur secondary to a defect in the transversus abdominis muscle and rectus sheath aponeurosis allowing abdominal contents to herniate through the linea semilunaris. It often starts as a protrusion of pre-peritoneal fat through the hernia ring, a well-defined defect in the Spigelian aponeurosis at the “Spigelian hernia” belt. This is the widest part of the aponeurosis where 85–90% of the hernias occur and lies between 0 and 6 cm cephalad to the inter-spinous plane [4].

Herniation of contents is very rarely seen above the umbilicus because the semilunar line is supported by the aponeurosis of the external oblique on the anterior aspect and posteriorly in the cranial two thirds by the transversus abdominis muscle which is muscular almost to the midline in the upper abdomen. Hernial sac is found in most of the cases and contents are commonly greater omentum, as in present case or it could be a part of small intestine or part of the colon. Rare contents of the sac include acutely inflamed appendix, Crohn’s appendicitis and an incarcerated Meckel’s Diverticulum. Bilateral Spigelian hernias and Richter type of Spigelian hernia have also been reported [4, 5]. Such type of hernias have also being reported following laparoscopic procedure, through a pre-existing fascial weakness, that became obvious as a result of the pneumoperitonem [7]. In our case middle aged male presented with presented with swelling in left lower abdomen which became painful and prominent on standing and on exertion. Patient was worked up and taken up for laparoscopic repair under general anaesthesia. Intraoperative findings were omentum was found as hernial sac content which was reduced from the sac and redundant sac was excised and peritoneal flaps were raised. Prolene mesh was placed extraperitoneally and peritoneum closed. Postoperative period was uneventful.

The presenting symptoms are commonly abdominal pain, an intermittent swelling in the anterior abdominal wall or signs of intestinal obstruction [8]. It is reported that about 21% may present with small bowel incarceration [9]. Pre-operative clinical diagnosis is possible in patients with palpable mass along the Spigelian aponeurosis, Cect whole abdomen helps in making diagnosis however, this may be difficult in those presenting with non-specific abdominal pain and have no visible or palpable mass due to reduction

of hernia sac content or presence of intramural or inter parietal hernia [4, 9]. This condition may mimic other lesions in the abdominal wall such as rectus sheath hematoma following injury, post surgery seroma, or parietal abscess, lipoma, peritoneal tumour implants and pseudocyst at the end of the ventriculoperitoneal shunts [4]. It is reported that only 50% of cases are diagnosed pre-operatively [10].

Plain abdominal X-rays are not specific and can only show features of bowel obstruction in those presenting with intestinal obstruction. Presently, abdomen and pelvis CT scanning with contrast is the best and most reliable method to make the diagnosis. Immediate surgical repair is recommended for spigelian hernia to prevent subsequent strangulation while those presenting with bowel obstruction will require emergency surgery. Open or laparoscopic approach could be employed depending on experience and availability of laparoscopy facilities. Laparoscopic Hernioplasty, by use of synthetic mesh or fascia lata graft to achieve tension free repair, was later adopted for the repair of spigelian hernia [13, 14]. Synthetic mesh repair is, however, not recommended in emergency situations with contaminated field following strangulation. Laparoscopic approach has been widely utilised in both elective and emergency repair of the hernia using intra-peritoneal onlay mesh (IPOM), trans-abdominal pre-peritoneal (TAPP) and total extra-peritoneal (TEP) techniques [10]. It offers faster recovery and lower morbidity [5]. Preperitoneal laparoscopic repair is suitable for Spligenian hernia because the defect in the aponeurosis is better identified in the preperitoneal plane. The use of laparoscopy is currently gaining ground in developing economy. This method may be adopted in subsequent repair especially in uncomplicated cases. Barie, Thompson, and Mack described a planned laparoscopic repair of a spigelian hernia using a composite prosthesis. [15]

## 4. Conclusion

Spigelian hernias are not common and clinical diagnosis requires a high index of suspicion. Strangulation is common and occurs in about a quarter. Imaging studies, especially CT may aid pre-operative diagnosis. Recently, minimally invasive surgical techniques have been applied to the diagnosis, localization, and laparoscopic mesh repair of spigelian hernias. Surgery is the main modality of treatment and laparoscopic approach is used where facilities and expertise for laparoscopy are available. Laparoscopic Tension free repair with mesh is recommended. However, in cases with strangulation where use of mesh may not be advisable or where mesh is not readily available.

## References

[1] Spangen L. Spigelian hernia. *Surg. Clin. North Am.1*984; **64**: 351–366.
[2] Weiss J., Lernan O. Z., Nilson S. Spigelian hernia. *Ann. Surg.1*974; **180**: 836–839.
[3] Baucom C., Nguyen Q. D., Hidalgo M., Slakey D. Minimally invasive Spigelian hernia repair. *JSLS.2*009; **13**: 263–268.
[4] Sahoo P. K., Rout S. S. Spigelian hernia: an unusual abdominal hernia: a case report and review of literature. *Int. J. Sci. Rep.2*015; **1** (5): 239–242.
[5] Foster D., Nagarajan S., Panait L. Richter-type Spigelian hernia: a case report and review of the literature. *Int. J. Surg. Case Rep.2*015; **6C**: 160–162. Epub 2014 Dec 11.
[6] Agha R. A., Fowler A. J., Saetta A., Barai I., Rajmohan S., Orgill D. P., for the SCARE Group The SCARE statement: consensus-based surgical case report guidelines. *Int. J. Surg.*
[7] Raveenthiran V., Pichumani S. Richter's hernia in spigelian hernia. *Indian J. Gastroenterol.2*000; **19**: 36–37.
[8] Srivastava K. N., Agarwal A. Spigelian hernia: a diagnostic dilemma and laparoscopic management. *Indian J. Surg.2*015; **77** (April (Suppl.1)): 35–37. Epub 2014 May 6.
[9] Brahmbhatt D., Fogler R. Colonic obstruction secondary to incarcerated spigelian hernia: report of a case. *Dis. Colon Rectum.1*990; **33** (305): 307
[10] Mittal T., Kumar V., Khullar R., Sharma A., Soni V., Baijal M., Chowbey P. K. Diagnosis and management of spigelian hernia: a review of literature and our experience. *J. Minim. Access Surg.2*008; **4** (4): 95–98.
[11] Xu L., Dulku G., Ho R. A rare presentation of Spigelian hernia involving the appendix. *Eur. J. Radiol. Open.2*017; **9** (November (4)): 141–143.
[12] Campos S. M., Walden T. Images in clinical medicine: spigelian hernia. *N. Engl. J. Med.1*997; **336**: 1149.
[13] Moreno-Egea Flores B., Girela E., Martin J. G., Aguayo J. L., Canteras M. Spigelian hernia: bibliographical study and presentation of a series of 28 patients. *Hernia.2*002; **6**: 167–170.
[14] Celdrán A., Señaris J., Mañas J., Frieyro O. The open mesh repair of Spigelian hernia. *Am. J. Surg.2*007; **193** (January (1)): 111–113
[15] Barie P, Thompson WA, Mack CA. Planned laparoscopic repair of a spigelian hernia using a composite prosthesis. *J Laparoendosc Surg*.1994; 4: 359–363