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Case Report

HERNIA OF SEMILUNAR LINE (SPIGELIAN HERNIA) – A SURGICAL RARITY, NOT MERELY A PSYCHOSOMATIC DISORDER

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ABSTRACT

A Spigelian hernia occurs through a slit-like defect in the anterior abdominal wall lateral to the rectus abdominis muscle at the semilunar line in the lower quadrant of the abdomen where the posterior sheath is deficient. Due to atypical, vague, and widespread signs and symptomology, the diagnosis is always a challenging issue misleading for surgeons. Thus, a logical and high sense of suspicion is the need of the hour for diagnosing it at the early possible time, with the most common location of the lump being in the semilunar line. Once diagnosed, management is operative or else complications such as incarceration and strangulation are not uncommon. Surgical management may be conventional open or minimally invasive laparoscopic depending on the availability of expertise. We present a case of a Spigelian hernia in a lady who presented with intermittent pain in the left side of the lower abdomen for the past 8 years and was being treated symptomatically at various hospitals after being diagnosed with psychosomatic pain. She was diagnosed at our center and managed by laparoscopic mesh repair.

Keywords: Spigelian hernia, Semilunar line, Strangulation.

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INTRODUCTION

Spigelian hernia is an uncommon surgical entity with abdominal wall defect in transversus abdominis aponeurosis that occurs at the linea semilunaris just lateral to the muscle belly of the rectus abdominis. The term "Spigelian hernia" is named after Adrian Van der Spiegel, an anatomist, who was a practicing surgeon in Italy, who first described the semilunar line (lineaspigeli) in 1645. The transition zone of the transversus abdominis muscle, i.e., fleshy muscle belly and avascular aponeurotic part, is marked by the Spigelian line. The aponeurosis that exists between this line and the lateral end of the rectus muscle forms Spigelian aponeurosis. It is through this aponeurosis that Spigelian hernias can herniate out, and more specifically, it occurs in the region called "Spigelian belt," which is above the line joining the two anterior superior iliac spines and extending proximally about 6 cm. Within this area, Spigelian hernias occur most commonly above the inferior epigastric vessels. This may be found caudal and medial to the inferior epigastric vessels, i.e., through the Hesselbach's triangle, and herniation through this region is referred to as "low Spigelian hernias," which clinically mimics direct inguinal hernia [1], a common entity in surgical practice. It was in 1764 that Klinkosch described first about Spigelian hernia [2]. Scoping reported the first case in the pediatric age group in 1935, which is known as a "spontaneous lateral ventral hernia" or "hernia of the semilunar line." Its incidence is variable and quoted range in the literature is 0.1–2% [3-5]. Most commonly, it occurs on the right side and has a slight predilection for females (ratio: 4:3). The etiopathogenesis of Spigelian hernias is not very clear and is considered to be multifactorial, with a considerable contribution of congenital and acquired factors. Among the acquired factors, a history of prior surgery is seen in a sizable proportion of patients comprising approximately 50% of Spigelian hernias. Apart from the sigmoid colon, appendix, and cecum, it is the small intestine and omentum which forms the usual contents of this Spigelian hernia [6,7]. Foster *et al*., in their reporting, describes a unique type of Spigelian hernia which was called the Richter type. It is generally difficult to clinch the diagnosis due to their interparietal location and variable presentation with vague and nonspecific symptoms; however, with the advent of advanced radiological armamentarium, it is relatively easy now, but clinician has to have a high index of clinical suspicion for this rare entity. Once diagnosed, operative management is the mainstay of treatment, which may be open or laparoscopic. In a minimally invasive technique, transabdominal preperitoneal (TAPP) mesh repair is the preferred approach [8-11]. A review of the literature also suggests another unique approach described as total extraperitoneal mesh repair (TEP) through the laparoscopic route [12,13]. This approach has the additional advantage of being minimally invasive, and there is no need to enter the peritoneal cavity, and hence, the complications associated with violation of the peritoneal cavity are also avoided. The laparoscopic method is better using less hospital stay, less morbidity, less pain, and cosmetically scars less surgery. One prospective randomized controlled trial compared the two methods of repair, i.e., conventional versus laparoscopic with a small but reasonably comparable sample size. This trial showed drastic benefits with respect to morbidity and stay in hospital in the laparoscopic group compared to the conventional method with 11 cases in both groups [14].

CASE PRESENTATION

We report, herein, a case of a 49-year-old female with a history of lower segment cesarean section 20 years back, presented to our surgical division with dull intermittent severe pain on the left lower quadrant of the abdomen for the past 8 years, for which she consulted many hospitals but her problem did not resolve. There was no associated constipation, vomiting, or urinary symptom. The patient was misdiagnosed as having psychosomatic pain as her clinical examination was grossly unremarkable whenever she visited the hospital. As she narrated her treatment history, she was in tears as she had been told to be a psychiatric patient with some chronic mental illness. On examination, a doubtful facial defect was felt 3.5 cm below the umbilicus adjacent to the right semilunar line border. No obvious lump or cough impulse is appreciated. On investigation, hemogram, liver function tests, blood urea, and creatinine were normal. On ultrasonography of the abdomen, there was a defect of about 2.5 cm × 1.5 cm at the lateral margin of the right rectus muscle. CT scan of the abdomen and pelvis revealed a defect in the transversus abdominis aponeurosis with small foci/pocket of air protruding through it suggestive of a herniated bowel loop and omentum, suggestive of Spigelian hernia (Fig. 1). After adequate preparation, the patient was planned for elective transabdominal preperitoneal (TAPP) hernia repair. Intraoperatively, a 3 cm × 1.5 cm defect was seen in the peritoneum, along the lateral margin of the

rectus abdomens muscle on the right side (Fig. 2). The omentum loosely adhered to the defect, which was reduced using sharp and blunt dissection with the help of scissors; Maryland and cautery loosely adherent omentum to the defect was reduced, and there were no bowel loops. After dissection of the adhesions with the help of Maryland and cautery, a polypropylene mesh of 7.5 × 7.5 cm size, tailored as per the defect size to cover the defect size completely (with covering the sufficient surroundings), was introduced into the peritoneal cavity and was fixed with the help of tacks to cover the defect (Fig. 2). A full laparoscopic exploration of the abdominal wall was done, which was unremarkable. Postoperative recovery was uneventful, and the patient was discharged on the 10th postoperative day after suture removal. Our patient did not report any abdominal discomfort, features suggestive of intestinal obstruction, or recurrence for 2 years of regular follow-up.

DISCUSSION

Out of all surgical hernias, Spigelian hernia, being a rare entity, constitutes about 0.12–0.2% prevalence. It occurs through a defect in the Spigelian aponeurosis at linea semilunaris just lateral to the muscle belly of the rectus abdominis. A Spigelian hernia occurs usually during 40–70 years of age, which may be acquired or congenital with delayed presentation, usually unilateral, and is more commonly seen in women [15]. The most accepted theory regarding the pathogenesis of a Spigelian hernia is that the perforating vessels piercing the Spigelian fascia weaken it, and gradually a small lipomatous tissue enters here which later turns out to be a hernia. Although there are various risk factors also which contribute to the predisposition of this hernia, which includes overstretching of the abdomen during pregnancy, especially twins and obesity, and weakening of the abdominal wall due to multiple surgeries and scarring. Chronic kidney disease patients undergoing chronic ambulatory peritoneal dialysis (CAPD) also develop Spigelian hernia as a complication [16]. Due to the lack of specific clinical signs and symptoms of this surgical rarity, the preoperative diagnosis is often difficult. Given the rarity of Spigelian hernias and lack of private clinical experience, the diagnosis often remains elusive for years with only half of the cases being diagnosed preoperatively due to frequent confusion and misdiagnosing with seroma, abscess of the abdominal wall, and hematoma in the rectus sheath. The natural course or progress of Spigelian hernias is quite unpredictable ranging from the occasional asymptomatic or slightly painful lump to a high risk of obstruction or strangulation due to a sharp fascial margin around the defect. For this reason, operative management should be advised in all patients. Broadly, the repair of a Spigelian hernia can be done with a laparoscopic approach and with conventional open laparotomy. With the advancement in technology and increased specifications and skill, the laparoscopic method with minimum invasion has become the most acceptable method. In the literature review, we could find out few case reports/series which have been reported across the world, with 87 articles and 232 cases in 20 years [17]. It was in 1992, the first Spigelian hernia was operated on by Carter and Mizes using laparoscopy [8]. Both types of surgeries were evaluated by randomized controlled studies, wherein the laparoscopic procedure had the advantage of lesser hospital stay and reduced morbidity when compared to the conventional method. The approach can be intraperitoneal or extraperitoneal. Both have their pros and cons [18].

Fig. 1: CT scan showing Spigelian hernia

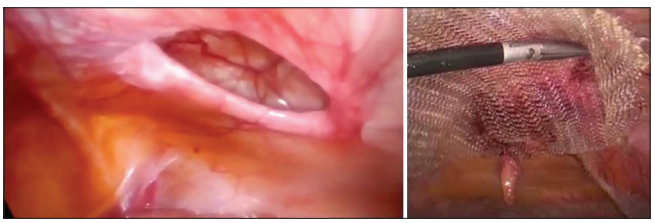

Fig. 2: Intraoperative laparoscopic view and mesh repair of Spigelian hernia

Mittal *et al*. reported 10 cases. 8 out of 10 presented with abdominal pain, and the rest were asymptomatic. 6 were diagnosed clinically, and 4 required CT scans and USG. Rankin A reported 33 cases in 12 years with female predominance and a mean age of 67 years. 13 had undergone emergency surgery, while 20 of them were electively done. 6 underwent laparoscopic and 27 open repairs. None of the patients recurred. In a literature review, most of the surgeons used the following approaches: IPOM (intraperitoneal onlay mesh – 36%), TAPP (transabdominal preperitoneal – 22%), TEP (totally extraperitoneal – 30%), and TAPE (transabdominal extraperitoneal – 3%) in order of decreasing frequencies [17].

CONCLUSION

Spigelian hernia, a rare surgical entity, often poses a diagnostic dilemma to surgeons due to its obscure presentation. Many label it as psychosomatic pain and refer it for psychiatric evaluation, disregarding the patient's complaints. Radiological assistance ultrasonography or multislice CT scan is of great help in establishing the diagnosis. Surgical management (open or laparoscopic) is prudent. Although not very common, prone to complications.

PATIENT CONSENT

A patient consent statement has been taken for publishing this article.

CONFLICTS OF INTERESTS

The authors declared no conflicts of interest.

REFERENCES

1. Spangen L. Spigelian hernia. World J Surg 1989;13:573-80. doi: 10.1007/BF01658873, PMID 2683401
2. Pinna A, Cossu ML, Paliogiannis P, Ginesu GC, Fancellu A, Porcu A. Spigelian hernia A series of cases and literature review. Ann Ital Chir 2016;87:306-11. PMID 27682445
3. De la Hermosa AR, Prats IA, Liendo PM, Noboa FN, Calero AM. Spigelian hernia. Personal experience and review of the literature. Rev Esp Enferm Dig 2010;102:583-6. doi: 10.4321/s1130-01082010001000003, PMID 21039066
4. Takayama S, Imafuji H, Funahashi H, Takeyama H. Laparoscopic spigelian and inguinal hernia repair with the Kugel patch. Surg Laparosc Endosc Percutan Tech 2010;20:e76-8. doi: 10.1097/SLE.0b013e3181d68d4b, PMID 20393327
5. Webber V, Low C, Skipworth RJ, Kumar S, De Beaux AC, Tulloh B. Contemporary thoughts on the management of Spigelian hernia. Hernia 2017;21:355-61. doi: 10.1007/s10029-017-1579-x, PMID 28097450
6. Alberton Y, Shapira Y, Hadas-Halpern I. Richter's hernia strangulated in a spigelian hernia: Ultrasonic diagnosis. J Clin Ultrasound 1994;22:503-5.
7. Miller R, Lifschitz O, Mavor E. Incarcerated Spigelian hernia mimicking obstructing colon carcinoma. Hernia 2008;12:87-9. doi: 10.1007/s10029-007-0217-4, PMID 17406786

8. Carter JE, Mizes C. Laparoscopic diagnosis and repair of spigelian hernia: Report of case and technique. Am J Obstet Gynecol 1992;167:77-8. doi: 10.1016/s0002-9378(11)91630-5, PMID 1442961
9. Chowbey PK, Sharma A, Khullar R, Mann V, Baijal M, Vashistha A. Laparoscopic ventral hernia repair. J Laparoendosc Adv Surg Tech A 2000;10:79-84.
10. Gedeban TM, Neubauer W. Laparoscopic repair of bilateral spigelian and inguinal hernias. Surg Endosc 1998;12:142-7.
11. Kasirajan K, Lopez J, Lopez R. Laparoscopic technique in the management of Spigelian hernia. J Laparoendosc Adv Surg Tech A 1997;7:385-8. doi: 10.1089/lap.1997.7.385, PMID 9449090
12. Tarnoff M, Rosen M, Brody F. Planned totally extraperitoneal laparoscopic Spigelian hernia repair. Surg Endosc 2002;16:359. doi: 10.1007/s00464-001-4126-9, PMID 11967699
13. Moreno-Egea A, Aguayo JL, Girela E. Treatment of spigelian hernia using totally extraperitoneal laparoscopy ambulatory surgery. Surg Endosc 2002;16:1806. doi: 10.1007/s00464-002-0016-z, PMID 12232651
14. Moreno-Egea A, Carrasco L, Girela E, Martín JG, Aguayo JL, Canteras M. Open vs laparoscopic repair of Spigelian hernia: A prospective randomized trial. Arch Surg 2002;137:1266-8. doi: 10.1001/archsurg.137.11.1266, PMID 12413315
15. Weiss Y, Lernau OZ, Nissan S. Spigelian hernia. Ann Surg 1974;180:836-9. doi: 10.1097/00000658-197412000-00007, PMID 4433168
16. Engeset J, Youngson GG. Ambulatory peritoneal dialysis and hernial complications. Surg Clin North Am 1984;64:385-92. doi: 10.1016/s0039-6109(16)43292-5, PMID 6233738
17. Rankin A, Kostusiak M, Sokker A. Spigelian hernia: Case series and review of the literature. Visc Med 2019;35:133-6. doi: 10.1159/000494280, PMID 31192247
18. Mittal T, Kumar V, Khullar R, Sharma A, Soni V, Baijal M, *et al*. Diagnosis and management of Spigelian hernia: A review of literature and our experience. J Minim Access Surg 2008;4:95-8. doi: 10.4103/0972-9941.45204, PMID 19547696