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Case Report

Spigelian hernia - an unusual abdominal hernia: a case report and review of literature

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ABSTRACT

Spigelian hernias are rare abdominal wall defects that occur at the semilunar line lateral to the rectus abdominis muscle. They are situated between the muscular layers of the abdominal wall and can be easily overlooked because of abdominal obesity. Generally difficult to diagnose because of their location and vague non-specific symptoms radiographic studies have been beneficial in confirming the diagnosis. The diagnosis has been considerably aided by the introduction of ultrasonography and Computed Tomography (CT). Once the diagnosis is made operative management is indicated due to chances of incarceration. We report a 48 years old patient from the IMS and SUM hospital, Bhubaneswar, Odisha, India who presented with colicky lower abdominal pain associated with a non-tender swelling above and lateral to the left inguinal canal. A diagnosis of Spigelian hernia was made and confirmed on exploration. The hernia was reduced and the defect repaired. His recovery was uneventful.

Keywords: Spigelian, Hernia, Lateral ventral hernias

INTRODUCTION

Spigelian hernias are partial abdominal wall defects named after Adriaen Van den Spigehel, an anatomist from Belgium who described the fascial defects associated with this rare hernia.[1] Spigelian hernias are also referred to as spontaneous lateral ventral hernias, hernia of the semilunar line, or hernias through the conjoint tendon. Earlier delineation of lateral ventral hernias (Spigelian hernias) from other ventral hernias was noted in 1748 by Chause.[2] However, it was not until 1764 that Klinklosh recognized that Spigelian hernias were not secondary to trauma but can occur spontaneously.[3] Spigelian hernias represent approximately 2% of abdominal wall hernias with a slightly higher incidence in the female sex. Spigelian hernia can be congenital or acquired.[4] Perforating vessels may weaken the area in spigelian fascia and a small lipoma or fat enters here which gradually leads to hernia formation.

The etiology of Spigelian hernias is thought to be the result of fascial weakness associated with perforating vessels. Others suggest that previous abdominal operations produce weakening of the semilunar line, thus predisposing patients to the development of Spigelian hernias. Processes that cause increased tension on the abdominal wall aponeurosis such as straining due to prostate enlargement, chronic cough, multiple pregnancies or obesity, are thought to predispose patients to the development of Spigelian hernia.

Diagnosis of Spigelian hernias requires a high degree of suspicion, with the most common finding on physical exams being a painful mass at the semilunar line. A Computerized Tomography (CT) scan of the abdomen is useful in confirming the diagnosis. Once diagnosed, Spigelian hernias require operative repair.

CASE REPORT

A 48 years old male patient presented to us with history of colicky abdominal pain since 3 days associated with nausea and a palpable lump at the left lower quadrant of the abdomen since last 2 years. The lump in the left lower quadrant of the abdomen was initially small in size to start with but over the period of two years gradually increased to attain the present size. He denied any disturbances in his bowel habits. He had similar complaints 8 months back, which resolved spontaneously. This time on examination a 5 x 4 cm well delineated swelling above and lateral to the left inguinal canal was palpable. It was subcutaneous, firm, non-tender. The lump would increase on coughing and decrease in lying position. Abdominal muscle tone was good. His routine investigations were within normal range. X-ray abdomen did not show any airfluid levels to suggest intestinal obstruction. The abdominal ultrasonography report suggested an abdominal wall defect of size 3.5 cm in the left iliac fossa with bowel and omental contents. After adequate preparation he was explored, under spinal anaesthesia by a tranverse incision over the swelling and a defect was found along the lateral border of rectus sheath with the external oblique aponeurosis intact over it (Figure 1). The defect was about 3 cm x 3 cm and was through the musculoaponeurotic sheath of the internal oblique and transverse abdominis muscle. There was herniation of sigmoid colon (Figure 2), which was viable and healthy. The defect was repaired with prolene 1/0 suture, and wall was strengthened by applying prolene (ultra pro) mesh (Figure 3). Postoperatively the patient had an uneventful recovery.

Figure 1: Lateral border of rectus sheath with the external oblique aponeurosis.

Figure 2: Colon as content of hernia after opening of sac.

Figure 3: Mesh repair.

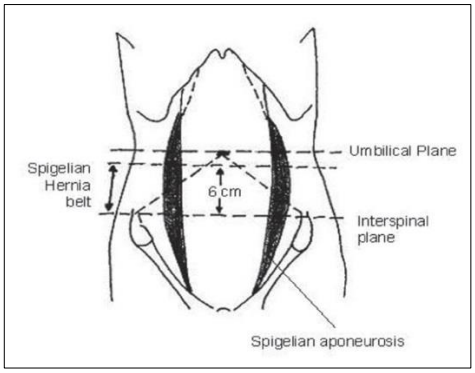

Figure 4: Site of Spigelian hernia belt.

DISCUSSION

Spigelian hernia is a rare ventral hernia. Clinical examination is the mainstay of diagnosis. In its earliest form it is simply a protrusion of preperitoneal fat through the Spigelian aponeurosis. The Spigelian aponeurosis is widest between 0 and 6 cm cranial to the interspinous plane and 85-90% of the hernias occur within this "spigelian hernia" belt (Figure 4). The hernial ring is a well-defined defect in the aponeurosis. Spigelian line marks the transition from muscle to aponeurosis in the transverses abdominis muscle of the abdomen. It is a lateral convex line between the costal arch and the pubic tubercle. The part of the aponeurosis that lies between the semilunar line and lateral border of the rectus muscle is called the Spigelian fascia or zone. Anteriorly throughout its length, the semilunar line is reinforced by the aponeurosis of the external oblique. Posteriorly in the cephaled two thirds it is reinforced by the transversus abdominis muscle which is muscular almost to the midline in the upper abdomen. This support prevents herniation and hence very rare above the umbilicus. The hernia can also be part of an extra peritoneal organ, but a peritoneal sac is found in most cases. If the peritoneal sac has content, it is usually greater omentum, small intestine, or part of the colon. Spigelian hernias are rarely known to contain an acutely inflamed appendix, Crohn's appendicitis, even an incarcerated Meckel's Diverticulum.[5] Bilateral Spigelian hernias are rare. Richter type of Spigelian hernia has also been reported. Such type of hernias have also being reported following laparoscopic procedure, through a pre-existing fascial

weakness, that became manifested as a result of the pneumoperitonem.[6]

The symptoms that cause a patient to consult a physician are usually abdominal pain, a mass in the anterior abdominal wall or signs of incarceration with or without intestinal obstruction. The pain varies in type, severity and location depending on the content of the hernia. Pain can often be provoked or aggravated by maneuvers that increase intraabdominal pressure and is relieved by rest. If the hernia produces a palpable mass along the Spigelian aponeurosis the diagnosis is generally easy to make provided the possibility of this hernia is considered. Patients, who do have pain, but have no visible or palpable mass present the greatest difficulty in diagnosis. This condition exists when the hernia sac content is reduced at the time of examination or when a small interparietal hernia cannot be detected on palpation.

Physical examination should be carried out while the patient alternately tenses and relaxes the abdominal muscles. When the abdominal muscles are tensed all patients with Spigelian hernias have a tender spot over the hernial orifice in the Spigelian aponeurosis. On palpation the hernia is pressed against the ring which is firm when the intra-abdominal pressure is raised. This finding is not pathognomonic of Spigelian hernia but offers a useful method for screening. Plain abdominal X-rays are not particularly sensitive in diagnosing Spigelian hernias. This hernia is uncommon and clinical diagnosis can be difficult. The appearance of the lesion is comparable with others in and around the abdominal wall, including rectus sheath hematoma, seroma, parietal abscess,[7] lipoma, peritoneal tumor implants and pseudocyst at the end of the ventriculoperitoneal shunts.

Clinical and sonographic differentiation is emphasized. Ultrasonic scanning of the semilumar line should be undertaken in all patients with obscure abdominal pain associated with bulging of the belly wall in the standing patient. The advantages of real time ultrasonography is the ability to perform examination in both supine and upright positions and while patient performs a Valsalva maneuver. Ultrasonic scanning being rapid, accurate, non-invasive and easy to perform is now a valuable diagnostic tool in both palpable and non-palpable Spigelian hernias. Now CT scanning with close thin sections is considered the most reliable technique to make the diagnosis in doubtful cases.[8] The use of oral contrast medium during the examination is recommended so that any bowel content can be identified. The increasing availability of the Magnetic Resonance Imaging (MRI) may be of benefit in the preoperative evaluation of these difficult cases.

A Spigelian hernia may be confused with a lipoma or a parietal abscess. Spigelian hernia should be treated by surgical repair because of the risk of strangulation. Surgery can be performed either by open technique or by laparoscopically. Spangen recommended simple closure of the defect in the form of herniorraphy.[1] Nozoe et al.[9] performed a simple hernioplasty by suturing the internal oblique and transversus muscles to the rectus sheath. Development of mesh and concept of tension free application to other hernias by Liechtenstein led to its use by many for Spigelian hernias. Tension free fascia lata graft[2] or mesh repair is also employed for the repair of Spigelian hernias.

The advent of laparoscopy has made these conventional approaches old-fashioned in experienced hands.[10] Carter and Mizes performed first intraabdominal laparoscopic repair of spigelian hernia in 1992.[11] Spigelian hernias are ideally suited to preperitoneal laparoscopic repair because the defect in the Spigelian aponeurosis is more clearly identified in the preperitoneal plane. The best results are offered by the extra peritoneal laparoscopic approach. There have also been case reports of management of Spigelian hernia by total extraperitoneal approach.[12,13] The advantage of extraperitoneal placement of mesh is that Prolene mesh can be used, which decreases the cost of procedure, also, incidence of complications like intestinal obstruction and fistulization of bowel is expected to decrease (which can occur with intraperitoneal placement of mesh. As compared to transabdominal extraperitoneal approach, the TEP approach eliminates the complications related to violation of peritoneal layer to reach the preperitoneal space. The need to close the peritoneal flap with tacks or sutures (in TAPP approach) also increases the operative time and cost.

CONCLUSION

Of all abdominal wall hernias, Spigelian hernias remain evasive. A high index of suspicion is required for accurate diagnosis. Radiographic studies may facilitate the diagnosis of such hernias, which ultimately require operative repair. An open or laparoscopic approach can be taken for Spigelian hernia repair with increasing use of laparoscopic repairs in uncomplicated cases.

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