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CASE REPORT

Spigelian Hernia

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ABSTRACT

Spigelian hernia is defined as a protrusion of a viscus or preperitoneal fat through a congenital or acquired defect in the spigelian fascia. Spigelian fascia is the part of the aponeurosis that lies between the semi lunar line and the lateral rectus muscle. Approximately 900 spigelian hernias, representing 1% to 2% of all abdominal wall hernias, have been reported in the world literature. Its true incidence is probably greater than the relatively small number of patients reported in the literature. The absence of typical hernia-type symptoms and the physician's lack of experience with such hernias, make early recognition difficult. Ultrasound scan and CT scan can identify spigelian hernia. Surgical repair can be undertaken using either a direct approach, or laparoscopy. CT scan and laparoscopy help in early diagnosis and in avoiding complications. We report here, the case of a 63 year old female patient with a spigelian hernia who underwent open pre-peritoneal mesh repair.

Key Words: Spigelian hernia, mesh repair.

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Introduction

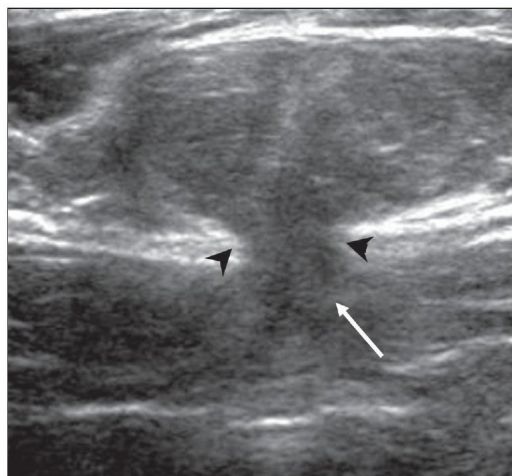
Spigelian hernias (SH) occur through a rare defect of the abdominal wall located on the outer edge of the crescent line, in the area that joins the fascia of the rectus muscle to the sheaths of the wide muscles of the abdomen [1]. It is defined as a protrusion of a viscus or preperitoneal fat through a congenital or acquired defect in the spigelian fascia. Spigelian fascia is the part of the aponeurosis that lies between the semi lunar line and the lateral rectus muscle. Approximately 900 spigelian hernias, representing 1% to 2% of all abdominal wall hernias, have been reported in the world literature [2]. Its true incidence is probably greater than the relatively small number of

patients reported in the literature. We report here, the case of a 63 year old female patient with a spigelian hernia.

Case report

A 63 year old female patient was admitted to the surgical ward with a history of painful swelling in the right lower abdomen for one year. The patient had dragging pain for two months. There were no symptoms suggestive of obstruction. She was a known hypertensive, diabetic and asthmatic on regular medication. She had undergone abdominal hysterectomy for uterine fibroids three years back. Her general physical examination was essentially normal. Abdominal examination revealed a pfannenstiel incisional scar, healed by a primary intension and a tender, firm, reducible swelling of 5x 6 cms size in the right infra umbilical region, just lateral to the rectus abdominis muscle. Impulse on coughing was present. Other systemic examination was unremarkable. Her routine hematological investigations were normal. An abdominal ultrasound (US) scan suggested the possibility of inter-parietal

hernia [Table/Fig 1]. CT scan of abdomen was not performed due to financial constraints.



(Table/Fig 1) USG picture depicting inter-parietal herniation, the arrow pointing the hernial defect.

With a provisional diagnosis of spigelian hernia, the patient was taken up for surgery. The hernia was localized by palpation. Under general anaesthesia; a horizontal incision was made directly over the swelling. Dissection then proceeded through the subcutaneous tissue until the aponeurosis of the external oblique was reached; this aponeurosis was then incised in the direction of its fibers and the sac was localized and dissected centrifugally until the ring was located [Table/Fig 2]. The peritoneal sac was then freed from all the borders of the ring and invaginated within the peritoneal cavity. An inlay polypropylene mesh was placed and the mesh was then fixed to the ring with few sutures using 2-0 polypropylene [Table/Fig 3]. The external oblique aponeurosis was approximated with continuous sutures using 2-0 polypropylene. The subcutaneous tissue was approximated, and the skin was closed with ethilon 3-0. The post operative period was uneventful. The patient was discharged on the 3rd post operative day and her sutures were removed on the 8th post operative day. On 6 months follow up, she was found to be asymptomatic without any cough impulse.

Discussion

The anatomic relationship of the semi lunar line was first described by Adriaan van der Spiegel (1578–1625) [4], as the concave region at the outer border of the rectus muscles, formed by aponeurotic fibers of the internal oblique. In 1764, Klinkosh recognized the spontaneous nature of these hernias and named them "hernias of the spigelian line" [2].

The hernial orifices of most Spigelian hernias occur at, or close to the arcuate line, as the anterior abdominal wall here is only weakly reinforced by slightly separated fascial bands. Moreover, the Spigelian fascia is present in significant width only below the level of the umbilicus. Although Spigelian hernias have been reported to occur above the level of the umbilicus, it is rare for them to do so. A further reason is that, above the umbilicus, the fibers of the transverses abdominis and internal oblique muscles cross one another at angles, making herniation more unlikely than if the fibers were to run parallel, as they do below the umbilicus [3]. Various theories such as defective interlacing of the muscle fascicles at the semi lunar line, neurovascular openings in the fascia and infiltration of muscle layers with fat and muscle palsy have been described; however, none of them can consistently explain the occurrence of these hernias [5]. The anatomic triangle through which the spigelian hernia defects arise is bounded medially by the inferior epigastric vessels, laterally by the semi lunar line, and superiorly by the arcuate line [4]. The great majority of spigelian hernias are inter-muscular, meaning that the sac penetrates across the aponeuroses of the transverses and external oblique, but bulges under the external oblique aponeurosis. The hernia sac consists of peritoneum and occasionally of transversalis fascia, preceded by preperitoneal fat [2].



(Table/Fig 2) Intra-operative photograph of the patient depicting hernialsac.



(Table/Fig 3): Intra-operative photograph depicting hernial defect after inlay mesh repair.

It represents approximately 1 to 2% of all hernias presenting as an emergency, and has an incarceration ratio of approximately 14 to 21% [6]. The absence of typical hernia-type symptoms and the physician's lack of experience with such hernias, make early recognition difficult. In addition, the overlying external oblique fascia conceals the fascial defect and makes it even more difficult to detect. It is commonly found in elderly patients, usually above 50 yrs of age. To date, in literature, less than 40 cases have been reported in children [5]. Symptoms of SH are variable, but there is one constant symptom—abdominal wall pain. SH has three clinical aspects: reducible SH, incarcerated SH, and strangulated SH. Reducible SH induces abdominal wall pain after physical stress with a swelling or an impulsive (increasing with coughing efforts), expanding, and reducible mass in the antero-lateral abdominal wall. These symptoms disappear after rest. Once the SH is reduced, the parietal defect can be identified in the spigelian aponeurosis through the aponeurosis of the external oblique muscle. Incarcerated SH is not reducible because of tight defect, indirect trajectory, or adhesions to the hernial sac [7]. Predisposing factors include increased intra-abdominal pressure, obesity, prior surgery and abdominal trauma.

A US scan of the abdominal wall showed the layers of the abdominal wall, the hernial

sac, its location between these layers, and its fatty or digestive contents, in continuity with the digestive tract. On CT scan, the muscles and the aponeurosis of the abdominal wall can be well analyzed, as can the parietal defect, the hernial sac and its contents, its extension, and its location between the abdominal wall Layers [7]. Treatment of spigelian hernia is surgical. Techniques for repair include primary open repair using nonresorbable sutures, placement of mesh/mesh plugs and laparoscopy. There is little evidence in the literature that can direct favourably towards one technique, as there is lack of experience due to the rarity of such hernias [5]. The repair of SH can be undertaken through a direct approach or a median laparotomy. The risk of recurrence is higher if the defect is large, if the SH is close to the anterior superior iliac spine, if the muscular layers are weak, or if the defect is closed under tension. The abdominal wall can be reinforced with non-absorbable preperitoneal or interstitial mesh [6]. Laparoscopic repair was first reported in 1992. Since then, numerous reports of successful laparoscopic repair have been published. Laparoscopy offers a diagnostic accuracy of almost 100 % [6], and on being compared with the open approach, the laparoscopic repair of spigelian hernias is associated with decreased patient morbidity and a shortened hospital stay. CT scan diagnosis and laparoscopic treatment help to avoid strangulation, intestinal obstruction, urgent surgery, and visceral resection [7].

This patient had undergone hysterectomy in the past; hence the first diagnosis that came to the surgeon's mind was incisional hernia. However, the surgeon should be aware of the rarer variety of hernias (SH), like in our case. This case was diagnosed early and was managed successfully without any complications. To conclude, the diagnosis of SH should be considered if the patient presents with pain, a defect, a swelling, or a mass in the spigelian aponeurosis. The absence of typical hernia-type symptoms and the physician's lack of experience with such hernias, make early recognition

difficult. US scan and CT scan can identify SH. Surgical repair can be undertaken using either a direct approach or laparoscopy. CT scan and laparoscopy help in early diagnosis and in avoiding complications.

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