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Laparoscopic herniorrhaphy of bilateral inguinal herniae and an incidental Spigelian hernia with intra corporeal suturing of the Spigelian hernia neck: A case report

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ABSTRACT

INTRODUCTION: A Spigelian hernia is a rare type of abdominal wall hernia occurring in an area of congenital or acquired defect. These hernias occur in an area called the Spigelian zone and are interparietal making for a difficult diagnosis on clinical exam.

PRESENTATION OF CASE: A 74-year-old female presenting with bilateral inguinal herniae and a left sided Spigelian hernia. The repair was done laparoscopically with an intra-corporeal suture closing the Spigelian hernia neck. Her recovery was uneventful.

DISCUSSION: The aetiology of Spigelian herniae remains nebulous. Due to their rarity and evasive nature on clinical exam, ultrasound imaging has become the first line in diagnosis. Open herniorrhaphy is still the most common technique, but laparoscopic repair is becoming more commonplace in the surgical armamentarium.

CONCLUSION: Spigelian herniae are rare with non specific symptoms. We present the first case report of a laparoscopic repair of bilateral inguinal herniae and a left sided Spigelian hernia with intra-corporeal suturing of the Spigelian hernia neck.

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1. Introduction

Spigelian hernias are a rare type of abdominal wall hernia. Their incidence ranges from 0.1 to 2.0% of all abdominal wall hernias and a common synonym is the hernia of the semilunar line. A Spigelian hernia occurs when there is protrusion of preperitoneal fat, peritoneal sac, or intra abdominal organs through the Spigelian zone in an area of congenital or acquired defect [1]. The hernia sac is often interparietal passing through the aponeuroses of the transversus abdominis and internal oblique and located under the intact external oblique aponeurosis [2]. The Spigelian zone, bound medially by the lateral margin of the rectus muscle and laterally by the linea semilunaris is formed by the fusion of the transversus abdominis and internal oblique aponeurosis. Most Spigelian herniae occur in the Spigelian hernia belt, a six centimeter wide region superior to the interspinous line and inferior to umbilicus. The Spigelian aponeurosis extends from the costal cartilage of the eighth rib to the pubic tubercle [1]. The presence of concomitant Spigelian and

inguinal herniae is an extremely rare clinical occurrence and to our knowledge has rarely been reported in the English literature based on a Pubmed and Medline search. We present a case report of bilateral inguinal herniae and an incidentally found left sided Spigelian hernia in a 74-year-old female. All three were laparoscopically repaired and the Spigelian hernia neck was laparoscopically closed with a non absorbable suture prior to mesh insertion. This publication has been reported in line with the SCARE criteria [8].

2. Case report

A 74-year-old female patient was referred for her symptomatic bilateral inguinal hernias. There was no history of trauma in the groin and both hernias were easily reducible. Clinically, the hernias were of similar size with no other abdominal wall hernias appreciated. The remainder of her abdominal examination was unremarkable.

Radiologically, her computerised tomography (CT) scan confirmed the diagnosis and showed a third defect in the abdominal wall on the left side. An incidental left Spigelian hernia was diagnosed (Figs. 1, 2). The patient had not complained of any symptoms over this area. After an extensive discussion, she consented to a laparoscopic repair of her bilateral inguinal herniae and her

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Fig. 1. CT scan coronal view showing bilateral inguinal herniae (green arrows) and a left sided spigelian hernia (orange arrow).

Spigelian hernia. Laparoscopic examination revealed two inguinal herniae as well as a left Spigelian hernia about five centimeters superior to the left direct inguinal hernia and lateral to the rectus muscle (Figs. 3, 4). On the left side of the anterior abdominal wall, superior and inferior peritoneal flaps were raised; the superior flap was dissected cephalad until the Spigelian hernia was exposed (Fig. 5) and the hernial contents reduced. The Spigelian hernia neck was then closed by intra-corporeal suturing with a V-loc® suture (Fig. 6). The inferior flap was then dissected until visualization of Cooper's ligament medially and the inguinal ligament laterally was obtained. Once the inguinal hernia sac was reduced into the peritoneal cavity, a Prolene® mesh (9 x 5 cm) was placed to cover both the inguinal and Spigelian herniae. The mesh was stapled medially to Cooper's ligament and superiorly to the anterior abdominal wall (Fig. 7) using Absorbatack® absorbable tacks. Closure of the peritoneal flaps using Absorbatack® absorbable tacks (Fig. 8) resulted in reperitonealisation of the left sided anterior abdominal wall.

The right sided inguinal hernia was repaired in a similar fashion. Her surgery was uneventful and post-operatively she made a complete recovery.

3. Discussion

The Spigelian hernia has a well-defined anatomic location between the semilunar line and the edge of the rectus abdomi-

nus muscle. More than 90% occur in the Spigelian hernia belt. This belt is a six centimeter wide area transversely located superior to the interspinal plane and inferior to umbilicus [3,4]. Their aetiology remains nebulous due to the rarity of the condition. One theory is that of perforator vessels that weakens the Spigelian fascia allowing a small lipoma to enter and gradually lead to hernia formation [2].

Its rarity and lack of characteristic clinical symptoms makes for a challenging diagnosis [2]. An intermittently palpable mass that worsens with straining and decreases when lying supine, and pain are the most common presentations. Spigelian herniae originate inferior to the intact external oblique aponeurosis making its signs and symptoms very nonspecific. Asymptomatic cases are not uncommon. In a retrospective audit by the Mayo clinic looking at 81 Spigelian herniae in 76 patients, only 64% of patients were diagnosed by physical examination [5].

It may be difficult to detect a small hernia without imaging. Ultrasound (US) is recommended as first line imaging for a Spigelian hernia. Advantages of an US includes the ability to do real time imaging and perform an examination with the patient in both the supine and upright position, or while the patient performs Valsalva maneuvers. CT scan is considered the most reliable technique for diagnosis in uncertain cases. Magnetic resonance imaging (MRI) may be of benefit preoperatively with increasing availability in difficult to evaluate cases [2].

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