

## Case Report

# A case of incarcerated spigelian hernia causing small bowel obstruction

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### ABSTRACT

Spigelian hernias are rare anterior abdominal wall hernias in which the defect occur at the semilunar line lateral to rectus abdominis muscle. It mostly occurs in the lower half as posterior sheath is deficient in that region. Spigelian hernias are rare and moreover it is difficult to diagnose clinically. It constitutes about 0.12% of abdominal wall hernias. Even though it is rare, it is more prone for complications. It affects both sexes and sides equally. It is a diagnostic difficulty especially in obese patients as in our case where physical examination will often be inconclusive. Majority of the spigelian hernias are diagnosed intra operatively. Here in this case report, we present a case of obese 48 years old female who presented with abdominal pain and signs of intestinal obstruction which was found out to be an incarcerated spigelian hernia. Recently laparoscopic repair has been found to be safe and effective.

**Keywords:** Spigelian hernia, Intestinal obstruction, Abdominal pain, Rectus sheath, Semilunar line

### INTRODUCTION

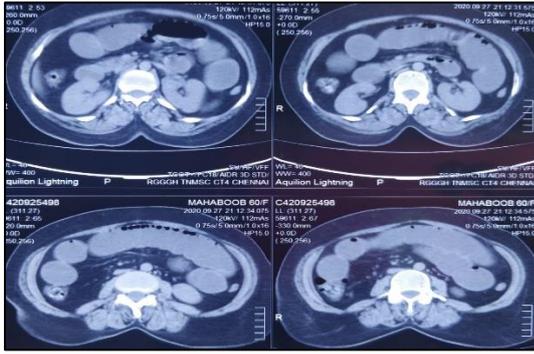
In 1645, Adriann van der Spieghel, a Flemish anatomist, was the first to describe a defect in the semilunar line (linea Spigeli). In 1764, Josef Klinkosch defined the Spigelian hernia as a defect in the semilunar line.<sup>1</sup> Spigelian hernias occurs through slit like defect in the anterior abdominal wall adjacent to semilunar line which extends from tip of ninth costal cartilage superiorly to the pubic spine at the lateral edge of rectus muscle inferiorly.<sup>2,3</sup> The hernia is a well-defined defect in transversus aponeurosis. The hernial sac surrounded by extra peritoneal fatty tissue is often inter parietal passing through the transversus and the internal oblique aponeurosis and then spreading out beneath the intact aponeurosis of external oblique.<sup>4</sup> Surgical intervention is necessary due to increased incidence of complications.

### CASE REPORT

A 48 years old female was admitted in the emergency department of our hospital with abdominal pain, vomiting and abdominal swelling for the past 4 days. Vomiting is

bilious and non-projectile. Patient has a history of not passing flatus and stools for the past 3 days. She has a previous history of abdominal hysterectomy for which the details are not available. On examination, patient was dehydrated, afebrile with a pulse rate of 114 beats per minute and normal blood pressure. Per abdomen findings revealed distended abdomen with diffuse tenderness. A 6×3 cm swelling is palpable in the left iliac fossa just lateral to rectus sheath. The swelling was not reducible with absent cough impulse. Hysterectomy scar is seen. As there is previous history of surgery, an obstructed incisional hernia was suspected and patient was stabilised. X-ray abdomen erect revealed dilated bowel loops. So computed tomography of the abdomen was done, which revealed multiple dilated small bowel loops with air pockets in the small bowel wall. There was a defect of size 4.5×2.6 cm noted in the left iliac region with small bowel loop as content.

Hence proceeded with surgery and it was found to be incarcerated spigelian hernia with small bowel as content causing obstruction.



**Figure 1: CT showing dilated small bowel loops.**



**Figure 2: CT showing defect with small bowel loop as content.**



**Figure 3: Intra operative picture showing external oblique aponeurosis without defect.**



**Figure 4: Intra operative picture showing hernia sac after opening external oblique.**

The bowel wall was found to be congested and hyperemic with pregangrenous mesentery. Patient was given 100% oxygen and warm saline fomentation provided for the

gangrenous segment. After ensuring bowel viability, the contents were reduced, and mesh was placed between external oblique and internal oblique and the wound was closed. Oral feeds were started on the second post-operative day. The patient was discharged on the fourth post-operative day.



**Figure 5: Intra operative picture showing strangulated small bowel released and the imprint of narrow neck on it.**



**Figure 6: Intra operative picture showing congested small bowel and mesentery.**



**Figure 7: Intra operative picture showing polypropylene mesh between internal and external oblique.**

## DISCUSSION

The most common cause of small bowel obstruction in adults are adhesions, bands, malignancies and hernias.<sup>5</sup> Clinical presentation of pain, vomiting, distension, constipation, laboratory and radiographic factors should all be considered in making a decision about treatment of bowel obstruction. The diagnosis in most cases will be confirmed by further imaging studies such as

ultrasonography, contrast studies are most commonly in contemporary practice, the computed tomography.<sup>6</sup>

Spigelian hernia is the protrusion of preperitoneal fat, peritoneal sac, or organ(s) through a congenital or acquired defect in the spigelian aponeurosis, which is located in the aponeurotic layer between the rectus abdominis muscle medially, and the semilunar line laterally.<sup>7</sup> Spigelian hernia is an uncommon spontaneous lateral ventral hernia with an incarceration ratio of around 20%. However complications such as intestinal obstruction are extremely rare.<sup>8</sup> A spigelian line marks the transition from the muscle to the aponeurosis in the transversus abdominis muscle of the abdomen. It is a lateral convex line between the costal arch and the pubic tubercle.<sup>9</sup> In more than 90% of presentation, spigelian hernia has been located in the “spigelian belt”, a transverse 6 cm wide zone in the lower abdominal wall that compromises the arcuate line.<sup>10</sup> The hernia content usually contains preperitoneal fat from the plane just below the aponeurosis of the internal oblique muscle and the transversus muscle. The sac and its contents then lie below the level of aponeurosis of the external oblique. This characteristic can make diagnosis challenging.<sup>11</sup> Classic clinical features include a lump or swelling in the lower abdomen along the semilunar line. This lump is most painful with extension movements of the trunk.<sup>12</sup> Since the hernia lies deep to a muscle, it commonly does not cause a noticeable bulge in the abdominal wall, hence the diagnostic difficulty. Computed tomography (CT) gives detailed information on the contents of the sac.<sup>13</sup> Open mesh repair of spigelian hernias placing the mesh between the external and internal oblique muscles is a simple and safe approach that can prevent morbidity related to other techniques.<sup>14</sup> This approach was followed in our case. 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.<sup>15</sup>

## CONCLUSION

Spigelian hernias are a rare surgical entity and hence it is difficult to diagnose especially if there is a history of previous surgery. In this situation it is confusing in respect to incisional hernia. Diagnosis is usually confirmed only intraoperatively especially in emergency where strangulation is common. Placing the mesh between internal and external oblique muscles is a simple and safe approach. Hence spigelian hernia should always be considered while operating an incarcerated ventral hernia.

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