Spigelian hernia
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Section: Abdominal imaging
Area of Interest: Abdomen Anatomy
Procedure: Diagnostic procedure
Procedure: Computer Applications-Detection, diagnosis
Procedure: Education
Imaging Technique: Conventional radiography
Imaging Technique: CT
Imaging Technique: CAD
Special Focus: Hernia Grafts
Case Type: Clinical Cases
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Patient: 72 years, female

Clinical History:
An elderly lady was admitted to E.R. with colicky abdominal pain associated with nausea. Clinical examination and laboratory test were unremarkable.
An ultrasound examination and plain abdominal film was requested.

Imaging Findings:
The plain abdominal film showed a moderate dilatation of loops bowel without significant air-fluid levels and two large pelvic calcification suggestive of calcified fibroids. Abdominal ultrasound examination, focused to abdominal cavity, did not detect other diseases besides the fibroids,
The abdominal wall without clinical suspicion or visible or palpable mass is rarely included in the ultrasound examination.
Owing to persistence of symptoms, for better evaluation an enhanced CT was performed a few days later. This showed, in correspondence of right lower abdominal wall, protrusion of small bowel loop that was not extended to the subcutaneous fat and remained confined to the muscle layers of the abdominal wall; between the right rectus abdominis muscle and transversus abdominis muscles. The localisation of the hernia and the CT findings were suggestive of Spigelian hernia. The diagnosis was confirmed by surgery.

Discussion:
Spigelian hernia (SH) is a rare acquired hernia, which account for less than 1-2 % of all abdominal hernias. [1-2] SH occurs on the spigelian fascia, anatomical region between the lateral edge of the rectus abdominis muscle sheath and the semilunaris line. The line marks the transition from the transversus abdominis muscle to its aponeurosis. Most of SH occur below the umbilicus near the arcuate line; where the Spiegel's fascia is widest and has the weakest structure because all layers of aponeurosis, except the transversalis fascia, pass anterior to the rectus abdominis muscle. [2] This makes it easier for hernias to form, in combination with obesity, increased intra-abdominal pressure, aging, and rapid weight loss. [3]
Typically, the hernia penetrates through a defect of transversalis and internal oblique fascia and frequently is intraparietal, below the subcutaneous fat and contained by the external oblique fascia without obvious mass in the anterior abdominal wall. SH occur in persons between 40 and 70 years of age. No sex or side predilection exists.
SH has no characteristic symptoms, the clinical presentation varies from a well-localised abdominal pain, with or without palpable mass, to vague abdominal discomfort that disappears on lying down. Nausea and vomiting can
occur sporadically for traction on omentum trapped within the hernial sac.
If the hernia produces a palpable mass along the spigelian fascia the diagnosis is clinically easy; more difficult to suspect in patients who have no visible or palpable mass [4]
Imaging techniques can be helpful for the diagnosis.
Barium studies and tangential views of plain X-ray may show bowel loops outside the peritoneal cavity. However, these techniques are not very effective compared with ultrasounds and CT.
Ultrasound is the diagnostic method of choice in evaluating abdominal wall masses and can easily detect the SH and differentiate among abscesses, tumours, lipomas, sebaceous cysts, and haematomas.
The small size of the SH, the frequent intraparietal location and the absence of clinical suspicion for both its rarity and the lack of obvious mass, make this method less diagnostic. [2]
CT is considered the most reliable technique to the diagnosis since it can evaluate both the abdominal cavity and the abdominal wall and can easier demonstrated the hernial orifice, the sac and the contents of hernia, [4]
SH should be surgically repaired because of the high risk of strangulation due to the small hernial orifice [2].

**Differential Diagnosis List:** Spigelian hernia, Other types of abdominal hernia, Lipomas

**Final Diagnosis:** Spigelian hernia

**References:**

Description: Plain abdominal X-ray (Supine view) shows moderate dilatation of loops bowel and two large pelvic calcification suggestive of calcified fibroids. Origin: U.O.C radiologia area nord AUSL BOLOGNA
Description: Plain abdominal X-ray (erect view) shows not significant air-fluid levels. Origin: U.O.C radiologia area nord AUSL BOLOGNA
Description: Axial enhanced CT shows: hernia of small bowel loop in correspondence with right lower abdominal wall. (arrow) Origin: U.O.C radiologia area nord AUSL BOLOGNA
Description: Coronal MPR show that hernia is intraparietal confined to layers of the abdominal wall. (arrow) Origin: U.O.C radiologia area nord AUSL BOLOGNA
**Description:** Sagittal MPR show that hernia is confined to layers of the abdominal wall. (arrow) without superficial protrusion **Origin:** U.O.C radiologia area nord AUSL BOLOGNA
Description: The drawing shows the semilunar line, the spigelian fascia and the Arcuate line. Origin: U.O.C radiologia area nord AUSL BOLOGNA
**Description:** The drawing shows the layout of aponeurosis of the muscles obliquus internus, obliquus externus and transversus above and below the arcuate line. **Origin:** U.O.C radiologia area nord AUSL BOLOGNA.