

LEFT LOWER QUADRANT ACUTE ABDOMINAL PAIN: A CASE OF SPIGELIAN HERNIA , A RARE DIAGNOSIS BY EMERGENCY ULTRASOUND

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ABSTRACT

Spigelian hernia is rare and its diagnosis is often challenging. The diagnosis of spigelian hernia presents greater difficulties than its treatment. The clinical presentation varies, depending on the contents of the hernial sac and the degree and type of herniation. The pain, which is the most common symptom, varies and there is no typical pain of spigelian hernia. We report a case of Spigelian hernia in which emergency ultrasonography diagnosed correctly a Spigelian hernia, which was later confirmed at surgery. In our opinion, ultrasonography can be an important tool for emergency physicians in cases of abdominal pain or abdominal mass.

Keywords: Spigelian Hernia, Ultrasound.

Introduction

Spigelian hernia is a form of spontaneous lateral ventral hernia which occurs in the linea semilunaris (Spigelius' line) due to developmental or acquired weakness of fibres of the internal oblique and transversus abdominis muscles. The most common location of Spigelian hernias is at the junction of the linea semilunaris and arcuate line. They most often contain omentum, rarely intestine and are frequently asymptomatic. In view of these anatomical and clinical characteristics, the pre-operative radiographic recognition of an obscure lower abdominal, paramedian mass as a Spigelian hernia may be of considerable clinical significance, particularly in the absence of an obvious defect or surgical scar in relationship to the mass.

Before the use of high resolution sonography, the diagnosis of spigelian hernia was missed in 50% of cases preoperatively because the classic findings are often missing.

Case Report

We recently encountered a case of spigelian hernia containing omental fat. The clinical diagnosis was difficult. Ultrasound proved helpful and contributed significantly the decision to operate.

A 60-year-old female was admitted in surgery department through the emergency in September 2010 for the management of left lower quadrant abdominal pain. Pain resolved with conservative treatment. At that time ultrasound did not reveal any abnormality. She presented to emergency again after two months, complaining of generalised, colicky and eventually constant burning abdominal pain in bilateral lower quadrants. The pain had come on suddenly and was not accompanied by nausea or vomiting.

His abdomen was moderately distended, on physical examination there was an area of point in left lower quadrant without a clearly definable mass, the bowel sounds were normal, the white blood cell count and urine analysis were normal.

The patient was referred for ultrasound examination with differential diagnosis of Diverticulitis, Left Ureteric colic or acute appendicitis.

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Ultrasound was performed with a NEMIO XG MODEL SSA-580A (TOSHIBA MEDICAL SYSTEMS, JAPAN) with high-frequency (5- to 12-MHz) linear transducers. Liver, gall bladder, pancreas, bilateral kidneys, spleen, urinary bladder were normal.

Ultrasongraphically there was no evidence of acute appendicitis. However at the point of tenderness there was fascial defect of 18.9x19 mm size. Through this defect there was herniation of omental fat.(Fig.1A) The findings were more apparent in sitting position. (Fig.1B). Diagnosis of the hernia of the Spigelian variety was made.

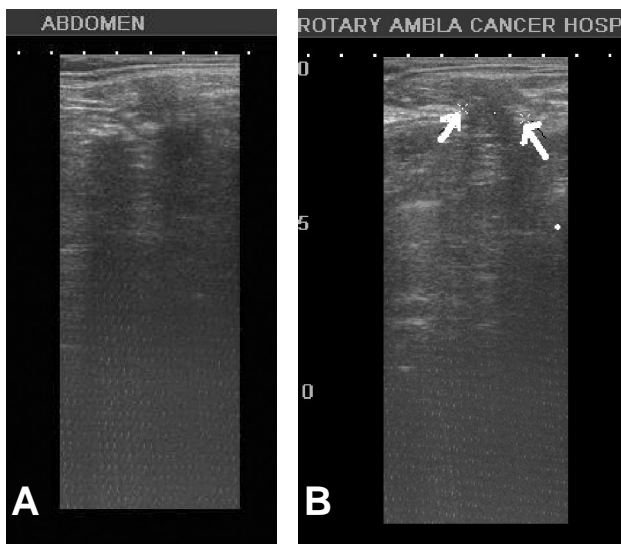


Figure 1A,B: Sagittal sonogram of a left Spigelian hernia. The abdominal wall defect is well identified (White arrows) with herniated omentum in sitting position in figure:1 B.

Surgery was performed. A transverse incision was made through the skin and subcutaneous tissue over the mass. The aponeurosis of the external oblique muscle was incised in the line of incision. A Hernial sac 4 x 3 cm in size protruded through a defect in the transversus and internal oblique muscles. This was immediately lateral to the semilunar line and the semicircular line of Douglas. The sac was opened and contained omentum. ((Fig.2)

The omentum was reduced and the sac was closed. The defect in the transversus and internal oblique muscles were united. The aponeurosis of the external oblique muscle was united without tension, and the skin closed. The patient was discharged on the third

post-operative day in satisfactory condition. Follow-up examination has revealed no evidence of recurrence.

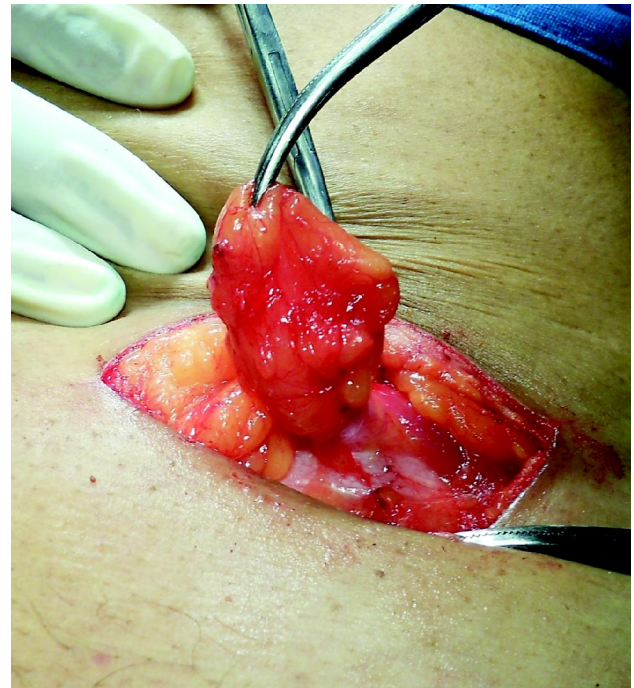


Figure 2: Operative photograph of same patient showing omentum as hernial content

Discussion

In 1764, Klinkosch was the first to definitely describe a Spigelian hernia. This is a hernia through the Spigelian aponeurosis, which is limited laterally by the semilunar line and medially by the lateral edge of the rectus muscle. Most hernias occur at the level of the semicircular line of Douglas (the free lower margin of the posterior rectus sheath), it was described by Spangen as the Spigelian hernia belt.¹ The hernia usually penetrates both the transversus abdominis and internal oblique muscles and expands in the space between the internal and external oblique muscles. The space is largest laterally, so large Spigelian hernias expand lateral to the Spigelian aponeurosis. The hernial orifice is usually small but well defined and has fibrous and inelastic edges. This largely explains why the risk of incarceration is high in Spigelian hernia. Spigelian hernia is rare and accounts for only 2% of abdominal wall hernia.^{2,3} It is normally acquired and is found most frequently in adults although cases of paediatric Spigelian hernia have been reported.^{4,5} There is no gender difference in Spigelian hernia.

Unlike most other types of abdominal hernia which lie in the subcutaneous layer, the interparietal location of Spigelian hernia makes it more difficult to be detected. The hernia has often been called occult or masked. It is often missed or misdiagnosed as painful conditions like appendicitis, diverticulitis, non-specific abdominal pain; or abdominal mass like lipoma, abscess, seroma, haematoma or malignant implant.⁶⁻⁹ This is well illustrated by our case in which the diagnosis was missed at the first admission. As expected, it presents in emergency with incarceration or strangulation in up to 24% of cases¹, however in our case there was no incarceration or strangulation.

Bedside ultrasound has long been an important diagnostic tool for emergency physicians concerning abdominal pain and abdominal mass. It is also an invaluable diagnostic tool in both palpable and nonpalpable Spigelian hernias. Ultrasonography was considered to be the gold standard for Spigelian hernia.^{1,5-7} Scanning is performed with a high frequency linear transducer. The diagnosis is based on the demonstration of the hernial orifice as a defect in the Spigelian aponeurosis, and an intramurally located sac with its content. In the case of a reduced hernia, provocative techniques can be performed under real time scanning. These include the Valsalva manoeuvre, upright positioning, the coughing manoeuvre, and partial sit-ups. Intra peritoneal content protrusion through the hernial orifice can be observed in real time. In our case we performed coughing manoeuvre, partial sit ups. Real time ultrasound can also help in guiding manual reduction of Spigelian hernia.¹⁰ We did try manual reduction under real time ultrasound in emergency. Ultrasound helps to identify the orifice and guides the application of pressure towards the right direction. Reduction of the contents can be observed in real time. Bilateral Spigelian hernias have been reported.¹ Ultrasonography helps to identify occult contra lateral hernias.

Computed tomography can also be used to diagnose Spigelian hernia.^{1,8} However, CT is more expensive, more time consuming, more invasive and usually less available. CT also lacks the real time and dynamic scanning capabilities of ultrasonography.


Conclusion

In conclusion, as shown by our case, Spigelian hernia

can be difficult to diagnose clinically. High-resolution ultrasonography with its versatility, real-time capability, portability and low cost can be an effective and helpful method in the diagnosis of this uncommon hernia. In patients with non-specific lower abdominal complaints with or without a mass in the area of the Spigelian aponeurosis, ultrasound examination on an emergency basis can be helpful.

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