CLINICAL CASE

Small bowel obstruction secondary to a pericecal hernia in an adult patient, an extremely rare condition

Obstrucción de intestino delgado en un paciente adulto secundaria a hernia pericecal, una patología extremadamente infrecuente

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Abstract

Internal hernias are defined by the protrusion of an abdominal organ through a peritoneal or mesenteric aperture. They are responsable for up to 5.8% of all small bowel obstructions (SBOs). Pericecal hernia is a highly unusual variation. We present a case of a 17-year-old Asian male turned to the emergency department due to abrupt abdominal pain and peritonitis. An emergent laparotomy revealed a small bowel herniation through the avascular space of Treves with small bowel necrosis. A pericecal hernia is an extremely unusual clinical entity; however, it should be considered in the differential diagnosis of SBO.

Key words: *Pericecal hernia. Small bowel obstruction. Acute abdomen.*

Resumen

Antecedentes: *La hernia interna se define como la protrusión de un órgano abdominal a través de un orificio peritoneal o mesentérico. Las hernias son causa de hasta el 5% de las obstrucciones de intestino delgado. La hernia pericecal es un subtipo extremadamente infrecuente. Presentamos el caso de un varón asiático de 17 años que acudió a nuestro centro por un cuadro de abdomen agudo con dolor y peritonitis. Durante la laparotomía se evidenció la herniación del intestino delgado a través del espacio avascular de Treves, con necrosis del mismo. La hernia pericecal es un subtipo extremadamente raro, pero que debemos plantearnos en el diagnóstico diferencial del síndrome de obstrucción intestinal.*

Palabras clave: *Hernia pericecal. Obstrucción de intestino delgado. Abdomen agudo.*

Introduction

Internal hernias are defined by the protrusion of an abdominal organ through a peritoneal or mesenteric aperture[1]. In spite of being quite an unfrequent pathology (incidence of < 1%), they are responsable for up to 5.8% of all small bowel obstructions (SBO)[2]. They may be divided according to their origin: acquired (following surgery or trauma) and congenital, or depending on their location: paraduodenal, pericecal, transmesenteric, transepiploic, intersigmoid, or through the omental foramen of Winslow[1,3]. The

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treatment is surgical and the outcome depends on the viability of the herniated bowel.

Pericecal hernia is a highly unusual variation of an internal hernia. Although there are four subtypes, it commonly unfolds as a SBO secondary to its herniation through a defect in the colon mesentery extending behind the right mesocolon into the right lateral paracolic gutter.

Case report

A 17-year-old Asian male, with no relevant medical history, turned to the emergency department of our center due to abrupt abdominal pain (< 12 h), associating nausea, and absence of bowel movements. He has presented similar episodes in the past, posterior to oral intake, although never of such intensity and always spontaneously resolved. Physical examination revealed diffuse abdominal pain with peritonitis. A contrast-enhanced computed tomography (CT) was requested, revealing SBO with a closed loop. In detail, it showed the right mesocolon, projected next to the anterior abdominal wall and the herniated intestinal loops underneath it, and accompanied by signs of suffering with plentiful free abdominal fluid (Fig. 1).

An emergent laparotomy was indicated, revealing a small bowel herniation through a mesenteric defect of the avascular space of Treves (Fig. 2). It contained an important part of the yeyunum, pulling on the right mesocolon and the ileocolic vessels anteriorly, and the vessels being the free margin of the hernial orifice. Due to irreversible necrosis, a resection of 150 cm of the small bowel was necessary.

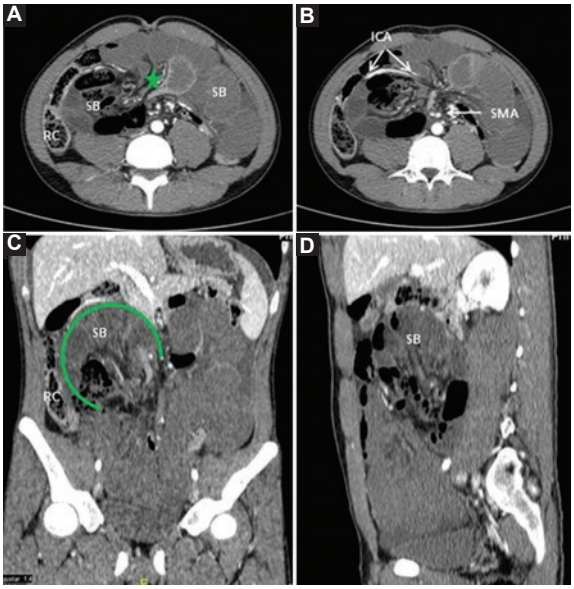

Figure 1. A and B: *on axial.* **C:** *coronal.* **D:** *sagittal contrast enhanced abdominal computed tomography. Small bowel (SB) is herniated (green line) posteriorly to the right mesocolon which is pushed anteriorly; we may see the exact point of the herniation – marked with a star. RC: right colon; SMA: superior mesenteric artery.*

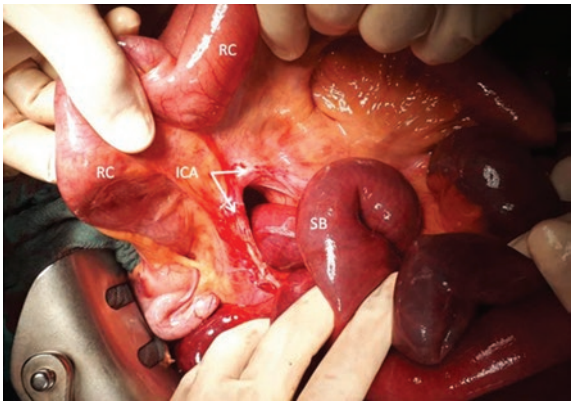

Figure 2. *Pericecal internal hernia through the avascular space of Treves. ICA: ileocolic artery; RC: right colon; SB: small bowel.*

Discussion

Acute bowel obstruction is the most frequent form of presentation of an internal hernia – that is why, although so infrequent, they should always be taken under consideration while making a differential diagnosis. If the hernia reduces spontaneously, the patients may experience recurrent non-specific abdominal pain accompanied by nausea and abdominal distension. The high risk of strangulation followed by intestinal ischemia calls for a prompt diagnosis to rapidly introduce treatment.

Based on the location of the hernial orifice, internal hernias are divided into three subtypes – ones that pass through a natural orifice (for example, foramen of Winslow), a pathological one (for example, transmesocolic, transepiploic, and transmesenteric), or a subperitoneal one (for example, paraduodenal and pericecal)[1]. Paraduodenal hernias are the most common subtype (53% of all internal hernias), 75% of the cases being left paraduodenal hernias. They are secondary to a malrotation of the small bowel during the embrionic period. Recently, higher incidence of transmesenteric iatrogenic hernias is observed, mainly due to diffusion of abdominal surgeries, such as gastric bypass with Roux-en-Y anastomosis[2].

According to the literature, pericecal hernias are highly infrequent, representing only 13% of all internal hernias, four subtypes are described (ileocolic, retrocecal, ileocecal, and paracecal). Most frequently, the

small bowel enters through the mesenteric defect through the triangular avascular space of Treves, situated between the superior mesenteric vessels and the ileocolic vessels – located in the medial and lateral margin of the hernial orifice. There tends to be only one defect, in the shape of a fissure along the mesentery.

Contrast-enhanced CT is currently the gold standard diagnostic method and frequently permits to differentiate between the different subtypes of internal hernias preoperatively and the intestinal viability. The most common form of radiologic presentation of such hernia is a closed loop – in which two points along the course of a bowel are obstructed at a single location (the hernial orifice), thus forming a closed loop[3]. Pericecal hernias CT shows a bowel obstruction secondary to intestinal herniation behind the mesocolon, which will tend to be projected anteriorly[3]. It may be possible to follow the ileocolic vessels adjacent to the hernial orifice.

The treatment is surgical and consists of reduction of the herniated content. Sometimes, it may be necessary to broaden the orifice, with extreme precaution, not to lesion neither the superior mesenteric and ileocolic vessels, nor the terminal arcade of the distal ileum. The need for resection and it's extent depends on the viability of the affected segment and is what determines the prognosis.

Conclusion

A pericecal hernia is an extremely unusual clinical entity; however, it should be considered in the differential diagnosis of SBO, especially when the patient has no history of previous surgery nor trauma. Delayed treatment may lead to elevated mortality due to intestinal necrosis. The diagnostic method of choice is contrast enhanced CT and the treatment should consist in an emergent surgery.

Conflicts of interest

The authors declare no conflicts of interest.

Ethical disclosures

Protection of human and animal subjects. The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

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