



An uncommon cause of acute bowel obstruction: the left para-duodenal hernia

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An uncommon cause of acute bowel obstruction: the left para-duodenal hernia

Internal hernias of the abdomen are uncommon. They represent less than 1% of bowel obstruction cases. The left paraduodenal hernia is the most frequent type of internal hernias. We report a case of 77 year-old woman consulting for bowel obstruction evolving since two days. The abdominal computed tomography revealed a retroperitoneal small bowel contained in a peritoneal sac. The surgical exploration confirmed the diagnosis of a left internal paraduodenal hernia by showing incarcerated jejunal loops in a paraduodenal hernia through a narrow opening to the left of the angle of Treitz. A surgical reduction of the hernia and closure of the hernia neck were performed. The follow-ups were uncomplicated. Through this observation and a literature review, we try to recall the clinical and radiological characteristics of this disease and to clarify the therapeutic modalities.

KEY WORDS: Computer tomography Internal hernia, Paraduodenal hernia, Small bowel obstruction

Introduction

Internal hernias are an uncommon cause of bowel obstruction, accounting for less than 1% of cases¹. Paraduodenal hernia (PH) represents the most common type of congenital internal hernia. It can be asymptomatic, causes chronic abdominal pain or presents with acute intestinal obstruction with strangulation and ischemia. The diagnosis of this congenital malformation is often made during surgical intraoperative exploration for intestinal obstruction^{2,3}. We describe a case of left paraduodenal hernia found in a patient who presented with features of acute intestinal obstruction.

Observation

It's about a 77 year-old woman consulting for an acute bowel obstruction evolving since two days. Physical examination showed a discrete abdominal distension and slight tenderness in the epigastric and the left upper quadrant. The digital rectal examination found an empty rectal vault. The abdominal X-ray showed an air-fluid small bowel levels. The computed tomography (CT) showed the presence of a jejunal loop contained in a retroperitoneal sac interposed between the stomach pushed forward, the tail of the pancreas to the right and back and the left colon to the left and back (Fig. 1). The mesenteric vessels of these loops were stretched with displacement of the inferior mesenteric artery to the left. The diagnosis of a left-paraduodenal hernia complicated with acute bowel obstruction has been well discussed. The patient was operated in emergency by a median laparotomy. Surgical exploration found about 40 cm of proximal healthy small bowel in an internal left paraduodenal hernia. The neck hernia was 3 cm of diameter (Fig. 2). After reduction of intestinal loops, the hernial orifice was sutured. The postoperative course was uncomplicated. The patient remained asymptomatic after 18 months of follow-up.

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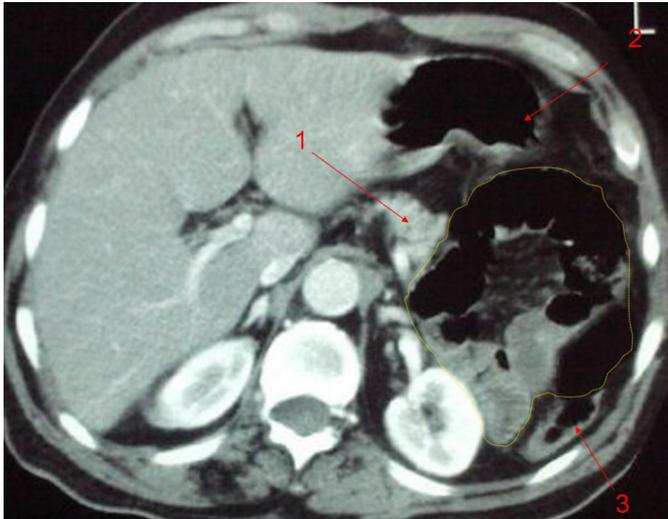


Fig. 1: Abdominal CT showing the presence of dilated loops in the back cavity of the omentum interspersed between the pancreas (1), stomach (2) and the descending colon (3).

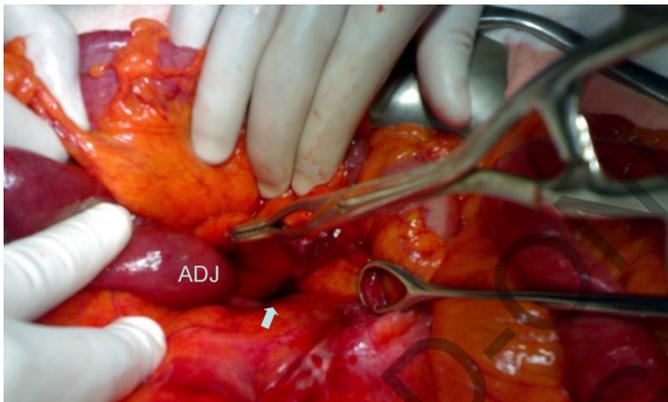


Fig. 2: Intraoperative view: the neck of the hernia (arrow) on the left side of the duodeno-jejunal junction (ADJ).

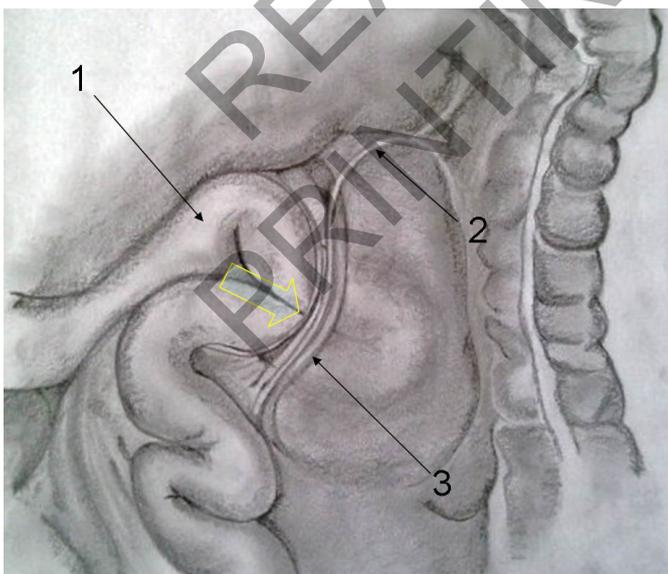


Fig. 3: Left para-duodenal hernia: Landzert's para-duodenal fossa (arrow), (1) the fourth portion of the duodenum, (2) inferior mesenteric vein, (3) left colic artery.

Discussion

An internal hernia is a protrusion of bowel through abnormal orifice in the peritoneum or mesentery⁴, it account for only 0.25–0.9% of all patients with small intestinal obstructions⁵. PH is the most common form of congenital internal hernia, making up 53% of all reported cases^{6,7}. The left sided hernias are more common than right sided ones, representing 75% of cases^{8,9} (Fig. 3).

There are many controversies and theories regarding the exact origin of PH, but only two theories are widely accepted. On the one hand, the mechanical theory was first proposed by Treitz in 1857¹¹ and Jönnesco in 1890¹², then recently developed further by various authors including Freund in 1977¹³ and Khan in 1914¹⁴; it suggests that the left PH develops from a weakness or a lack of fusion at the para-duodenal fossa described by Landzert. It would be enlarged from repeated phenomena of abdominal hyperpressure. On the other hand, the embryological theory, defended by Andrew and Dott in 1923^{5,16}, then by Callender in 1935¹⁷ and now recognized by most authors, suggests that the PH results from an error in intestinal rotation and fixation that leads to entrapment of the small bowel between the mesocolon and posterior abdominal wall.

Although PH is congenital, most cases are discovered between the 4th and 6th decades of life with mean age about 38.5 years^{8,10}, they are exceptionally manifested in the elderly patients over 75 years old. Men are commonly 3 times more affected than women. However, our patient was a 77 years old woman.

The clinical presentation is non specific. Some of internal hernia may remain asymptomatic during the whole life time. About 10 to 15 % of cases are discovered¹⁸. Often, the clinical signs are dominated by peri-umbilical cramps or postprandial epigastric pain, nausea, vomiting and so rarely the presence of an abdominal mass in the left side of the abdomen. But the most common presentation of left PH is acute small bowel obstruction.

At least 50% of patients with PH ultimately develop intestinal obstruction¹⁹. Regarding the risk of incarceration of PH with mortality as higher as 20–50%, it is recommended that all cases of PH, including asymptomatic ones, should be surgically corrected²⁰.

The classic radiological findings of left PH were originally described from the small bowel follow-through examination. The characteristic radiographic features of left PH is a circumscribed ovoid mass of multiple jejuna loops encapsulated in the left quadrant immediately lateral to the ascending duodenum. The diagnosis is also discussed at the delay in the passage of contrast through the small bowel loops with changes in the patient's position. Abdominal CT has now become the study of choice to provide the correct diagnosis during symptomatic periods^{7,21}. Left PH have a characteristic appear-

ance of a formation include clustering of small bowel loops, a saclike mass with encapsulation at the ligament of Treitz, duodenojejunal junction depression, mass effect on the posterior stomach wall, engorgement and crowding of the mesentery vessels with frequent right displacement of the main mesenteric trunk, and depression of the transverse colon²¹. Anterior and upward displacement of the inferior mesenteric vein that lies in the ventral circumference of the hernia orifice has been postulated as an additional diagnostic feature on CT. The preoperative diagnosis of these internal hernias could be often unknown even after CT well guided, its discovery sometimes occurs during surgery.

After diagnosis of PH is made, the treatment is surgery²². The contents of PH should be reduced manually. If it's difficult to reduce because of its bulky size or adhesions within the sac, an incision in the avascular portion of the hernia sac to the right side of the inferior mesenteric vessels, can be made so to enlarge the neck hernia. During this procedure, it's important to consider the relationship with the inferior mesenteric vessels to avoid injury of these structures. The defect is dealt with in two ways, either by simple closure or by wide opening of the sac by making it continuous with the peritoneal cavity. Intestinal resection is necessary in cases of unhealthy small bowel.

Since 1998, Uematsu²³ reported the first laparoscopic repair of PH. Since that date, laparoscopic approach has been reported as a way of diagnosis and repair of PH in many literature reports. As with open repair, laparoscopic repair of paraduodenal hernias can be performed either by wide extension or by surgical closure of the hernia defect. Although laparoscopic repair would be expected to reduce postoperative pain and the hospital stay, the paucity of data precludes any final conclusions regarding these issues as well as rates of recurrence. The current data suggest that acute small bowel obstruction can be managed by laparoscopy in selected cases. Selecting cases of early obstruction and using atraumatic bowel graspers likely reduce the risk of intestinal injury.

Conclusion

Although relatively uncommon, left PH should be included in the differential diagnosis of small bowel obstruction in patients who are relatively young, have repetitive attacks, and lack any history of previous abdominal surgery. The combination of a high index of suspicion, familiarity with this disease entity, and modern imaging technology make preoperative diagnosis easier today. Surgical treatment based on reducing the hernia contents and the closure of its neck, is the treatment of choice. Currently, the laparoscopic approach is mainly indicated in the cases of uncomplicated left PH.

Riassunto

Le ernie addominali interne sono entità rare e rappresentano meno del 1% delle cause di occlusione. L'ernia paraduodenale sinistra è comunque il tipo più frequente di ernie interne.

Si riferisce il caso di una paziente di 77 anni giunta all'osservazione per l'insorgenza di una ostruzione intestinale insorta da due giorni. La TC addominale dimostrava anse ileali a sede retroperitoneale racchiusa in un sacco peritoneale. L'esplorazione chirurgica confermò la diagnosi di ernia interna paraduodenale sinistra dimostrando anse intestinali incarcerate in un'ernia paraduodenale attraverso un ristretto passaggio posto alla sinistra dell'angolo di Treitz. All'intervento chirurgico venne effettuata la riduzione dell'ernia e la chiusura del colletto erniario ed il seguito postoperatorio fu privo di complicanze.

Con l'occasione di questa osservazione ed una revisione della letteratura, si cerca di ricostruire le caratteristiche cliniche e radiologiche di questa patologia e di delineare le modalità terapeutiche.

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