

The Management of A Small Bowel Obstruction Caused by A Right Paraduodenal Hernia

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Abstract

Case Report

Right paraduodenal hernia (RPH) is a type of internal hernia and is frequently associated with intestinal malrotation. The preoperative diagnosis is often difficult. We report the case of a 40-year-old female patient admitted for a small bowel occlusion, the surgical exploration discovered a RPH.

Keywords: Paraduodenal, hernia, small bowel, obstruction.

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INTRODUCTION

Paraduodenal hernias (PDH) are the most common internal hernias and are responsible for 0.2 to 0.9% of acute intestinal obstruction, which is the most frequent mode of revelation [1]. RPH accounts for only 25% of these PDH and is linked in almost all cases to abnormality of embryonic midgut rotation [2]. The diagnosis is often difficult due to its rarity and the non-specificity of its clinical presentation. Imaging can be of great help in establishing the preoperative diagnosis. Treatment is based on surgery to treat the occlusion and prevent recurrence.

We report the case of a young patient admitted for acute bowel obstruction and in whom surgical exploration revealed a right paraduodenal hernia.

CASE REPORT

A 40-year-old patient admitted for occlusive syndrome installed 24 hours before her arrival; Furthermore, the patient reported intermittent abdominal pain, located in the right hypochondrium and flank since her childhood. The examination noted a patient who was hemodynamically stable, afebrile, with a slightly distended but defenseless abdomen. An

abdominal CT scan revealed distension of the last loops of the small intestine located behind and outside the ascending colon; the jejunum and colon are flat, the third duodenum passes in front of the superior mesenteric vessels and the superior mesenteric vein (SMV); initially located to the left of the proximal part of the superior mesenteric artery (SMA), SMV winds behind it to be placed on its right side (figures 1 & 2). The biological assessment was normal. The patient underwent a surgical exploration that noted an internal hernia of the small intestine; in fact, almost all the small bowel was contained in a sac at the expense of the right mesocolon (figures 3 & 4); the hernial orifice, located in the ascending mesocolon, was bordered by the right ileo-colic artery in front and SMA behind (figure 5). All these findings led to the diagnosis of a right paraduodenal hernia. The exploration had also made it possible to note an anomaly of the ileocecal junction, in fact, the ileum ended in the posterior wall of the cecum. Due to a doubt about the viability of a stricture zone of the terminal ileum, we performed an ileo-cecal resection with manual end-to-side ileocolic anastomosis which made it possible to reduce the small bowel to its normal position. The postoperative follow-up was simple and the patient was discharged on postoperative day 4.

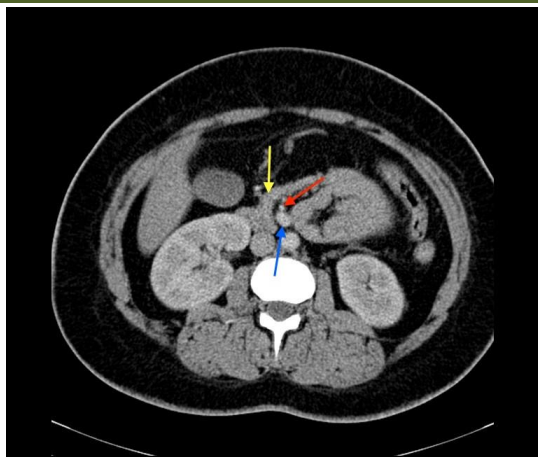


Figure 1 : CT scan shows the 3rd duodenum (yellow arrow) passes in front of superior mesenteric vessels (SMA=red arrow, SMV=blue arrow)

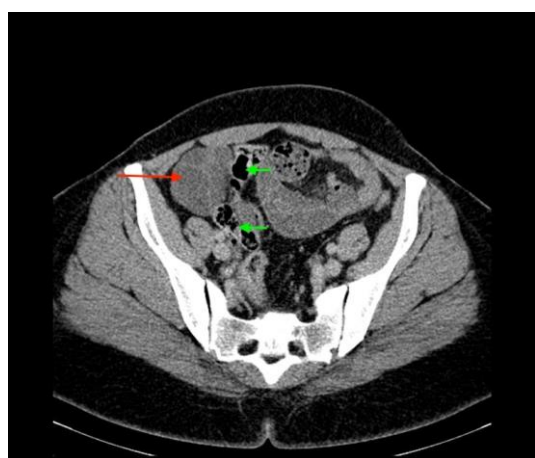


Figure 2: CT scan shows herniated small bowel (red arrow) at the right of the ascending colon (green arrows).

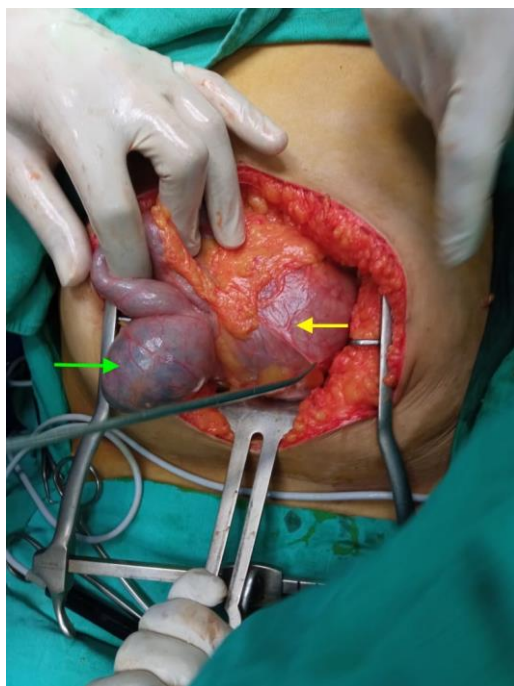


Figure 3: operative view : cæcum (green arrow), hernial sac (yellow arrow)

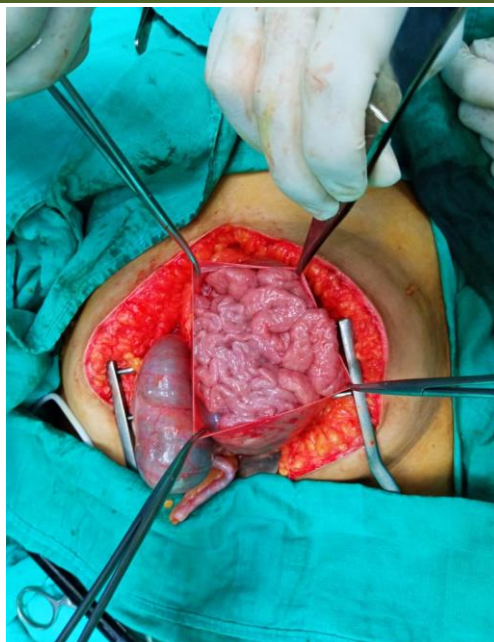


Figure 4: Agglutinated small bowel discovered after the opening of the hernial sac.

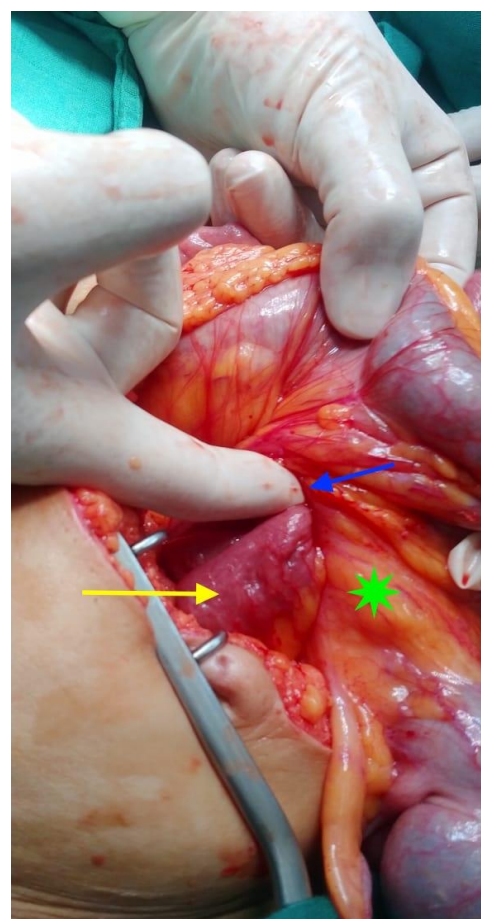


Figure 5: herniated ileum (yellow arrow), hernial orifice (blue arrow), ascending mesocolon (green asterisk)

DISCUSSION

Paraduodenal hernias (PDH) represent the most frequent cause of internal hernia (50–55%), the

right forms represent approximately 25% of all PDH and primarily affect the male sex [2–4]. The age of discovery is variable, ranging from childhood to adulthood, the median age at diagnosis is 36 years [4–6].

Right paraduodenal hernia (RPH) is caused by defective rotation of the primary intestine during embryologic life. It would be, in fact, a malrotation of the small intestine, immobilized at 180° in the counterclockwise direction, while the colon continues, its physiological counterclockwise rotation up to 270°, so that all or part of the small bowel would thus be trapped behind the ascending mesocolon, which had come to cover it [1].

RPH therefore usually presents as a median or lateralized intestinal mass on the right, visible behind the right mesocolon and sometimes pushing the ascending colon forward or covering it through the front. In all cases, the hernial orifice is located to the left of the mass, most often above and behind. The free edge of the hernial orifice is systematically bordered by the SMA or one of its right branches, either the right superior colonic artery or the ileo-caeco-appendicular artery [7].

The diagnosis is often made in adulthood with an upper occlusive syndrome in the context of chronic abdominal pain, sometimes present since childhood [8]. The unprepared abdomen is often normal or has nonspecific but often asymmetric small bowel obstruction syndrome. The reference examination in this indication is the CT scan with the injection of the contrast product and high digestive opacification, which helps to make the diagnosis by showing small bowel loops agglutinated in the right hemi abdomen appearing to be enclosed in a sac located outside and in below the third duodenum, with the repression of the right colic flexure to the left and the front. The trunk of the SMA appears to be stretched and also pushed back to the front and to the right, causing enlargement of the arterial clamp [9, 10]. In our patient, the 3rd duodenum passed in front of the superior mesenteric vessels and the agglutinated intestinal loops were tilted towards the left hemi-abdomen most probably by the effect of gravity and because the hernial sac was large. Despite all these clinical and radiological data, which could be suggestive preoperatively, the diagnosis is most often made intraoperatively.

In front of an occlusive syndrome, the surgical intervention must not suffer from any delay, it can be carried out as well by median laparotomy as by laparoscopic route, the latter is to be avoided when the occlusion is not tolerated or when the small intestine is too distended. In the absence of intestinal necrosis, the operative procedure consists of reducing the small loops in the peritoneal cavity by often easy manual traction. However, due to the proximity of the superior

mesenteric vessels, the majority of authors recommend the mobilization of the right colon in the plane of Toldt's fascia, a maneuver allowing direct reduction of the hernia [4, 6, 11]. In the case of intestinal necrosis, resection should be as economical as possible when ischemia appears extensive, because of the risk of short small bowel. If in doubt, it is therefore prudent to forgo extensive resection of the small bowel and to prefer exclusive skin closure, intended to reduce intra-abdominal pressure, followed by a second look in principle at the 24th hour [12]. The preventive treatment consists of a right colonic mobilization to reduce the hernia as much as possible. Therefore, it is preferable to complete the dissection with a right coloepiploic detachment, followed by positioning the intestine in a "complete common mesentery", with all of the small bowel in the right hemi-abdomen and all of the colon in the left hemi-abdomen, the cecum being placed in the left iliac fossa, after having performed appendectomy [4,5].

CONCLUSION

Paraduodenal hernias represent 50% of internal hernias, the right forms, less frequent than the left, constitute only 20% of all paraduodenal hernias and are linked to malrotation of the primary intestine. The preoperative diagnosis is often difficult. The treatment of this pathology is based on surgery to reduce the herniated small bowel and position it as a complete common mesentery to avoid recurrence.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

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