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RIGHT PARADUODENAL HERNIA : EMERGENCY MANAGEMENT

General Surgery

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ABSTRACT

Paraduodenal hernia is the most common type of internal hernia, accounting for 53% of reported cases. It represents a rare congenital anomaly which arises from an error of rotation of the midgut. We report a case of right paraduodenal hernia in an 58 year old patient and its emergency diagnosis and management in an acute clinical presentation. A 58 year old male patient was admitted with diffuse abdominal pain, obstipation and vomiting. An abdominal CT scan with intravenous and oral contrast revealed multiple dilated jejunal and proximal ileal loops abutting in C loop of duodenum. It is displacing superior mesenteric vessels anteriorly and there is crowding of mesenteric vessels at the site of abnormal bowel loops. Suggestive of right paraduodenal internal hernia.

The patient underwent a laparotomy, which revealed a large sac containing dilated small bowel loops as shown by radiologic studies. The patient did well in postoperatively and was discharged home on the 5th day after the surgery.

KEYWORDS

Right paraduodenal hernia, malrotation,

Introduction

The first definition of a right paraduodenal hernia was proposed by Moynihan in 1906 and included the following criteria: most of the small bowel is trapped within a peritoneal sac between the right and transverse colon and is positioned right of midline, the hernia sac opens to the left at the ligament of Treitz, and either the superior mesenteric or ileocolic artery is found at the anterior aspect of the sac [1]. Signs and symptoms of paraduodenal hernia are extremely variable and may occur at any age [2]. The majority of cases are noted between the 4th and 6th decades of life. The average age at described diagnosis described is 38.5 years [3]. The most common presentation is acute small bowel obstruction, with crampy abdominal pain, nausea, vomiting and distension. The patient may complain of vague and chronic abdominal pain or periodic distension, which results from partial obstruction. Unfortunately, these nonspecific symptoms are often incorrectly attributed to biliary disease, gastritis, or gastroesophageal reflux. Physical examination is usually not revealing unless the hernia is large enough to produce an abdominal mass or causes intestinal obstruction [3]. The severity of signs and symptoms is directly proportional to the degree of obstruction [2, 4]. A paraduodenal hernia may be discovered incidentally at autopsy [2]. In many cases it causes no symptoms and diagnosis may be made when a barium x-ray examination shows the small bowel either to the right or left of the midline in the abdomen [2]. We report a case of right paraduodenal hernia and its emergency diagnosis and management in an acute clinical presentation.

Patient and observation

A 58 year-old male patient was admitted with diffuse abdominal pain, obstipation and vomiting. O/E abdomen had mild distention with +ve guarding and rigidity on right side of abdomen. along with increased bowel sounds. Pt had leukocytosis, at 19,230/µL. Plain abdominal X-ray showed segmental dilated small bowel (Picture 1). CECT revealed multiple dilated jejunal and proximal ileal loops abutting in C loop of duodenum. It is displacing superior mesenteric vessels anteriorly and there is crowding of mesenteric vessels at the site of abnormal bowel loops. Suggestive of right paraduodenal internal hernia(Picture 2, 3). The patient underwent a laparotomy, which revealed a large sac containing dilated small bowel loops, with an extensive amount of strangulated and gangrene (Picture 4). Immediately after the releasing bowel from the sac. The ligament of Treitz's plicated over preaortic retroperitoneum. The patient did well in postoperatively.

Discussion

Paraduodenal hernia is the most common type of internal hernia, accounting for 53% of reported cases [4]. The term 'paraduodenal hernia' refers to a hernia of the entire small bowel, or part of it, into a sac derived from folds of peritoneum and fossae normally found at the terminal or 4th portion of the duodenum. It represents a rare congenital anomaly which arises from an error of rotation of the midgut. There are two variants, right and left paraduodenal hernia, the right being less common [2]. A right paraduodenal hernia is formed when the prearterial limb fails to rotate around the superior mesenteric artery (SMA). The prearterial segment is the portion cephalic to the vitello-mesenteric duct and comprises the distal duodenum and the entire small bowel to the distal ileum. Therefore, a portion of the small bowel remains to the right of the SMA. Fusion of the ascending colonic mesentery to the retroperitoneum causes entrapment of the bowel within the primitive coelom, affecting from a single loop to the entire small bowel. The result is a hernia orifice that is always to the right of the midline and usually faces medially and slightly downward. The mesentery of the ascending colon and a portion of the transverse colon make up the anterior wall of the sac, while the SMA and ileocolic artery lie in the free edge of the sac [2]. A CT scan may demonstrate the characteristic features of internal herniation with clustered bowel loops with or without obstruction. In patients with internal hernias, CT scan demonstrated abnormalities in 56% of cases [5]. Most paraduodenal hernias do not present with acute hernia incarceration or strangulation and are often discovered incidentally during laparoscopy or laparotomy. It is, therefore, important to inspect the region surrounding the ligament of Treitz at exploration in cases of unexplained obstruction or gastrointestinal symptoms. Thus, a high index of suspicion and proper imaging can be critical for early diagnosis of paraduodenal hernia. Key step in operative management of a right paraduodenal hernia includes avoiding injury to the mesenteric vessels at the neck of the hernia while attempting to reduce the hernia contents without removing the sac itself. Paraduodenal hernias carry about a 50% lifetime risk of incarceration, which may lead to bowel obstruction and strangulation. The mortality rate is not clear but approximates 20-50%, due to the large proportion of patients with intestinal obstruction and ischemia requiring emergency surgery. There is a poorer prognosis if strangulation occurs and a long segment of small bowel is rendered ischemic. Moreover, this may result from delay in intervention, as signs of peritonitis may be masked by the retroperitoneal position of the hernia [6].

Conclusion

This rare anatomical anomaly should be considered as part of the differential diagnosis for any patient presenting with a small bowel obstruction without history of previous abdominal surgery. Confirmation of a paraduodenal hernia with signs of obstruction or strangulation mandates urgent operative exploration. Having a high index of suspicion for this disease entity is important because the rate of bowel necrosis can be as high as 20%. The contrast-enhanced CT scan was very helpful in the case reported since it allowed an early laparotomy which avoided intestinal resection in a patient who shown nonspecific symptoms.

Figure 1:Xray fpa

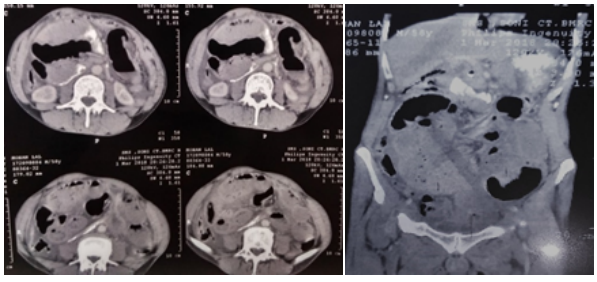

Figure 2: CT showing the right upper cluster of bowel inside the hernia sac with a deficit of contrast capitation.

Figure 3: large sac containing dilated small bowel

Figure 4: gangrenous small bowel

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