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A CASE REPORT- PARADUODENAL HERNIA

Surgery

Birju Patel* 2nd Year Resident, Department of General surgery, Smimer Hospital, Surat, Gujarat, India
*Corresponding Author

Harish Chauhan Professor, Department of General surgery, Smimer Hospital, Surat, Gujarat, India

Yash Patel 1st Year Resident, Department of General surgery, Smimer Hospital, Surat, Gujarat, India

ABSTRACT

Paraduodenal hernias are congenital internal hernias that usually present with non-specific symptoms, and are therefore rarely diagnosed preoperatively. Left-sided paraduodenal hernias are three times more likely to occur than right-sided ones. Both hernias present similarly, but have a differing embryological basis. Here, the case of a 20-year-old man with a right paraduodenal hernia presenting with small bowel obstruction is presented, and a brief discussion of the literature on its diagnosis and management given.

KEYWORDS

CASE PRESENTATION

A 20-year-old man presented from an outside hospital with a 2-days history of generalised abdominal pain. The pain was described as sharp, constant, non-radiating and associated with nausea and 4 episodes of postprandial non-bilious projectile emesis. The patient had a bowel movement on the day prior to admission with liquid consistency stool. A physical examination revealed a mass in his left upper quadrant.

DIFFERENTIAL DIAGNOSIS

- Internal hernias
- Adhesions or Bands
- Volvulus
- Intussusceptions
- Inspissated faeces
- Electrolyte imbalance
- Uraemia

Since this patient had no previous surgical history, a working diagnosis of an internal hernia was made.

CLINICAL DIAGNOSIS

Our patient, a 20-year-old man, presented with a 2 days history of sever sharp generalised abdominal pain with postprandial emesis and tender abdomen with no guarding and rigidity, X- ray abdomen standing shows multiple air-fluid level without gas under left dome of diaphragm and ultrasound showing dilated bowel loops, S/O Acute intestinal obstruction more over visceral perforation.

Figure 1: Illustration showing a loop of small bowel prolapsing (curved arrow) through Landzert's fossa, located behind the inferior mesentericvein and left colic artery (straight arrow)

PATHOLOGICAL DISCUSSION

Internal hernias are an uncommon cause of intestinal obstruction, accounting for 0.2% to 0.9% of cases.1 An internal hernia is formed when a viscus protrudes through a mesenteric or peritoneal orifice within the peritoneal cavity. Paraduodenal hernias are the most common type of internal hernias, accounting for more than 50% of reported cases.1 Left-sided paraduodenal hernias are three times more common than right-sided paraduodenal hernias, and have a 3:1 male to female ratio.2 Left paraduodenal hernias are congenital anomalies formed during midgut rotation, when small bowel invaginates into an avascular segment of left mesocolon. The small bowel becomes entrapped between the mesocolon sac. It has therefore been proposed that a more appropriate name for a paraduodenal hernia may be a congenital 'mesocolic' hernia.3 The space into which the bowel herniates is called Landzert's fossa, and is found behind the fourth part of the duodenum (figure 1). At autopsy Landzert's fossa has been found to be present in approximately 2%of the population.4–6 A left paraduodenal hernia usually contains most of the small bowel, from the fourth part of the duodenum to terminal ileum, and the colon usually resides in its anatomically correct position. Occasionally the descending colon may be found to the right of the hernia, and there exists a risk of colonic volvulus especially if there is a long mesentery. Right paraduodenal hernias are also congenital in origin, and arise when bowel herniates through a defect in the first part of the jejunal mesentery called Waldeyer's fossa (figure 2). Waldeyer's fossa is found in 1% of the population at autopsy.1 The hernia is found in the right side of the transverse mesocolon and extends inferolaterally behind the ascending mesocolon. Right-sided paraduodenal hernias are usually larger and more fixed than in left-sided paraduodenal hernias,7 and are associated with small bowel non-rotation. CT is the imaging modality of choice in diagnosing a paraduodenal hernia. A CT scan of a left paraduodenal hernia usually demonstrates clustering of loops of small bowel at or above the ligament of Treitz or behind the stomach, causing a mass effect on the posterior wall.5 6 8 Sometimes, inferior displacement of the transverse colon can be seen, as well as inferior mesenteric vessel abnormalities.5 6 8 If small bowel obstruction is not present, the collapsed bowel loops may be mistaken for a soft tissue mass. A high index of suspicion for this condition can help avoid unnecessary and unsuitable invasive procedures such as CT-guided biopsy.9 A helpful study would be an upper gastrointestinal series with small bowel follow through, which reveals contrastfilled bowel loops in the left upper quadrant. A CT scan of a right-sided paraduodenal hernia reveals a cluster of small bowel loops on the right side of the abdomen, usually just below the third part of the duodenum. As the afferent and efferent loops of bowel are involved in the hernia, they may appear narrowed and decompressed. Sometimes the small bowel can be seen looping around the superior mesenteric vessels at the root of the small-bowel mesentery. Paraduodenal hernias usually present with symptoms of acute small bowel obstruction such as nausea, vomiting, abdominal pain and distension, on a background of recurrent vague abdominal pain. Sometimes, as in our case, clustering of dilated loops of small bowel may be palpable. Patients with a left paraduodenal hernia usually present during the fourth to sixth decade of life, and the mean age of presentation is 38.5 years.2

Figure 2: Illustration showing a right paraduodenal hernia with a loop of small bowel prolapsing (curved arrow) through Waldeyer's fossa, behind the superior mesenteric artery (SMA) (straight arrow) and inferior to third part of the duodenum (asterisk)

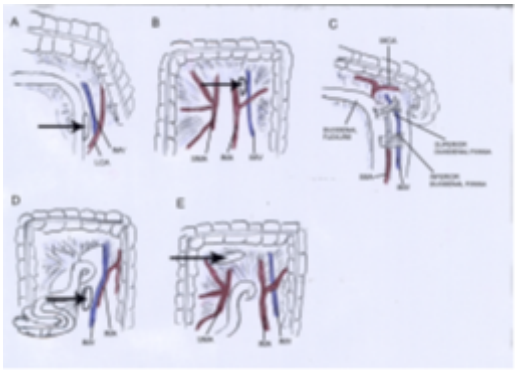

Figure 3: Coronal drawing of abdominal recessum and fossae (arrows and lines). (A and B) Landzert's fossae. IMA, inferior mesenteric artery; IMV, inferior mesenteric vein; LCA, left colic artery; SMV, superior mesenteric vein. (C) Superior + inferiorduod

DISSCUSSION OF MANAGEMENT
INVESTIGATIONS

A CT scan was performed which shows markedly dilated fluid filled small bowel loops in the central abdomen with maximum dilatation 45 mm. On post contrast study, normal enhancement of the bowel loop is seen at present. Dilated loops are lying between the aorta and superior mesenteric vessels, may represent acute small bowel obstruction (closed loop obstruction probably due to right paraduodenal hernia).

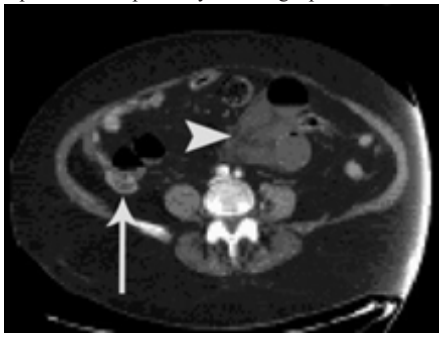

Figure 4: CT scan with small bowel distension, fluid levels presence among bowel segments (arrows) and thickening in mesentery walls (arrows head).

TREATMENT

The surgical approach to a paraduodenal hernia is the same as that of any hernia, that is reduce the hernia, restore the normal anatomy and repair the defect. Timely surgical intervention is important due to the very high (50%) lifetime probability of incarceration or strangulation. 5 10 With a left-sided hernia, care must be taken not to damage the left colic artery or inferior mesenteric vessels, which are often found anterior to the hernia opening. Similarly, care must be taken not to damage the superior mesenteric vessels in the repair of a right-sided hernia. While an open operation is the usual approach to this condition, successful laparoscopic repair of the right11 and left12 13 paraduodenal hernias have been reported in the literature. A recent small case series comparing laparoscopic to open repair of paraduodenal hernias showed that the laparoscopic approach resulted in a shorter hospital stay, earlier intake of soft diet and a lower rate of postoperative ileus.13The patient was brought to the

Figure 5: Showing hernial sac with its content protruding from abdominal cavity

Figure 6: A tight adhesive band close to the neck of hernial sac

Figure 7: After releasing band released edematous bowel loops

Figure 8: Gangranous bowel loops

operating room for investigation of her small bowel obstruction. An exploratory laparotomy revealed an abnormal anatomy, with dilated loops of small bowel within a hernial sac in the central abdomen. The hernia appeared to protrude through the mesentery of the large bowel and inco rporated a large segment of ileum. A tight adhesive band close to the neck of the hernia sac along the mesentery of the small bowel was found and removed. Once this was performed, it became possible to reduce the contents of the hernia and sac closed with vicryl 2-0 persting suture. Around 80-90 cm of distal ileum was edematous. 35 cm of distal ileum which was gangrenous, resected and double barrel ileostomy created on right side.

FINAL DIAGNOSIS

- Internal hernias are an uncommon cause of intestinal obstruction, accounting for 0.2% to 0.9% of cases. An internal hernia is formed when a viscus protrudes through a mesenteric or peritoneal orifice within the peritoneal cavity.
- Paraduodenal hernias are the most common type of internal hernias, accounting for more than 50% of reported cases.
- Paraduodenal hernias usually present with symptoms of acute small bowel obstruction such as nausea,vomiting, abdominal pain and distension with a background of recurrent vague abdominal pain.
- Paraduodenal hernias should be included in the differential diagnosis of any patient with a diagnosis of small bowel obstruction in the absence of previous abdominal surgery.
- Timely surgical intervention should be undertaken to minimise the mortality and morbidity associated with the acute presentation of a paraduodenal hernia.

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