

Left Paraduodenal Hernia: A Rare Cause of Large Bowel Obstruction and Gangrene

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ABSTRACT

Internal hernias are a rare cause of intestinal obstruction. Paraduodenal hernias are the most common type of internal hernias. Although small bowel obstruction is associated with internal hernias, large bowel obstruction is unique. The authors here report a case of left para duodenal hernia with simultaneous small and large bowel obstruction and gangrene. The patient underwent emergency laparotomy and generous resection of gangrenous small and large bowel was carried out and stoma was created. Postoperatively, the patient had a smooth recovery and was discharged after a few days. Reversal of stoma was carried out after 2 months.

Key words: *Internal hernia. Intestinal obstruction. Gangrene. Paraduodenal hernia.*

INTRODUCTION

Paraduodenal hernias are the most common cause of internal herniation.¹ However, they make up only 1% of cases of small bowel obstruction.² They are more common on the left side.³ Patients diagnosed with a paraduodenal hernia have a 50% life-time risk of small bowel obstruction.⁴ Although small bowel obstruction is associated with left paraduodenal hernias, large bowel obstruction and gangrene are not reported.

Here we report a case of left paraduodenal hernia leading to small and large bowel obstruction and gangrene.

CASE REPORT

An 18 years old female was brought to the Emergency Department of Civil Hospital, Karachi with a 5-day history of intermittent abdominal distention, vomiting and constipation that had become progressive and persistent for the last 1 day. She had no past history of similar episodes.

On examination, the patient looked dehydrated with a pulse of 105 beats/minute and blood pressure of 100/60 mmHg. Her abdomen was severely distended with mild tenderness. On auscultation gut sounds were hyperactive. The patient was placed on conservative management with NG and Foley's catheterization and intravenous fluids. Laboratory data including biochemistry were normal. Abdominal X-rays were obtained which showed dilated small bowel loops predominantly in the left lower quadrant with massive caecal dilatation (Figure 1). A plan was made to get CT scan abdomen,

however; due to deteriorating condition of the patient she underwent emergency laparotomy.

On laparotomy, massively dilated caecum, part of ascending colon and small bowel loops were found covered with a sac of stretched peritoneum (Figure 2). The sac was opened since the bowel could not be delivered out of the sac. On opening the sac, almost the whole jejunum and ileum were found present in the sac along with part of right colon. Around 3.5 feet of distal ileum, caecum and part of ascending colon were massively dilated and gangrenous (Figure 3). Due to adhesions and distorted anatomy, the origin of herniation was located with difficulty which was present to the left of fourth part of duodenum. A generous resection had to be carried out including gangrenous small bowel, caecum, ascending colon and proximal thirds of transverse colon. The cut ends were brought out as ileostomy and colostomy. Patient had an uneventful recovery and was re-operated after 8 weeks for reversal of stoma.

DISCUSSION

Around 0.5 - 5.8% of intestinal obstruction is due to internal hernias.⁵ Left paraduodenal hernias develop due to congenital malrotation of the midgut into the developing mesentery of the descending colon resulting in small bowel herniating through a defect to the left of the ascending limb of duodenum and inferior mesenteric vein.³ On laparotomy, similar findings were noticed in this case. However, due to dilated and gangrenous small and large bowel making up contents of the sac, identification and localization of the hernial orifice and inferior mesenteric vessels was achieved with difficulty.

The clinical presentation of paraduodenal hernia can range from minor bouts of abdominal pain to recurrent intestinal obstruction. The severity of symptoms is generally proportional to duration of hernia and presence or

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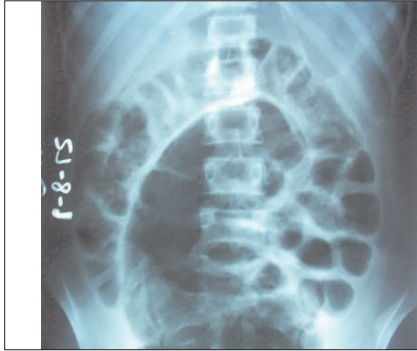


Figure 1: Abdominal X-ray demonstrating clustered small bowel loops in left lower abdomen with massively dilated caecum in the middle.

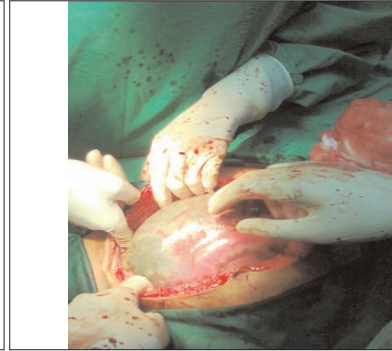


Figure 2: Small bowel and part of large bowel covered with a stretched layer of peritoneum making part of the sac.



Figure 3: Dilated gangrenous caecum and part of ascending colon was found upon incising the sac (gangrenous small bowel not visible in this figure).

absence of incarceration or strangulation.⁶ The mortality associated with paraduodenal hernia is estimated to be around 20-50%.⁷ In the present case, the patient presented with a 5 days history of abdominal complaints with no similar previous episodes. The short history and the resultant pathology with bowel necrosis and gangrene highlights the importance of early intervention in patients suspected of having paraduodenal hernias.

Diagnosis of paraduodenal hernias can be made pre-operatively on small bowel series and CT scans. Plain films usually show signs of bowel obstruction with or without displacement of other structures.⁸ In this case pre-operative plain films demonstrated clusters of small bowel in left abdomen but with a massively dilated and displaced caecum. A decision to perform a CT scan of the abdomen was made but due to patient's rapidly deteriorating condition emergency laparotomy had to be done.

Treatment of left paraduodenal hernias is usually surgical due to the increased morbidity and mortality without intervention.⁴ Surgical options are reduction of the contents of the hernial sac and closure of the defect or incision of the sac.⁹ In this case, since reduction of the contents was not possible, the sac was incised and the contents were delivered. It has been shown that around 20% hernias may need resection of the bowel due to necrosis.¹⁰ In the present case, distal small bowel was resected along with caecum, ascending and proximal part of transverse colon due to gangrene and impending perforation. Recently, laparoscopic repair of paraduodenal hernias has also been attempted successfully as the diagnosis was made pre-operatively.¹¹

The association between paraduodenal hernias and small bowel obstruction is well known.^{3,4} However, a paraduodenal hernia leading to both small and large bowel obstruction and gangrene is not well documented. The authors in this case report have highlighted a unique

presentation of a left paraduodenal hernia leading to both small and large bowel obstruction and gangrene thus, necessitating a major abdominal surgery.

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