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CASE REPORT

AN UNUSUAL CAUSE OF ACUTE SMALL BOWEL OBSTRUCTION

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ABSTRACT

Up to 20% of admissions with severe acute abdomen are due to intestinal obstruction, a common surgical emergency. Paraduodenal hernia is a rare entity of congenital internal hernia which is an unusual cause of small bowel obstruction. This case report describes the case of a 29-year-old woman with acute pain abdomen and vomiting without other significant past history. Radiological investigations revealed mechanical bowel obstruction and gangrenous bowel loops was evident on surgical exploration. Non-viable small bowel loop was resected and peritoneal defect was sutured. Left paraduodenal hernia is a rare cause of acute abdomen and high index of suspicion is required for early diagnosis and management.

INTRODUCTION

Projection of viscera most commonly small intestinal loops from peritoneal or mesenteric defects into the abdominal or pelvic compartment is termed as internal hernia.[1] Internal hernia incidence is reported to range from 0.2% to 0.9%.[2] The most prevalent type of internal hernia is the paraduodenal hernia, despite being uncommon in clinical practice.[3] Paraduodenal hernias accounts for 53% of all internal hernias.[4] Paraduodenal hernia can be categorized as the right (25%) and left (75%) types based on radiological examinations.[5]

A paraduodenal hernia may be asymptomatic or present with vague symptoms like persistent abdominal pain or digestive problems, but it can also cause bowel obstruction that, if left untreated surgically and without diagnosis, may lead to bowel incarceration and perforation.[6]

This case report details a left paraduodenal hernia in a 29-year-old woman who presented with acute abdominal pain with vomiting and was diagnosed with abdominal CT and managed with open surgery with a favorable clinical outcome.

CASE REPORT

A 29-year-old female presented to emergency department with complaint of severe epigastric pain and multiple episodes of vomiting for 16 hours. She also complained of mild abdominal distension. She was passing flatus however did not pass stool in this period. She had no history of fever, weight loss or night sweats. She had normal bowel habits prior to this episode. She had no remarkable medical or surgical history in the past and family history was non-contributory.

She was ill looking with agonizing pain and her systolic blood pressure was unrecordable. She had tachycardia in the range of 130-150 bpm. Her abdomen was distended and tender on palpation.

Blood analysis showed leukocytosis of 15000/mm^3. ABG showed lactate of 4.7. Rest of hematological, biochemical parameters and urine examination showed no abnormalities. Plain abdominal radiography showed few air-fluid levels with no evidence of pneumoperitoneum (Fig.1). Ultrasound of abdomen and pelvis showed normal study.

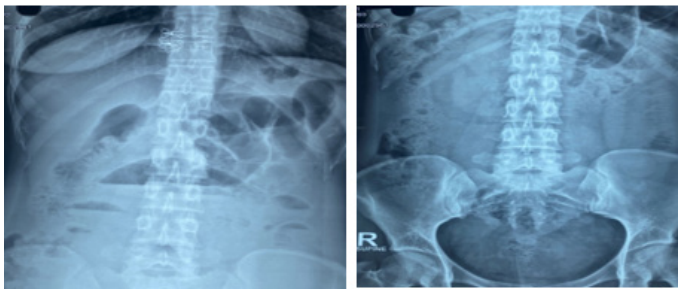

Figure 1: Plain abdominal X-ray in erect and supine position showing multiple air fluid levels

Contrast enhanced computed tomography showed circular orientation of proximal jejunal loops with small bowel faeces sign in the left upper quadrant of abdomen along with diffuse thickening with hypo enhancing distal jejunal, proximal and mid ileal loops likely ischemic loop. Gross ascites was also noted (Fig.2).

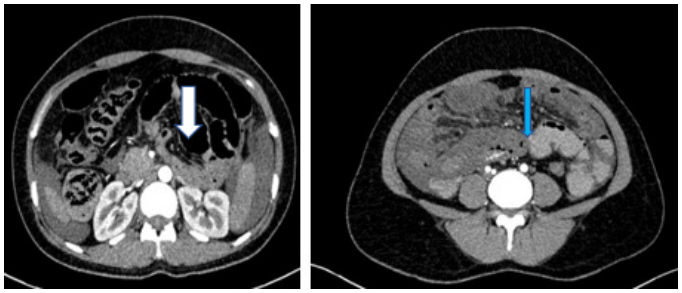

Figure 2: Contrast enhanced axial CT of abdomen and pelvis showing clumping of bowel loops in left upper quadrant (white arrow) and transition point (blue arrow)

Based on these findings, patient was diagnosed provisionally as a case of internal hernia with possible bowel infarction. Exploratory laparotomy was performed after proper informed consent via a midline incision, which revealed approximately 120 cm of gangrenous small bowel involving distal jejunum and proximal ileum that was 160cm distal to duodenojejunal flexure, proximal jejunum was encapsulated in the peritoneal sac that was viable. Inferior mesenteric vein was overlying anterior to the sac. Band containing left colic vessel was found which was overlying the transition point of gangrenous and viable bowel loops (Fig.3).

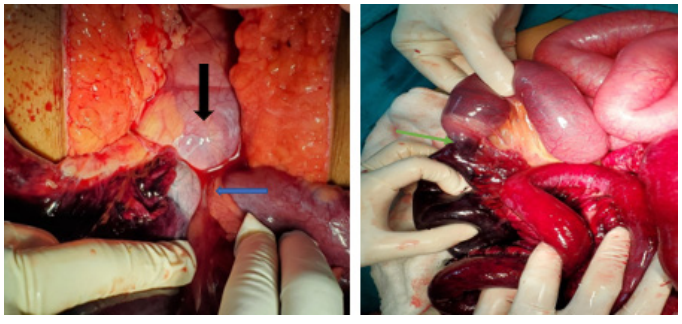

Figure 3: Intraoperative picture showing peritoneal sac (black arrow) with small bowel loops as content. Band containing left colic vessel (blue arrow). Gangrenous segment of distal jejunum and proximal ileum with transition (green arrow)

Figure 4: Peritoneal sac after contents reduced (green arrow)

The gangrenous portion of bowel was resected and anastomotic jejunoileostomy was created, defects in the mesocolon and hernia orifice were closed using nonabsorbable sutures. Additional scrutiny revealed no other intraabdominal abnormality. Postoperatively, the patient developed surgical site infection which was managed with dressing and secondary suturing, rest of the post operative period was uneventful and she was discharged on 11th postoperative day. Reversal of jejunoileostomy was done after 3 weeks and postoperative course was uneventful except surgical site infection.

DISCUSSION

Less than 200 cases of paraduodenal hernia have been described in the literature.[7] 0.5% to 0.9% instances of bowel obstructions are attributed to internal hernias.[8] Paraduodenal hernia are caused by a malrotation of the midgut during the embryonic life, as well as by an abnormal peritoneal fixation and vascular folds.[7] Left PDH carries 50% lifetime risk for complications. The pre-arterial part of the midgut fails to rotate correctly during embryonic development of the midgut, becoming trapped behind the colonic mesentery to form a peritoneal pocket containing the small bowel and the distal ileum. This congenital abnormality is associated with the development of paraduodenal hernia.[6] In utero herniation of the small intestine between the inferior mesenteric vein (IMV) and the posterior parietal attachments of the descending mesocolon to the retroperitoneum is hypothesized to be the etiology of left PDH. In left PDH, the IMV is a crucial part of the hernia sac as the small bowel herniates via the left paraduodenal fossa of Landzert and gets encased behind the descending mesocolon.[7]

Clinical manifestations range from being completely symptom-free and discovered by chance during imaging, surgery, or autopsy to having features of bowel obstruction with a risk of intestinal ischemia, gangrene, and perforation.[9] Non-specific symptoms such as chronic recurring abdominal pain, nausea and vomiting especially in the postprandial period have been reported.[10]

Abdominal CT is diagnostic modality of choice which shows encapsulated sac with various intestinal loops at the level of ligament of Treitz. Small bowel loops crowded together within the hernial sac, showing signs of obstruction along with

segmental enlargement and stasis can be found on CT.[11]

Surgical treatment of paraduodenal hernia is indicated upon diagnosis irrespective of clinical presentation due to increased lifetime risk of complications with more than 50% risk of incarceration or strangulation and 20-50% of mortality risk.[12] Principle of operative correction includes reduction of content and closure of defect.[6]

CONCLUSION

Left paraduodenal hernia is a rare cause of acute abdomen. In young adults with acute abdomen, it is critical to reckon internal hernias as a differential diagnosis with high index of clinical suspicion for early diagnosis and management.

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