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GI IMAGE

Paraduodenal Hernia: a Rare Cause of Acute Abdominal Pain

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Case

The patient is a 53-year-old male with a past medical history significant for hypothyroidism and nephrolithiasis who presented to the emergency room with acute left-sided abdominal pain which he believed was a "kidney stone." He had no surgical history. Vitals were normal and his physical exam was unremarkable. The patient denied any nausea or vomiting, and his last bowel movement was the day of his presentation. His lactate was 2.1 mmol/L, and the rest of his labs were unremarkable.

Computerized tomography (CT) of the abdomen and pelvis revealed a small saclike cluster of small bowel segments in the left hemiabdomen, consistent with a left paraduodenal hernia (PDH). There was no evidence of bowel loop dilation or obstruction on imaging. The patient elected to undergo surgical repair via laparotomy with reduction of the hernia, removal of the hernia sac, and closure of the defect. His post-operative course was uneventful, and he was discharged on post-operative day 3.

PDHs are rare internal abdominal hernias believed to arise when there is a failure of the mesoderm to fuse to the retroperitoneum.[1] These internal hernias are responsible for less than 2% of all small bowel obstructions, and literature on this clinical entity is scarce.[2] PDHs can be subdivided anatomically into left and right sides. Left PDHs occur when the intestines herniate through a congenital peritoneal opening of the mesentery known as Landzert's fossa.[1] Similarly, right PDHs herniate into an opening called the fossa of Waldeyer.[1]

PDHs have a characteristic radiographic appearance that aids in their identification on CT imaging. In the case of left PDHs, prominent saclike clusters of small bowel can be seen protruding between the stomach and pancreas, displacing the stomach superiorly, the descending colon laterally, and the transverse colon inferiorly.[2,3] These findings are best appreciated in the sagittal and coronal sections (Fig. 1a, b). In the axial plane, the mesenteric vessels are often crowded at the neck of the hernia sack (Fig. 1c).[2,3]

Although frequently asymptomatic, PDHs have a 50% lifetime risk of causing small bowel obstruction, and in acute cases, the mortality of these events has been estimated at 20–50%.[2] As such, surgical repair is required once identified to avoid future complications. In general, the surgical approach includes reduction of the herniated contents, resection of the hernia sac, and closure of the defect.[1,2] With the repair of left-sided PDHs, care must be taken to avoid injury to the ascending left colic artery and the inferior mesenteric vein (Fig. 2).[1]

All authors:

1. Made substantial contributions to the conception or design of the work, or the acquisition analysis, or interpretation of data for the work.
2. Made substantial contributions drafting the work or revising it critically for important intellectual content.
3. Gave final approval of the version to be published.
4. Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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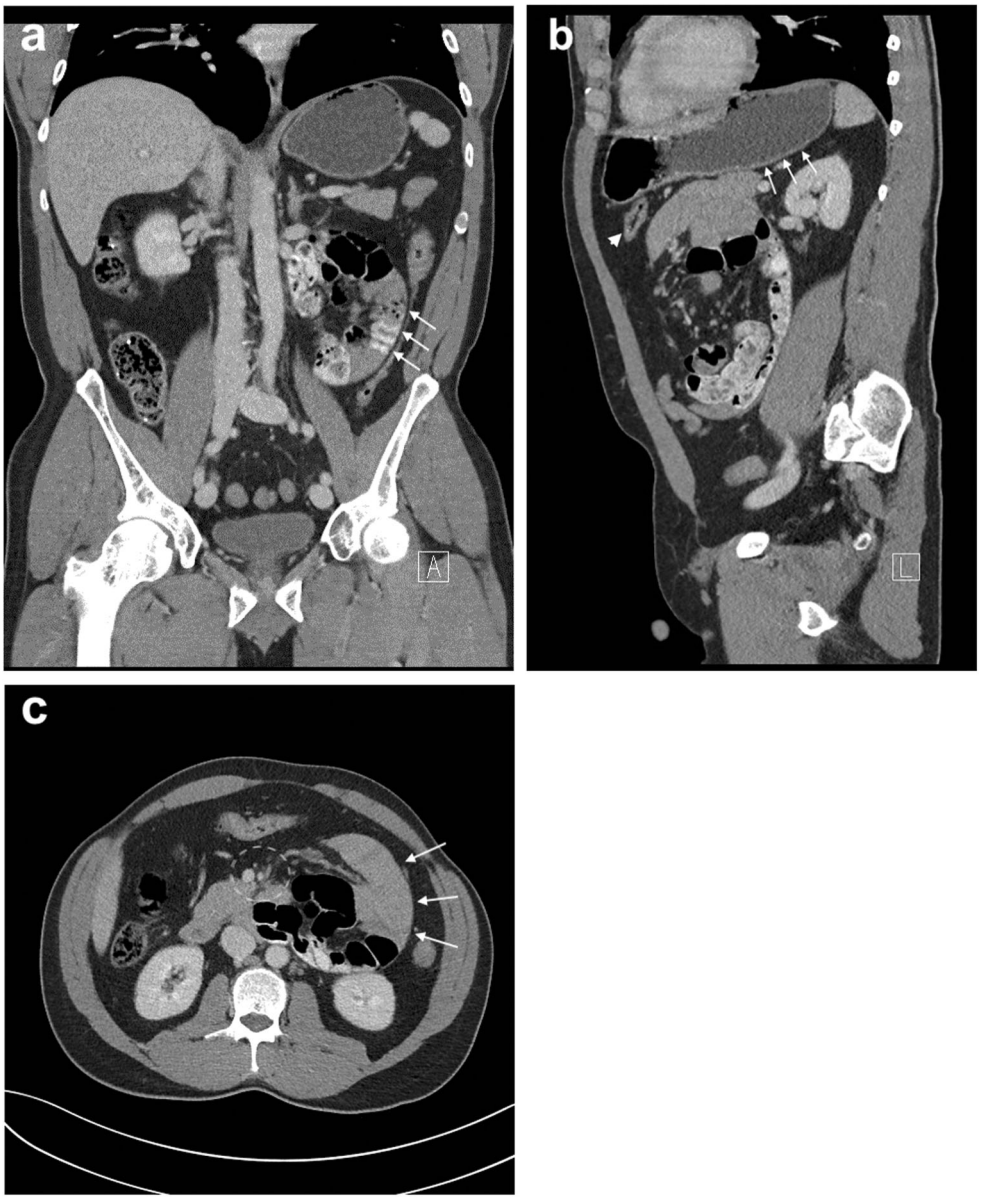

Fig. 1 **a** Coronal section of left paraduodenal hernia. The hernia sac is seen compressing the descending colon (white arrows). **b** Sagittal section. The superior aspect of the hernia sac is abutting and displacing the posterior stomach wall (white arrows) and transverse colon (arrowhead). **c** Axial section of hernia sac (arrows) and crowded mesenteric vessels (dotted circle) to the right

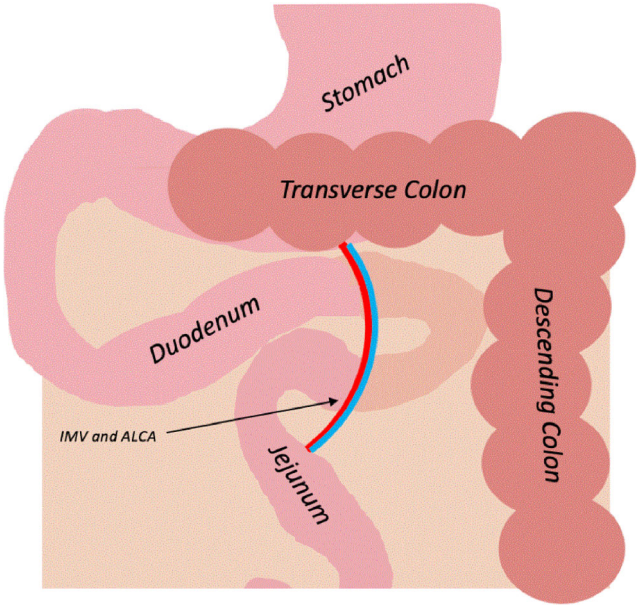

Fig. 2 The left PDH. The duodenum and jejunum have herniated into Landzert's fossa. Note the inferior mesenteric vein (IMV) and ascending left colic artery (ALCA), which form the anteromedial border of Landzert's fossa

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