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GI IMAGE

Obstructed Paraduodenal Hernia

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Case

A 16-year-old boy presented with 4 days of nausea and progressive left-sided abdominal pain. He denied diarrhea or constipation. He had no previous surgery, but his medical history was significant for chronic intermittent abdominal pain for 5 years, occasionally associated with nausea, vomiting, and constipation. Multiple prior abdominal X-rays were unremarkable, and three prior CT scans were normal except for mild thickening of the terminal ileum on the last CT. He had been treated for constipation and had an upper GI study that showed no malrotation, with most of the small bowel in the left abdomen. Subsequent prior upper endoscopy 1 year prior was normal, and colonoscopy showed mild ileal inflammation. Biopsies of this area showed reactive inflammation. Serum inflammatory markers (ESR, CRP, IgA levels) were also normal. He had been generally well over the last year, after the extensive prior workup, until 4 days prior to admission. There was no weight loss, fever, or constitutional symptoms.

On physical examination, the patient was moderately distended with mild tenderness in the left upper abdomen without guarding or rebound. His white blood cell count was $10 \times 10^3/\mu L$ and the remainder of his laboratory tests were normal.

Subsequently, a computed tomogram of his abdomen and pelvis was done (Fig. 1), and the surgical service was consulted for possible bowel obstruction. Oral contrast was given, but the patient vomited. A nasogastric tube was placed and yielded 1 L of bilious output. Diagnostic laparoscopy with possible laparotomy was recommended.

Diagnostic laparoscopy showed a normal cecal location and mildly dilated viable small bowel within a thin saclike structure. The root of the mesentry was difficult to assess laparoscopically. Laparotomy revealed a left paraduodenal hernia with most of the small bowel herniating through a space between the inferior mesenteric vein/artery and duodenojejunal junction into a large, fine sac lying over the retroperitoneum in the left abdomen, with only a few loops of the most distal ileum excluded from the sac (Fig. 2). There

Fig. 1 Contrast computed tomogram of the upper abdomen

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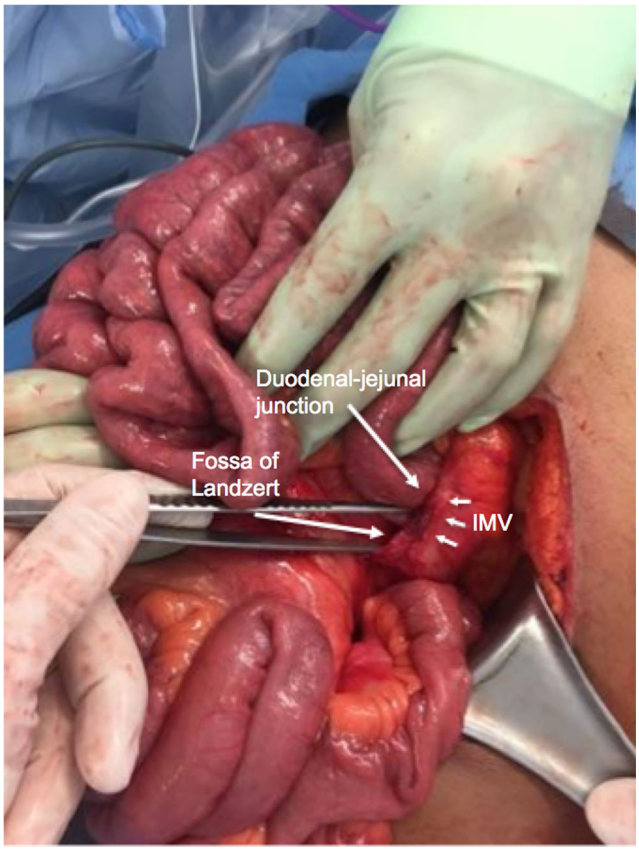

Fig. 2 Intraoperative view of the left upper abdomen with surgical forceps at the origin of the left paraduodenal hernia with the tips under the inferior mesenteric vessels and the duodenojejunal junction just superior to the forceps. A large hernia sac composed partly of the colonic mesentery was lateral to the inferior mesenteric vessels (short arrows)

appeared to be partial obstruction of the bowel at the neck of the hernia with mild adhesions, causing the bowel to appear injected and inflamed. Rotation was normal, with the ligament of Treitz left of midline. The small bowel was reduced from the hernia without difficulty and the hernia repaired by tacking the origin of the hernia sac to the retroperitoneum with interrupted non-absorbable sutures.

Discussion

Left paraduodenal hernias are the most common type of internal hernia and involve small bowel herniating through a congenital opening in the mesentery known as the fossa of Landzert. This defect results from failed fusion of the descending colon mesentery to the peritoneum in the left upper quadrant.[1] Herniation through this orifice may result in a closed-loop bowel obstruction and a surgical emergency.

The cluster of well-defined left-sided small bowel loops on CT scan raised concern for a left paraduodenal hernia. On CT, additional findings can include mesenteric vessel defects, with engorgement, twisting, crowding, and stretching of these vessels.

Surgical repair is the definitive therapy for left paraduodenal hernias, as they carry a 50% lifetime risk of complications.[2] The contents of the hernia are reduced and the defect in the mesentery is repaired using sutures or incision of the hernia sac. If there is no suggestion of bowel necrosis, a laparoscopic approach may be feasable.[3] Use of mesh is reserved for large defects and recurrent hernias. Alternatively, if the hernia contents are difficult to reduce because of their bulk or adhesions within the sac, resecting the inferior mesenteric vessels may be necessary.[3]

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3. Doruk Erman Ozgediz, MD, MSc, FACS, FAAP: Study concept and design, acquisition of data, analysis, drafting of manuscript.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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