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Paraduodenal Hernia: A Rare Cause of Small Bowel Obstruction

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A 15-week-old female was transferred to our institution with intermittent bilious emesis since 4 weeks of age. Previous evaluation included normal bloodwork, pyloric ultrasound, and upper gastrointestinal series (UGI). Upper endoscopy showed a dilated duodenal bulb and a difficult to pass duodenal sweep, without signs of a duodenal web. Contrast was injected into the duodenum, and CINE images (Image 1) showed a pigtail configuration of the duodenum. Biopsies were not taken. The patient underwent exploratory laparotomy that revealed a left paraduodenal hernia (PDH), incomplete rotation, partial obstruction, and anomalous bands between the small bowel and colon (Image 2). The PDH was reduced, and a Ladd's procedure was successfully completed.

The differential diagnosis for bilious emesis includes annular pancreas, duodenal web, duodenal atresia, jejunoileal atresia, duplication cyst, meconium ileus/plug, necrotizing enterocolitis, preduodenal portal vein, Ladd's bands, and malrotation with midgut volvulus (1), with PDH rarely being described. PDHs are rare congenital hernias, which occur most commonly on the left (2). A left PDH results from failure of the mesocolon to fuse with the parietal peritoneum, and a right PDH occurs from incomplete rotation of the midgut. The resultant paraduodenal fossa allows small intestinal herniation with possible bowel entrapment and ischemia (3,4).

UGI has limitations as a diagnostic tool for intestinal malrotation and other intestinal anatomical abnormalities. In this case, intraoperative fluoroscopy clearly showed the pigtail configuration of the duodenum, demonstrating the benefit of this diagnostic tool over UGI. Although computed tomography is the preferred imaging modality for PDH in adults, in a small pediatric case series of PDH, imaging studies varied based on the clinical presentation (5).

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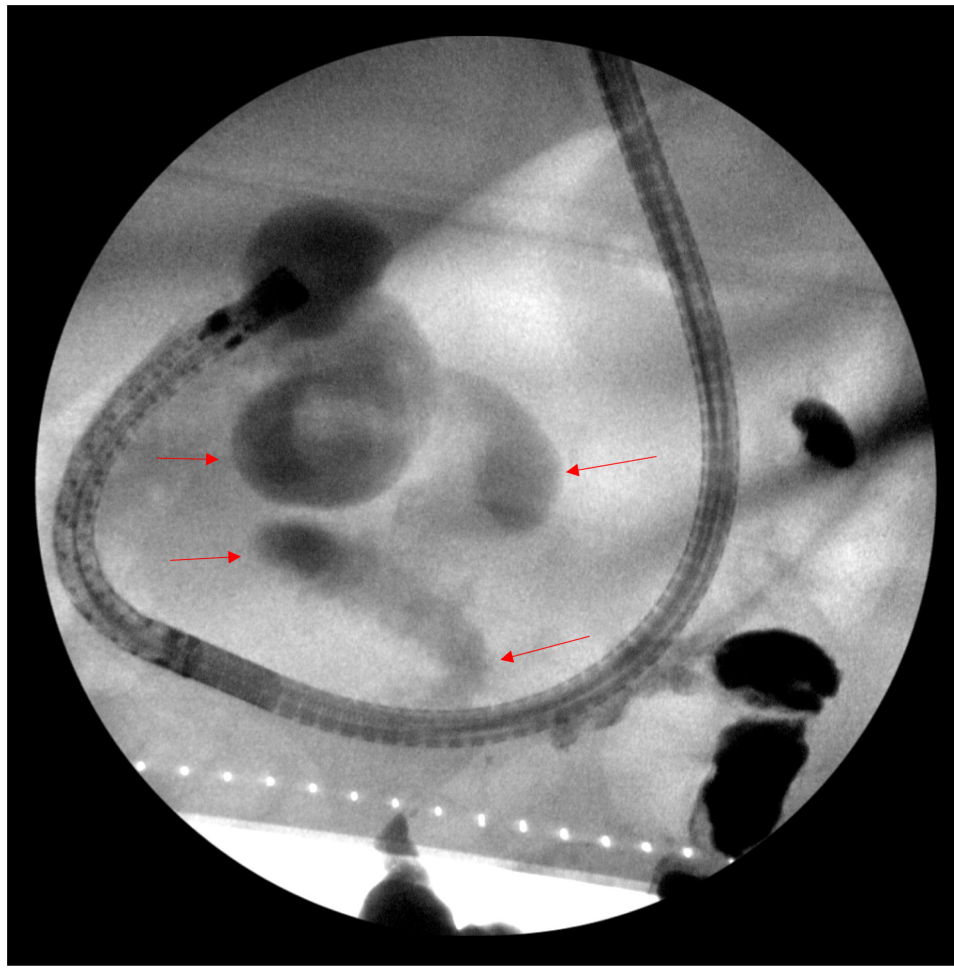

IMAGE 1. Intraoperative fluoroscopy showing a corkscrew/pigtail course of the duodenum (arrows). Proximal jejunal small bowel not in the left upper quadrant; but instead, in the paraduondenal hernia sac.

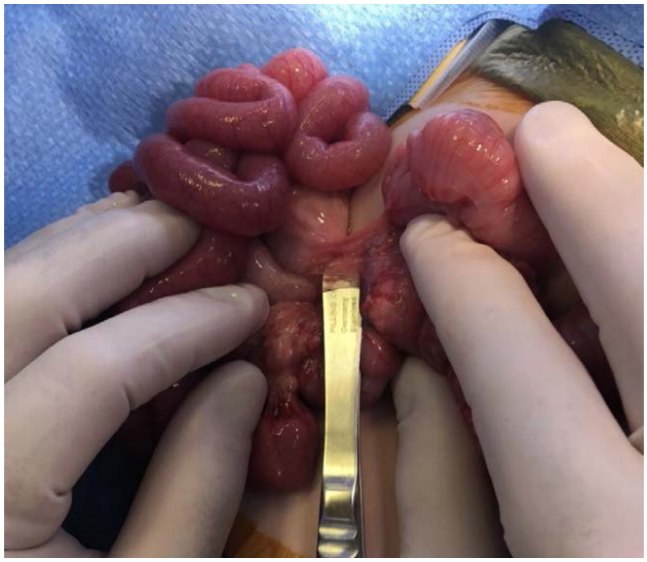

IMAGE 2. Intraoperative photo of anomalous bands (highlighted by the DeBakey) that are connecting the duodenum (on the left) with the colon (on the right). Picture taken after small intestine reduced from the paraduodenal fossa.