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Where Did the Blood Go?: A Meckel's Diverticulum Bleed Without Hematochezia or Melena

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Abstract: A 2-year-old patient with chronic abdominal pain presented with acutely worsening abdominal pain and acute anemia. The patient had no stigmata of bleeding including no hematemesis, melena or hematochezia, but had falling hemoglobin and hematocrit over the course of 24 hours. Abdominal ultrasound and computerized tomography showed a large cystic, fluid filled mass in the right midabdomen. The patient was taken to the operating room and a blood-filled mass arising from the ileum was identified and resected by the surgical team. Pathology was consistent with Meckel's diverticulum with heterotopic gastric mucosa. This is an atypical presentation of Meckel's diverticulum with bleeding contained within the diverticulum rather than bleeding in the intestinal lumen. Gastroenterologists must consider this unusual presentation when encountering progressive, acute anemia even in the absence of overt gastrointestinal blood loss.

Key Words: gastrointestinal bleed, Meckel's diverticulum, acute anemia

INTRODUCTION

Meckel's diverticulum is the most common congenital malformation of the gastrointestinal tract (1). They occur in roughly 2%-4% (2) of the population and are the result of incomplete involution of the omphalomesenteric duct during embryologic development. The most common presentation of Meckel's diverticulum in pediatric patients is gastrointestinal bleeding (2,3). This case report reviews an unusual presentation of Meckel's diverticulum of chronic abdominal pain and acute anemia.

CASE REPORT

The patient is a 2-year-old male with chronic abdominal pain presenting with acutely worsening abdominal pain and acute anemia.

The patient had been followed previously by a pediatric gastroenterologist for chronic abdominal pain for 1 year. Pain was intermittent and came in distinct waves with screaming and crying, refusal to eat or drink and nonbloody, nonbilious emesis. Between pain episodes, the patient was well with no complaints. He was growing well. His past gastroenterology work-up included normal complete blood count, normal inflammatory markers, and normal total IgA and tissue transglutaminase IgA. Due to his chronic symptoms of pain and normal laboratory studies, he also had extensive imaging including normal upper gastrointestinal series, normal abdominal ultrasound, normal esophagogastroduodenoscopy, and normal colonoscopy all within the prior 3 months.

On the day of presentation, the patient awoke with severe abdominal pain and refused oral intake. He was seen at an emergency department (ED) for these complaints. At the first ED visit, he had normal vital signs. The patient had an abdominal plain film that showed a nonobstructive gas pattern. The patient also had an ultrasound to evaluate for intussusception that showed no evidence of intussusception. Laboratory work at that time showed hemoglobin (Hgb) 9.3 g/dL, hematocrit (Hct) 29.1%. The patient was discharged home given stable examination. The patient presented again to the ED later in the day due to 5 episodes of nonbloody, nonbilious emesis. At this time, repeat laboratory work up showed Hgb 7.8 g/dL, Hct 24.8%, though vitals remained stable. The patient was then transferred to a pediatric ED.

In the pediatric ED, laboratory work was repeated and showed worsening anemia, now Hgb 7.1 g/dL, Hct 22.8%. The patient had no hematemesis and had not stooled for over 24 hours, thus had no melena or hematochezia. On rectal examination, the patient did have hemoccult positive stool in the pediatric ED. He continued to have stable vitals. His examination was notable for crying upon examination with apparent diffusely tender abdomen, though no overt signs of peritonitis.

Ultrasound was repeated and showed a "well-marginated ovoid lesion in the right upper quadrant in the epigastric region measuring approximately 4 × 2.7 × 3.8 cm which demonstrates a multilayered wall appearance resembling gut signature, predominantly fluid-filled with intraluminal echogenic foci" (Fig. 1). At this time, the surgical team was consulted. A computerized tomography of the abdomen and pelvis was completed for more detailed imaging and surgical planning which showed a "thick-walled cystic lesion (4 × 3 × 4 cm) in the midright abdomen with surrounding moderate-free fluid and questionable fleck of free air" (Fig. 2). Differential diagnosis at this time included hemorrhagic Meckel's diverticulum versus enteric duplication cyst.

The patient was brought to the operating room by the surgical team for diagnostic laparoscopy. Intraoperatively, the patient was found to have hemoperitoneum with a large cystic structure arising from the ileum (Fig. 3). The structure was covered by adjacent mesentery and omentum that had become adherent to its surface. Once freed, the lesion was noted to be arising from the antimesenteric surface of the involved ileum and was inflamed with evidence of a serosal defect, possibly representing a sealed perforation. The structure was externalized via a small periumbilical incision. The surrounding intestine was grossly normal in appearance with no ulceration or bleeding allowing the lesion to be resected and the resulting enterotomy repaired primarily with interrupted sutures. Pathology confirmed this was a Meckel's diverticulum with heterotopic gastric mucosa.

The patient did well postoperatively and was discharged home on postoperative day 3. Consent was obtained from the family for publication of the case details.

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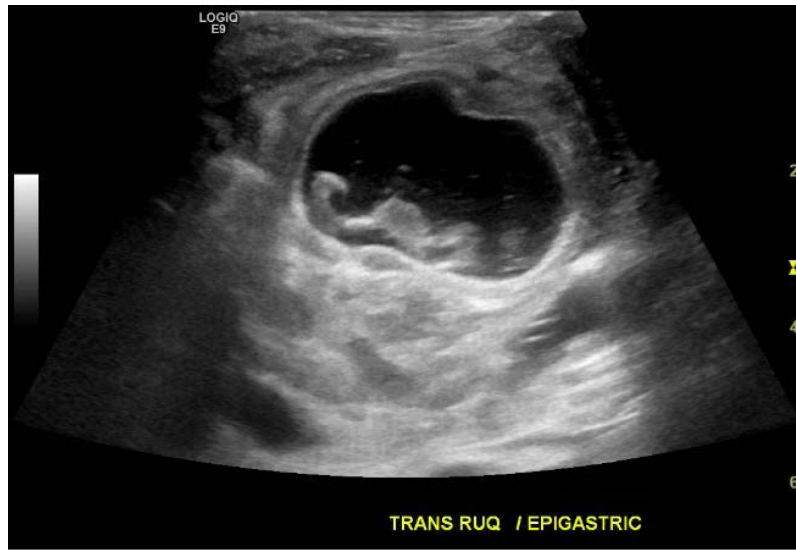

FIGURE 1. Abdominal ultrasound showing a well-marginated ovoid lesion in the right upper quadrant in the epigastric region measuring approximately 4 × 2.7 × 3.8 cm with a multilayered wall appearance resembling gut signature.

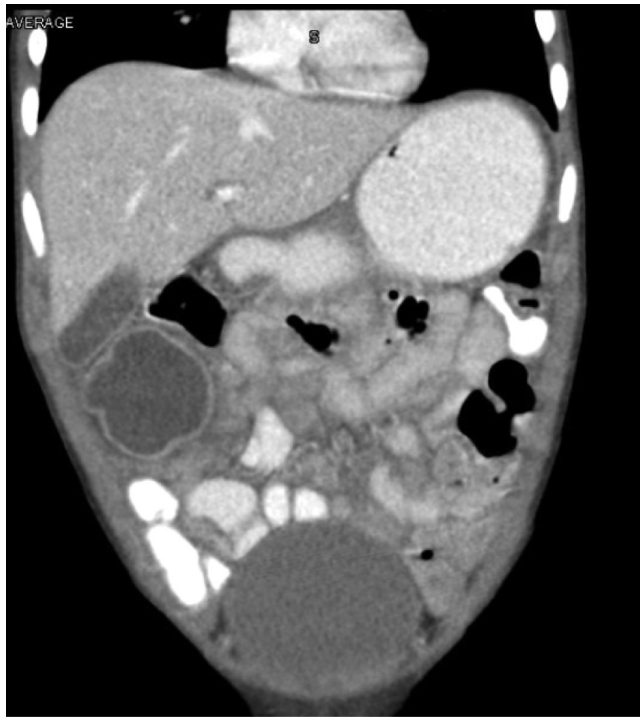

FIGURE 2. Abdominal computerized tomography showing thick-walled cystic structure in the right upper quadrant of abdomen, measuring 4.4 × 3.0 × 4.1 cm, with surrounding small to moderate amount of free fluid. Seems to be in continuity with a small bowel loop posteriorly.

DISCUSSION

This case is an unusual presentation of a Meckel's diverticulum. The common teaching is that Meckel's diverticulum cause ulceration in the adjacent small bowel due to secretion of acid by ectopic gastric mucosa within the diverticulum. When bleeding occurs from these ulcers, bleeding is into the intestinal lumen, which causes symptomatic bleeding with melena or hematochezia. Our

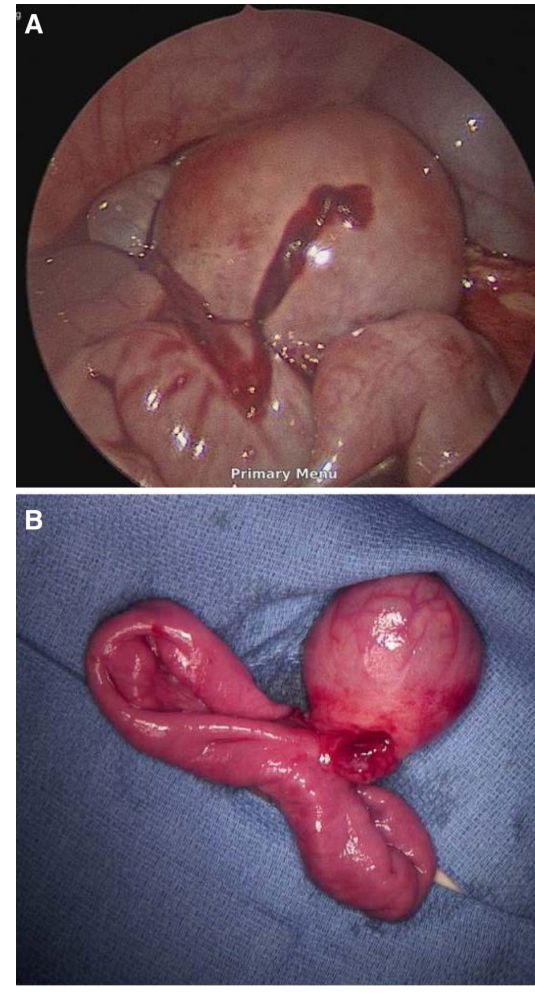

FIGURE 3. Photographs from the operating room showing (A) laparoscopic view of hemoperitoneum with large cystic structure arising from the distal ileum, and (B) cystic structure before excision after minilaparotomy.

patient presented with acute anemia, but no overt bleeding, namely no hematemesis, melena, or hematochezia. Instead, this patient bled into the diverticulum itself.

The most common presentation of Meckel's diverticulum in pediatric patients is gastrointestinal bleeding (2,3). Other common presentations of Meckel's diverticulum include diverticulitis/perforation (16%-20%), bowel obstruction (about 14%), and intussusception (12%) (2,3). Acute anemia with no frank bleeding is a very rare presentation of Meckel's diverticulum; there were no other reported cases of this found on literature search. This case highlights the importance of considering Meckel's diverticulum in the differential diagnosis for acute anemia, even without obvious signs of intraluminal bleeding. Intradiverticular bleeding requires surgical intervention and must not be missed. As this case demonstrates, providers must have high clinical suspicion for this and continue to pursue work up so that definitive treatment can be provided to these patients.

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