Case Report

A silent pouch turns deadly: Ruptured meckel's diverticulum

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Abstract

Background: Meckel's diverticulum is the most common congenital gastrointestinal anomaly, which, while typically asymptomatic, can cause acute abdominal emergencies via spontaneous perforation. This case report highlights that rupture often presents as acute abdomen mimicking appendicitis, necessitating urgent surgical intervention such as segmental resection to manage associated peritonitis.

Key Words: Non-bilious vomiting; Small intestinal obstruction; Meckel's diverticulum; Ileocecal valve

1. Case Presentation

A five-year-old well-grown boy was brought to the emergency room with a three-day history of fever, non-bilious vomiting, and abdominal pain. In addition, he developed abdominal distension over the preceding day. Upon examination, the child was afebrile but irritable, displaying significant discomfort and dehydration. Abdominal examination revealed diffuse tenderness across the abdomen and sluggish bowel sounds. Based on these findings, he was provisionally diagnosed with small intestinal obstruction, possibly secondary to Meckel's diverticulum or a duplication cyst.

2. Investigations

Laboratory tests showed an elevated C-reactive protein (CRP) level of 191 mg/dL, while his blood counts and electrolyte levels remained within normal limits. Ultrasound examination of the abdomen revealed fixed, dilated small bowel loops suggestive of obstruction. Contrast-enhanced computed tomography (CECT) of the abdomen confirmed small intestine obstruction along with partial malrotation.

3. Initial Management

The child was kept nil by mouth and started on intravenous fluids, antiemetics, proton pump inhibitors, intravenous Piperacillin-Tazobactam and Metronidazole.

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4. Intraoperative Findings

Laparoscopic exploration revealed a perforated Meckel's diverticulum, located at the lateral urinary bladder wall, approximately 5 cm proximal to the ileocecal valve. The small bowel loops proximal to the diverticulum were dilated, whereas the distal bowel collapsed. Approximately 300 ml of pus was drained from the peritoneal cavity. Following a thorough bowel wash, Meckel's diverticulum was resected, and an ileoileal anastomosis was performed.

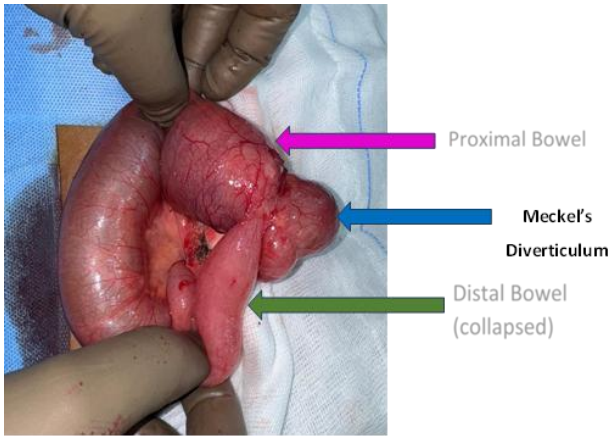

Fig (1): Depicts hands holding a large intestine, highlighting the pink dilated proximal bowel, blue Meckel's diverticulum, and green collapsed distal loop.

5. Postoperative Progress

A liquid diet was initiated on 3rd post-operative day, which he tolerated well. His diet gradually advanced to normal solid food and discharged on 7th post-operative day.

6. Literature review

Meckel's diverticulum is the most common congenital anomaly of the gastrointestinal tract. It results from incomplete obliteration of the vitelline (omphalomesenteric) duct during embryonic development [1]. It is a true diverticulum, containing all layers of the intestinal wall, and arises from the antimesenteric border of the ileum. Although often asymptomatic, it can present with complications such as painless lower gastrointestinal bleeding, inflammation (diverticulitis), intestinal obstruction, or perforation. Only 4–6% of individuals with Meckel's diverticulum develop any complication during their lifetime [2].

Perforation (rupture) is rare, accounting for roughly 0.5–1% of all Meckel's diverticulum cases, and a minority of complicated cases [3]. When perforation occurs, it is often due to diverticulitis, peptic ulceration from ectopic gastric mucosa, foreign bodies, or rarely trauma. Clinically, a ruptured Meckel's diverticulum may mimic acute appendicitis or present with generalized peritonitis, making the diagnosis challenging.

The condition is classically remembered by the "rule of 2s."

- 2% of the population is affected
- Located within 2 feet (≈60 cm) of the ileocecal valve
- About 2 inches (≈5 cm) long

- Contains 2 types of ectopic tissue (most commonly gastric, also pancreatic)
- Commonly presents before 2 years of age
- 2:1 male-to-female ratio

7. Conclusion

Ruptured Meckel's diverticulum is a rare but potentially life-threatening complication that can closely mimic other causes of acute abdomen in children, such as appendicitis or intestinal obstruction. This case highlights the diagnostic challenge posed by its non-specific clinical and radiological features and underscores the importance of maintaining a high index of suspicion in pediatric patients presenting with acute abdominal symptoms and signs of sepsis. Early surgical intervention remains the cornerstone of management and is crucial in preventing morbidity and mortality. Prompt recognition, timely operative management, and appropriate postoperative care can result in favorable outcomes even in complicated presentations such as perforation with peritonitis

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