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Case Report: Meckels Diverticulum presenting as small bowel obstruction in a 14 years old male

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Abstract
Meckel's diverticulum, a congenital anomaly resulting from incomplete closure of the vitelline duct, is the most common congenital malformation of the gastrointestinal tract. Though it is usually asymptomatic, it may present with complications such as bleeding, perforation, or, less frequently, obstruction. This case report describes a 14-year-old male presenting with symptoms of acute intestinal obstruction due to a rare complication of Meckel's diverticulum, which encircled the small bowel loops. Surgical intervention via laparotomy was successful, with the resolution of symptoms and an uneventful recovery. This case emphasizes the importance of considering Meckel's diverticulum in the differential diagnosis of small bowel obstruction in pediatric patients.

Keywords: Meckel's diverticulum, small bowel obstruction, laparotomy, pediatric surgery, case report

Introduction
Meckel's diverticulum is a vestigial remnant of the omphalomesenteric duct and occurs in approximately 2% of the population. Although most cases remain asymptomatic, complications can arise, including bleeding, infection, perforation, and, rarely, obstruction. Intestinal obstruction due to Meckel's diverticulum is infrequent but poses significant diagnostic challenges. This case report presents a 14-year-old male with acute small bowel obstruction caused by a Meckel's diverticulum that had become adherent and encircled the small bowel, leading to a clinical picture of obstruction.

Case Presentation
A 14-year-old male with no significant past medical history was admitted to the hospital with a 2-day history of progressively worsening abdominal pain, vomiting, and constipation. The pain was crampy, initially intermittent, but eventually became constant and localized to the central abdomen. Vomiting was bilious, and the patient had not passed stools or flatus for the preceding 24 hours. On examination, the patient was mildly dehydrated, with a distended abdomen and tenderness in the central and lower quadrants. Bowel sounds were absent on auscultation. Rectal examination revealed no masses, but there was evidence of fecal impaction. Initial laboratory tests showed a mild leukocytosis with normal electrolytes.

Radiological findings
An abdominal X-ray revealed dilated loops of small bowel, consistent with small bowel obstruction. Given the absence of free air and the clinical findings, a contrast-enhanced abdominal CT scan was performed.
The CT scan revealed a dilated small bowel loop with an area of constriction at the mid-small bowel, indicative of an obstruction. A Meckel's diverticulum was noted, encircling the small bowel loops, causing the obstruction.

Surgical Intervention and Findings
On laparotomy, a Meckel’s diverticulum was identified located at the ileum, approximately 30 cm from the ileocecal valve. The diverticulum was found to be long, approximately 8 cm in length, and was causing a mechanical obstruction by encircling the small bowel loops. The surrounding bowel was distended, and there was evidence of congestion in the erected segments of the intestine.

A decision was made to resect the Meckel's diverticulum along with a small portion of the adjacent ileum. The anastomosis was performed without complication, and the bowel was inspected for any further signs of ischemia or perforation. The abdomen was closed in layers, and the patient was intubated in the operating room.

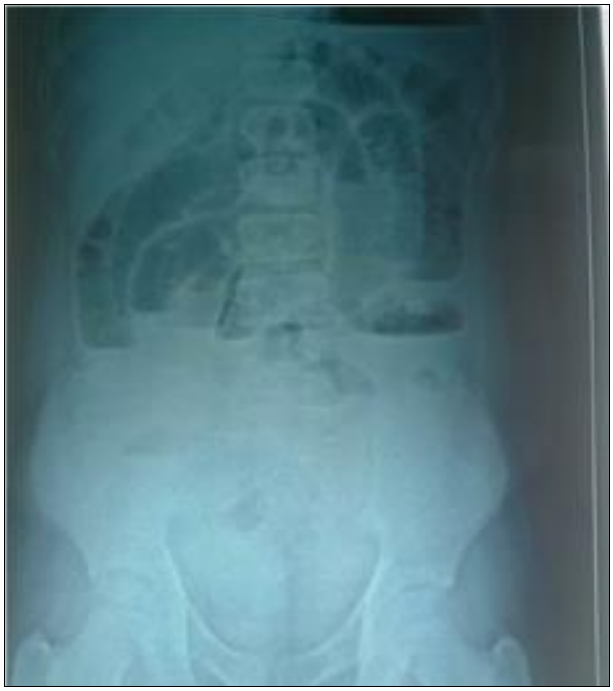

Fig 1: X-ray Radiological

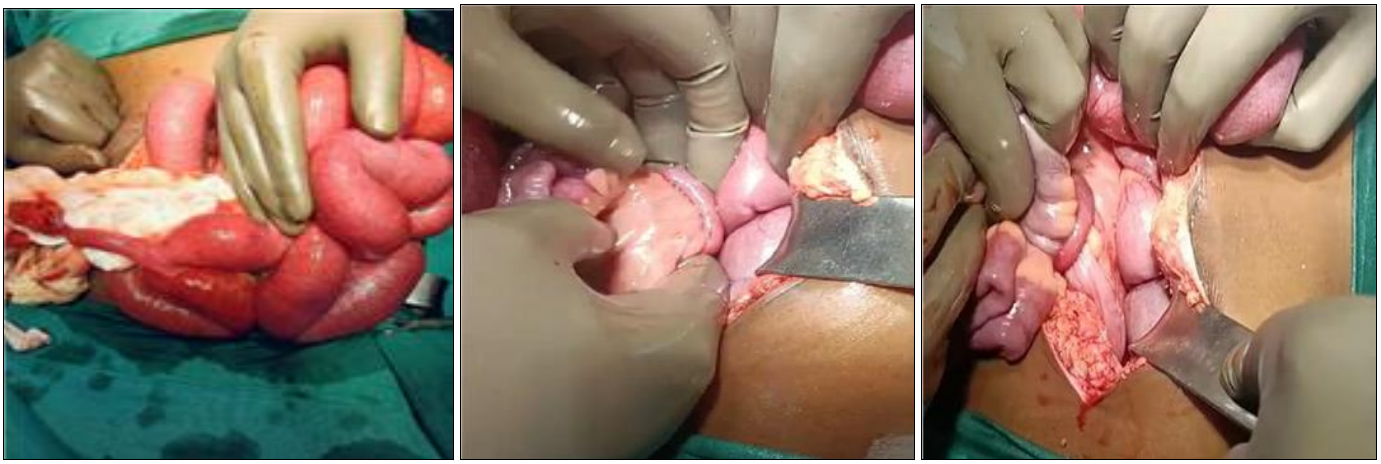

Fig 2: Surgical Intervention

Postoperative Course

The patient was monitored in the pediatric intensive care unit for the first 24 hours, where he showed gradual improvement. His abdominal pain resolved, and he began tolerating oral fluids on postoperative day 2. His bowel function returned to normal on postoperative day 3, with the passage of flatus and stools. The patient was discharged on postoperative day 5, with advice for follow-up in the outpatient clinic.

Histopathology of the resected specimen confirmed the presence of Meckel's diverticulum with no signs of malignancy or infection. The patient's postoperative recovery was uneventful, and there were no complications.

Discussion

Meckel's diverticulum is a congenital anomaly that results from incomplete obliteration of the omphalomesenteric duct. The majority of individuals with a Meckel's diverticulum remain asymptomatic throughout their lives. However, complications arise in approximately 2-4% of patients, with the most common being gastrointestinal bleeding due to ectopic gastric mucosa. Obstruction, though rare, may occur if the diverticulum becomes involved in a volvulus, intussusception, or, as in this case, by encircling the small bowel loops.

The presentation of Meckel's diverticulum with small bowel obstruction can be challenging as its symptoms mimic other causes of obstruction, such as adhesions or hernias. Imaging studies, particularly contrast enhanced CT, can be helpful in diagnosing this condition, but the definitive diagnosis is often made during surgical exploration. As seen in our case, laparotomy with resection of the diverticulum is the diverticulum is the treatment of choice for symptomatic cases.

Conclusion

This case highlights the importance of considering Meckel's diverticulum in the deferential diagnosis of small bowel obstruction in pediatric patients, particularly when there is a

history of vague abdominal symptoms. Early diagnosis and timely surgical intervention are essential to prevent complications. Although the condition is rare, the surgical treatment is highly elective, with excellent long-term outcomes.

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