VOLUME - 12, ISSUE - 04, APRIL - 2023 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

Paediatric Surgery

UNCOMMON PRESENTATION OF MECKEL DIVERTICULUM IN AN INFANT

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ABSTRACT Meckel's diverticulum (MD) is the most common congenital anomaly of the gastrointestinal tract. Painless intestinal hemorrhage is a frequently occurring complication that relates to Meckel's diverticulum in children. Bowel obstruction is a rare complication of Meckel's diverticulum in children. This is to report a case of 1 month old male infant presented with sudden history of abdominal distention and not passing stool for 4 days.

KEYWORDS : Meckel's diverticulum, omphalomesenteric duct, laparotomy

INTRODUCTION:

Meckel's diverticulum is a congenital true diverticulum, found most frequently as a blind ending protrusion of the ileum and communicating with it. Meckel's diverticulum is one of a spectrum of congenital anomalies resulting from the incomplete regression of the omphalomesenteric duct (vitelline duct). It involves all layers of the intestinal wall that typically occurs within 2 feet proximal to the ileocecal valve on the antimesenteric border of the small intestine. Its blood supply is derived from the right vitelline artery which subsequently becomes the superior mesenteric artery. It may have a persistent connection to the umbilicus via a fibrous cord or a patent fistula. Its lining may consist entirely of intestinal mucosa, but often it has heterotopic mucosa within the diverticulum. The most common type of ectopic mucosa is gastric.

The majority of symptomatic patients are found to have ectopic mucosa within the diverticulum. The Meckel's that are asymptomatic are most often lined by normal intestinal epithelium.The most common clinical presentations are: 1) lower gastro-intestinal bleeding secondary to an ulcer produced by heterotopic gastric mucosa; 2) intestinal obstruction; from internal volvulus or intussusception; 3) and local inflammation with or without perforation resembling acute appendicitis. The presentation often will mimic other disease states and can be quite difficult to detect.

Case Study

A one -month-old male child was presented with complaints of rapid breathing for 5 days, not passing stools for 4 days and abdominal distension for 4 days. There was no history of fever, diarrhea and bleeding per rectum. Baby was exclusive breastfeed since birth, gradually developed rapid breathing and not relieved on oral medication and at day 3 of illness child was taken to primary care center where baby was intubated and shifted to mechanical ventilation and been transferred to tertiary center for further management. On presentation vital signs were (blood pressure of 90/50 mm/Hg, a pulse rate of 166 beats/minute, and a temperature of 36. 5°C), no signs of dehydration. On abdominal examination, the abdomen was grossly distended, absent bowel sound, a respiratory rate of 36 breaths/minute on bag and tube ventilation, the biochemical measurement were within the normal limits. An erect abdominal X- ray revealed multiple air fluid levels. A rectal wash was given.

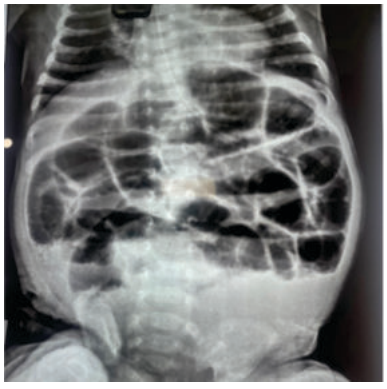

Figure 1: Erect abdominal X-ray revealed multiple air fluid levels**Procedure** done: Meckel's diverticulectomy with double barrel ileostomy.

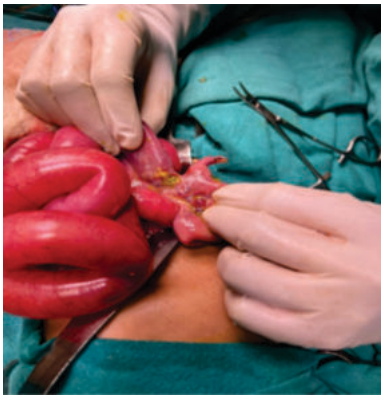

Figure 2: Intraoperative photograph showing Meckel's diverticulum with perforation at the base.

Surgical evaluation under general anesthesia was performed, and a **transverse laparotomy** incision was made. Intraoperative findings:

1) Purulent peritoneal fluid 100ml was drained.
2) Rectum, sigmoid and whole of colon collapsed.
3) Ileocecal junction in right iliac fossa.
4) INFLAMED Meckel's with perforation at its base around 15 cm proximal from ileocecal junction.
5) Proximal bowel grossly dilated and edematous. 6)Kink of intestine at site of perforation.

7) Duodenojejunal junction at normal position.Good peritoneal lavage, placement of drains, closure was done.

DISCUSSION

Meckel diverticulum, is the most common congenital abnormality of the small intestine; it is caused by an incomplete obliteration of the vitelline duct (i.e, failure of the omphalomesenteric duct to close). Although originally described by Fabricius Hildanus in 1598, it is named after Johann Friedrich Meckel, who established its embryonic origin in 1809.[1, 2]. Despite the availability of modern imaging techniques, making the diagnosis is challenging. Although Meckel diverticulum is usually asymptomatic, two types of complications can require clinical attention. One type involves ectopic mucosal tissue and most often leads to gastrointestinal bleeding in younger children. In the second type, an obstruction, inflammation or, rarely, perforation of the bowel is present. An earlier literature review of Meckel diverticulum in the neonatal period found that the most common manifestations in this age were bowel obstruction (58.3%) and pneumoperitoneum (33.3%).[3] In addition, in both term and preterm neonates, males were even more frequently affected than females, with a male-to-female ratio of 6.5:1.[3]. Other neonatal presentations include perforation, intussusception, segmental ileal dilation, ileal volvulus, and massive hematochezia.[4]Complications of Meckel diverticulum typically fall into the categories of bleeding, obstruction, or inflammation (diverticulitis), which could be related to foreign bodies and or tumors. Once a complication arises and surgery is required, the operative mortality and morbidity rates have both been estimated at 12%.[5] The cumulative long-term risk of postoperative complications in this cohort was found to be 7%. If the Meckel diverticulum is removed as an incidental finding, the risk of mortality and morbidity and long-term complications are much lower (1%, 2%, and 2%, respectively).[5] Pandove et al described a case of internal herniation and intestinal obstruction due to Meckel diverticulum.[6] This rare presentation resulted from internal herniation of bowel loops into a sac formed by mesentery of Meckel diverticulum and its adhesion band. As many as 5% of complicated Meckel diverticulum contain malignant tissue.

CONCLUSION:

Possibility of complicated meckel's diverticulum to be kept in mind even if it's not presenting as bleeding PR or intussusception. It can present as intestinal obstruction and pnemoperitoneum also,as it was in our case.

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