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A RARE PRESENTATION OF MECKEL'S DIVERTICULUM

Paediatric Surgery

Dr Mitali Vinodkumar Patil M.B.B.S, Birmole Hospital.

Dr Vamsi Lakshman Pappu Senior Resident, Dept of General Surgery, MGM Medical College and Hospital, Kamothe, Navi Mumbai - 410206

ABSTRACT

Introduction: An uncommon manifestation involving the obstruction of the small bowel due to small bowel herniation through a band originating from Meckel's Diverticulum. **Aims And Objectives:** The study aims to discuss a rare presentation of Meckel's Diverticulum. **Objectives:** Discuss the aetiologies and management of Meckel's Diverticulum. **Methods:** We will be discussing a case of small bowel obstruction due to Meckel's Diverticulum. **Results:** The differential diagnosis of small bowel obstruction in children. **Conclusion:** The diverticulum may pose a life-threatening situation, necessitating prompt surgical intervention.

KEYWORDS

INTRODUCTION:

Meckel's Diverticulum is a prevalent congenital abnormality affecting the small intestine, with an estimated occurrence ranging between 0.3% to 3% in the population(1). In most cases it remains asymptomatic but can be complicated by intestinal obstruction, bleeding or perforation(2). An incidentally discovered Meckel's Diverticulum can be observed without intervention unless it is symptomatic, at which point surgery is mandatory to prevent complications.

CASE DESCRIPTION:

An 8-year-old male child was brought to the emergency department by his parents due to complaints of abdominal pain, abdominal distension, recurrent vomiting, and an inability to pass stools for the past 5 days. The patient described the pain as a dull, aching sensation mainly located in the periumbilical region. There were multiple episodes of non-blood-stained vomiting.

Upon examination, the abdomen was distended, the umbilicus was centrally located, and no visible peristalsis, scars, or dilated veins were observed. The periumbilical region exhibited tenderness without guarding or rigidity. No palpable lump was detected, and percussion yielded a tympanic note throughout. Bowel sounds were sluggish on auscultation. A rectal examination revealed a collapsed rectum with stool staining on the gloved finger.

Abdominal X-ray revealed multiple air-fluid levels, indicative of small bowel obstruction and taken up for a laparotomy. Intraoperative findings included 150 ml of serous fluid in the peritoneal cavity, Meckel's diverticulum with a broad base 2 feet from the ileum (Fig. 2), a band originating from the diverticulum with the ileum herniating through it (Fig. 1), an inflamed 6 cm retrocecal appendix, and multiple small mesenteric lymphadenopathies. The patient underwent Meckel's diverticulectomy with resection and anastomosis of the ileum along with appendicectomy. The postoperative period was uneventful, and the patient experienced a smooth recovery.

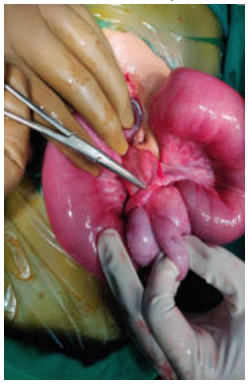

Figure 1: Band arising from Meckel's Diverticulum

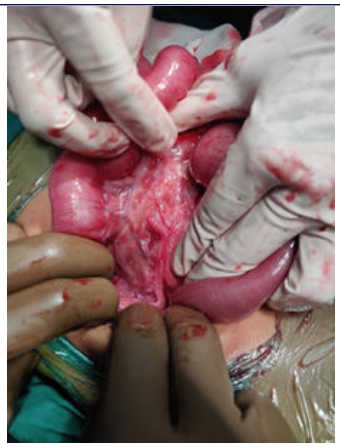

Figure 2: Meckel's Diverticulum with broad base

DISCUSSION:

Meckel's Diverticulum is a congenital outpouching or pouch in the wall of the small intestine, near the junction of the small and large intestines. It is a residual structure resulting from the incomplete closure of the omphalomesenteric duct. This duct, which links the yolk sac to the early foregut through the umbilical cord in the embryo, fails to close completely, giving rise to the vestigial remnant(2). It can present with complications such as inflammation, bleeding, or obstruction, necessitating surgical intervention. It is often discovered incidentally during other medical procedures or investigations. A mesodiverticular band is rare and typically overlooked when making the diagnosis of small bowel obstruction. It frequently extends from the tip of Meckel's Diverticulum to the ileal mesentery and has the potential to cause intestinal obstruction by ensnaring bowel loops. Due to the absence of specific symptoms and the similarity to other surgical emergencies, recognizing Meckel's Diverticulum preoperatively can be challenging. As physical examination findings are inconclusive, additional investigations are often necessary. Ultrasonography may be employed to detect complications in Meckel's Diverticulum, especially in pediatric patients, although its specificity is limited. Typically, it reveals a fluid-filled structure in the right lower quadrant, accompanied by a thick-walled loop of bowel. While a CT scan of the abdomen is the preferred imaging technique for identifying the cause of small bowel obstruction in adults, its value in distinguishing Meckel's Diverticulum is somewhat limited(3). Discriminating between Meckel's Diverticulum and a normal small bowel can be challenging, but in some instances, a blind-ending fluid or gas-filled structure may be observed in continuity with the small intestine. Timely identification of complex Meckel's Diverticulum is crucial as postponing surgery can lead to considerable morbidity and mortality. Regarding treatment, surgery is the primary approach and involves various options, such as diverticulectomy, wedge resection, and

segmental resection. The decision on which procedure to pursue may hinge on two critical factors: the height-to-diameter ratio (where a ratio above 2 signifies a long Meckel's Diverticulum) and the nature of the complication(4). Considering these factors, the recommended strategies for various scenarios are as follows: In instances of uncomplicated diverticulitis with a long Meckel's diverticulum, the suggested course is diverticulectomy. When dealing with uncomplicated diverticulitis related to a short Meckel's diverticulum, the preferred surgical option is wedge resection. In cases involving complicated intestinal obstruction and diverticulitis with an inflamed or perforated base, or the presence of a tumor, the recommended approaches include either wedge resection or segmental resection(5). The significant debate surrounding Meckel's Diverticulum revolves around the question of whether prophylactic surgical resection is advisable in cases where it is incidentally discovered during surgery. Currently, there is no consensus on this matter, and opinions diverge. Some surgeons advise against prophylactic resection, asserting that the post-operative morbidity is high, thereby making the risks outweigh the benefits. On the contrary, others advocate for prophylactic resection, contending that it shields previously operated patients from the potential development of future symptomatic MD, which can be life-threatening. The disparity in opinions is attributed to the fact that most authors derive their recommendations from their own experiences and patient case series.

CONCLUSION:

The occurrence of bowel obstruction caused by Meckel's Diverticulum is exceptionally uncommon, necessitating a heightened level of diagnostic suspicion in cases of acute abdomen. Early identification through imaging methods and prompt surgical intervention are crucial to prevent severe complications, including intestinal necrosis and subsequent perforation.

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