ORIGINAL RESEARCH PAPER

General Surgery

MECKEL'S DIVERTICULUM - A RARE CAUSE OF SMALL BOWEL OBSTRUCTION: CASE REPORT.

KEY WORDS: Meckel's diverticulum, small bowel obstruction, laparotomy.

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ABSTRACT

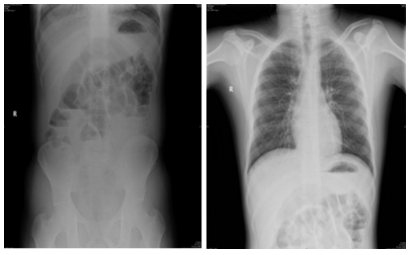
Meckel's diverticulum is the commonest congenital abnormality of small intestine. Though majority of the patients remain asymptomatic, few patients can experience symptoms when complicated by hemorrhage, small bowel obstruction and inflammation. We report a case of 50 year old male who presented with abdominal pain, distension and vomiting. Per abdomen examination revealed gaseous distension with guarding. Abdominal Imaging done confirmed small bowel obstruction. Laparotomy findings showed gangrenous Meckel's diverticulum and obstructed small bowel loops. This case report highlights the importance of considering Meckel's diverticulum as a differential diagnosis in patients with acute intestinal obstruction.

INTRODUCTION:

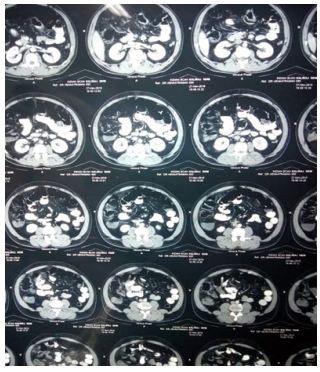
Meckel's diverticulum is the persistent remnant of proximal vitellointestinal duct also known as the omphalomesentric duct. The "rule of 2" applies in majority of meckel's diverticulum with it's prevalence in 2% population and presentation before the age of two. Majority of the patients with Meckel's diverticulum remain free of symptoms. However, it is not complication free and can cause problems like intestinal obstruction in adults and gastrointestinal bleeding in children. Other complications include: diverticulitis and chronic peptic ulceration. Small bowel obstruction can be due to mesodiverticular bands, volvulus of the diverticulum , intussusceptions and extension of the diverticulum into a hernial sac as in Littre's hernia. We report this rare case to stress that, meckel's diverticulum, even though rare should be considered as an etiology for small bowel obstruction.

CASE REPORT:

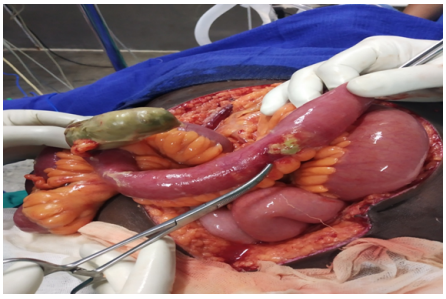
A 50 year old male patient presented to our emergency department with history of abdominal pain, vomiting and abdominal distension for 5 days. Abdominal pain was non radiating and colicky in nature which increased with food intake. Vomiting was bilious and non projectile. History of fever, jaundice, hematemesis and malena were absent in this patient. There was no history suggestive of similar episodes in the past and no history of previous surgeries. On clinical examination, patient was afebrile, had tachycardia and normal blood pressure. Tenderness was elicited over right iliac fossa and umbilical region with guarding. No palpable mass or organomegaly could be demonstrated. Elevated leukocyte count with normal hemoglobin and platelets was seen in complete hemogram. X-r ay erect and abdomen showed multiple air fluid levels suggestive of intestinal obstruction. CECT (ORAL/IV) abdomen revealed 5*3 cm focal loculated intraperitoneal air pocket with small fluid level in right lumbar region communicating with adjacent mid ileal loop through a bowel defect. Proximal small bowel appeared mildly dilated with associated free fluid suggesting small bowel obstruction. Emergency laparotomy was commenced to relieve the obstruction and to find out the etiology for the same. Around 400ml of turbid fluid was seen in pelvis and right iliac fossa. Meckel's diverticulum was found to be gangrenous and small bowel loops were seen dilated. Resection of small bowel was done from proximal impending perforation upto 2 cm distal to Meckel's diverticulum with end ileostomy and distal mucous fistula.



A. X- ray erect abdomen showing multiple air fluid levels



B. CECT- abdomen showing dilated proximal small bowel loops, pelvic free fluid and loculated intraperitoneal air pocket.



c. Gangrenous Meckel's diverticulum, dilated small bowel loops

There was no evidence of mesodiverticular bands, volvulous or intussusception of the Meckel's diverticulum causing obstruction in this patient. Post operative period was uneventful and patient was discharged in good condition. On follow up, histopathology of the gangrenous intestinal section showed a true diverticulum- Meckel's diverticulum with heterotopic gastric mucosa. The cut surface of the diverticulum and the small bowel loops show evidence of vascular insufficiency.

DISCUSSION:

Meckel's diverticulum is the most common congenital anomaly of the small intestine prevalent only in 2% of the general population. It equally affects both males and females. It is the remnant of the prenatal yolk stalk i.e. the vitellointestinal duct. It is being named after the German anatomist Johann Friedrich Meckel who described the embryonic origin of this diverticulum. It is located in the anti-mesenteric border of ileum and is at 2 feet distance proximal to the ileo-caecal junction. This true diverticulum has it's own blood supply by superior mesenteric artery and possesses all the three layers of the intestinal wall. The cell lining of the duct is pleuripotent (50% heterotopic gastric mucosa, 5% pancreatic mucosa, less commonly colonic mucosa, endometrial glands, hepatobiliary tissue) and is responsible for the complications like hemorrhage, chronic peptic ulceration and perforation. Meckel's diverticulum usually remains asymptomatic and the life time risk for developing complications is only 4-6%. Studies report these complications to be more common in males in ratios ranging from 1.8:1- 3:1. The most common complication in adults is intestinal obstruction and that in pediatric population is hemorrhage. According to literature reviews the various mechanisms proposed for the development of small bowel obstructions include: 1. Volvulus of the small intestine around a fibrous band 2. Intussusception 3. Sagging of the diverticulum into a hernial sac 4. Mesodiverticular bands 5. Stricture secondary to chronic diverticulitis 6. Meckel's diverticulum lithiasis. The pre- operative diagnosis of Meckel's diverticulum is difficult and only 6-12% cases can be diagnosed correctly due to the varying presentations. The initial workup includes blood hemogram and X- ray abdomen. CT abdomen aids in diagnosis of uncommon pathologies related to Meckel's diverticulum. Arteriography and Technitium pertechnetate scanning are useful only if there is significant bleeding. Early diagnosis and treatment of complicated cases with emergency laparotomy is the rule to relieve the symptoms. Ideal treatment for meckel's diverticulum is wedge resection of bowel including the diverticulum. The treatment outcome is usually good when surgical intervention is done at the earliest. The etiology of small bowel obstruction in our patient could not be explained by the usual mechanisms like omphalomesentric bands , volvulus or intussusception of the diverticulum, littre's hernia or enteroliths. In view of the gangrenous diverticulum and small bowel obstruction without any visible etiology a possibility of chronic inflammation as the cause for small bowel obstruction was postulated. On review of literature case reports of gangrenous Meckel's diverticulum and small bowel obstruction caused by chronic inflammation are sparse.

CONCLUSION:

Meckel's diverticulum though a rare entity in general population, when complicated, can present with various symptoms and signs and is difficult to diagnose preoperatively. This highlights the importance of high index of suspicion of Meckel's diverticulum as a differential diagnosis in patients with acute abdomen and need for early surgical intervention to relieve the patients symptomatically.

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