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CASE REPORT

MECKEL'S DIVERTICULUM CAUSING VOLVULUS OF ILEUM

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Abstract:

The most common complications of Meckel's diverticulum are Intestinal obstruction, gastrointestinal haemorrhage, adherence, intussusception, acute diverticulitis and rarely malignancy. Reported mechanism of intestinal obstruction in Meckel's diverticulum include invagination, adherence and volvulus. Obstruction of ileum caused by volvulus of Meckel's diverticulum is not a very frequent condition. Here we describe a case of intestinal obstruction caused by volvulus of ileum over non-inflamed Meckel's diverticulum. **KEYWORDS** :Meckel's diverticulum, Intestinal obstruction, volvulus

INTRODUCTION

Meckel's diverticulum is described as the remnant of the omphalo -mesenteric duct and is a common congenital abnormality of the gastrointestinal tract. It is present in about 2% of the population at a ratio of three malesto one female. It has a length of 10-12cm and is situated at a distance of 30-60cm from the ileocaecal valve. Meckel's diverticulum may contain intestinal mucosa or heterotopic gastric or pancreatic tissue. Most patients are asymptomatic but patients with clinical symptoms have a higher incidence of heterotopic tissue^[1,2]. When patients with a Meckel's diverticulum develop symptoms, a complication is almost always present. The main complications of Meckel's diverticulum include ulceration, hemorrhage, small bowel obstruction, diverticulitis and perforation^[3]. The signs and symptoms of intestinal obstruction may result from a volvulus^[4,6], adhesion and kinking^[5], internal herniation^[6], Littre's hernia^[5], intussusception^[4,5,6]. The diverticulum per se may be asymptomatic but persistent remnant of vitello intestinal tract, or adhesion can cause mechanical obstruction or volvulous as presented in this case.

CASE REPORT :

A 26 year old male patient with no previous abdominal surgery presented to emergency department with pain abdomen and distention of abdomen of three days duration and nonprojectile bilious vomiting of one day duration and passing flatus. On examination,

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patient was dehydrated, mild distention of abdomen present. Bowel sounds present, no organomegaly, no visible peristalsis, no ascites. On per rectal



Fig-1

examination, feces are present in rectum, patient passed stools on giving enema. Patient was kept on RTA and IV fluids. On second day, abdominal distention increased, patient was obstipated. Rectum empty on per rectal examination. X-RAY erect abdomen shows distal ileal obstruction. Ultrasound abdomen shows dilated fecal filled bowel loops with to and fro motion, luminal diameter of 4cm and no organomegaly (fig-1). Biochemical investigations were normal. Diagnosis of fixed loop distal ileal obstruction was made and patient was posted for emergency laparotomy.

Intra operative findings were distended ileal loops proximally upto 30cm from ileocaecal junction and fibrous band extendingfrom the tip of Meckel's diverticulum to the base of umbilicus, on which segment of ileum got looped and twisted at the root of mesentery causing obstruction. Distal ileum was collapsed from that point, multiple flimsy adhesions were present between distended loops of ileum. (Fig-2&3) The base of Meckel's diverticulum was 2cm wide and patent up to the tip. Other organs were normal. The fibrous band was released from abdominal wall, it was cut from the tip of Meckel's diverticulum. There was no leak from the cut site. The adhesions were released. Volvulus of ileum was undone and the distal ileum got filled with gas and faeces from the proximal loops dilated ileum was decompressed by enterotomy.

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Fig 2 Remnant of VI tract & Meckel'sDiverticulum





The ileum at the volvulus site is viable. Since the Meckel's diverticulum is wide and patent and with intact serosa, it is left alone without resection. However, abdomen drains were placed in pelvis and kept till the patient passed stools in post-operative period. Patient recovered without any complications and was discharged after eight days of hospital stay.

DISCUSSION :

Meckel's diverticulum was originally described byFabriciusHildanus in 1598. However, it is named after Johann Friedrich Meckel, who established its embryonic origin in 1809. Meckel's diverticulum is the most common congenital anomaly of the small intestine, with a prevalence of approximately 1-3%, and is a true diverticulum containing all layers of the bowel wall. The average length of a Meckel's diverticulum is 3cm, with 90% ranging between 1cm and 10cm, and the longest being 100 cm. This diverticulum is usually found within 100 cm of the ileocaecal valve on the anti mesenteric border of the ileum. The mean distance from the ileocaecal valve seems to vary with age, and the average distance for children under 2 years of age is known to be 34 cm. For adults, the average distance of the Meckel's diverticulum from the ileocaecal valve is 67 cm.

Most cases of Meckel's diverticulum are asymptomatic, and the estimated risk of developing life time complications of Meckel's diverticulum is around 4%^[7]. Mostpatients are asymptomatic and the diagnosis is difficult to confirm preoperatively. Among the symptomatic patients, twotypes of heterotopic mucosa (gastric and pancreatic) are foundhistologically within the diverticula. The frequent complications o Meckel's diverticulum are hemorrhage, intestinal obstruction and diverticulitis.

Intestinal obstruction is the second most common complication of Meckel's diverticulum^[8]. There are plenty of mechanisms for bowel obstruction arising from a Meckel's diverticulum. Obstruction can be caused bytrapping of a bowel loop by a meso-diverticular band, a volvulous of the diverticulum around a meso-diverticular band, and intussusception, as well as by an extension into a hernia sac (Littres hernia)^[9]. Similarly, as in our case; obstruction can be

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caused by trapping of a bowel loop by a meso-diverticular band. The important aspect of our case is clear demonstration of the meso-diverticular band of a Meckel's diverticulum. Various imaging modalities are used for diagnosing Meckel's diverticulum. Conventional radiographic examination is of limited value. Although of limited value, sonography has been used for the investigation of Meckel's diverticulum. High-resolution sonography usually shows a fluid-filled structure in the right lower quadrant having the appearance of a blind-ending, thick-walled loop of bowel^[10].

On computed tomography (CT),Meckel's diverticulum is difficult to distinguish from normal small bowel in uncomplicated cases. However, a blind-ending fluid or gas-filled structure in continuity with the small bowel may be revealed^[11]. In asymptomatic patients, whether all cases of incidental Meckel's diverticula should be resected or not is an unresolved question. On the other hand, for the symptomatic patients, treatment should always include resection of the diverticulum or the segment of the bowel affected by the pathology^[7,13].But in this case since the base of Meckel's is wide enough and there are no symptoms of peptic ulceration , no resection is done.

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