

CASE REPORT

AN UNUSUALLY LONG MECKEL'S DIVERTICULUM

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ABSTRACT: Meckel's diverticulum is the most common congenital abnormality of the gastrointestinal tract. It is the common differential diagnosis thought of in cases of lower abdomen pain especially in Appendicitis. When present, Meckel's diverticulum is around 2-5cm and its lifetime risk of complications is approximately 4-6%. Though an entity called 'Giant Meckel's diverticulum' is described in some studies, there are controversies about length or the width of the diverticulum to be considered for calling it a 'giant'. Usually Meckel's diverticulum is directed towards umbilicus or anterior abdominal wall due to its embryological origin. There are various ways of presentation of Meckel's diverticulum and pre-operative diagnosis is difficult except when suspected in cases of bleeding, or when ectopic mucosa is present. Intra-operatively diagnosed Meckel's diverticulum is treated mainly by resection, though the controversies arise for the treatment of co-incidentally found diverticula. We present a case of unusually long Meckel's diverticulum with its tip attached to root of mesentery and causing strangulation of ileal loops underneath it.

KEYWORDS: Meckel's diverticulum, Internal hernia, Giant Meckel's diverticulum, Intestinal obstruction.

INTRODUCTION: Meckel's diverticulum is the most common congenital abnormality of the gastrointestinal tract. There are various methods of presentation of Meckel's diverticulum and it mimics various clinical conditions. Proper pre-operative diagnosis is difficult even in this era.

CASE REPORT: An 18year male student presented to our OPD with complaints of abdominal pain since 1 day, which was central and towards right lower quadrant of abdomen. He had developed vomiting since the morning, around 6 times till presentation. There was no history of fever. There was no significant past medical or surgical history and the family history was non-contributory.

On examination, his pulse rate was 90 beats/min, BP was 118/76 mm Hg, hydration was adequate and he was afebrile, but patient appeared to be in distress. He had right iliac fossa tenderness with rebound tenderness. The WBC count was elevated with neutrophils up to 83.6%, haemoglobin was 15.4g/dL, and electrolytes were in normal range. Ultrasound abdomen was

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suggestive of appendicitis. With the provisional diagnosis of acute appendicitis, emergency appendectomy was planned. On opening the abdomen with Lanz incision, appendix or caecum could not be delivered out and the small bowel loops were cyanosed(fig 1), hence immediately abdomen was opened in lower midline. The ileal loops were found strangulated under a non-mesenteric loop of intestine with its blind end attached to the root of mesentery causing internal hernia-like condition (fig 2). The blind end was dissected out from root of the mesentery and ileal loops were freed. The constricting loop was found to be 15cm long Meckel's diverticulum (fig 3) and it was resected in a wedge fashion. Appendectomy was done. The cyanosed ileal loops were viable by the end of the procedure. Patient recovered well with no post-operative complications and was discharged. The histopathology showed inflammatory changes in Meckel's diverticulum with no ectopic mucosa. He is under regular follow-up since 6 months with no complications.

DISCUSSION: Meckel's diverticulum is the most commonly encountered congenital anomaly of the small intestine occurring in approximately 2% of the population(1). A Meckel's diverticulum possesses all the three coats of intestinal wall. It has the same microscopic structure as the adjacent small bowel and it has a separate blood supply from the adjacent small bowel mesentery (the omphalomesenteric artery)(2). The lifetime risk of complications of a Meckel's diverticulum, including diverticulitis, bleeding and obstruction, is approximately 4% to 6%(3-5) and 40% of these occur in children younger than age 10(6). There are various mechanisms by which Meckel's diverticulum can cause intestinal obstruction such as (a) Volvulus of small intestine around a fibrous band extending from Meckel's diverticulum to umbilicus (b) Intussusception – ileo-ileal and ileocolic type (c) Littre's hernia (d) Entrapment of small bowel beneath the blood supply of the diverticulum, also known as a meso diverticular band (e) Stricture secondary to chronic diverticulitis (f) Meckel's diverticulum lithiasis (g) Band extending between the diverticulum and the base of the mesentery, forming a loop in which a part of ileum may get stuck causing obstruction (h) Other rare mechanisms.(7, 8)

It is difficult to diagnose preoperatively, because its presentation commonly mimics various disorders - appendicitis being the most common preoperative diagnosis (1, 9). Small bowel obstruction is associated with approximately 30% of symptomatic diverticula (10, 11). The average size is 3cm, with 90% between 1cm and 10cm. Larger diverticula are more susceptible to complications(12). Though an entity called 'Giant Meckel's diverticulum' is described in some reports, there are controversies about length or the width of the diverticulum to be considered for calling it as 'giant'(13-16)

Efficacy of diagnostic imaging varies with this disease process. Plain films are usually nonspecific. Radionuclide scintigraphy will detect 85% of Meckel's cases if ectopic gastric mucosa is present in the diverticulum. Enteroclysis may also detect a smaller percentage of diverticula, ranging up to 75%. Abdominal CT may yield a high rate of diagnosis when small bowel obstruction is present (81% to 96%), but a Meckel's etiology is difficult to identify as a cause due to the inability to distinguish a diverticulum amongst loops of small bowel (5, 11).

The treatment for Meckel's diverticulum is surgical resection. Though the controversy still exists about diverticulectomy in asymptomatic cases, evidence in support of prophylactic diverticulectomy is substantial (5,17,18).

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This case is being reported as our patient presented as acute appendicitis but had intra-operative signs of intestinal obstruction. Meckel's diverticulum had caused the strangulation of ileal loops underneath it as it was a long (giant) diverticulum of 15cm with tip attached to the root of mesentery probably due to previous inflammatory pathology.

CONCLUSION: Meckel's diverticulum is the most common congenital anomaly of the gastrointestinal tract. Due to overlapping clinical features and radiological signs, a pre-operative diagnosis might be challenging. A high degree of suspicion along with adequate knowledge about Meckel's diverticulum will aid in timely diagnosis and proper treatment of the condition. The abdomen still remains a Pandora's Box and Meckel's diverticulum and its various presentations have to be kept in mind in case of any acute abdomen. The term 'Giant Meckel's diverticulum' needs clearer description.

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(1, 3-12, 17-19)

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1-Lanz incision



2-Constricting loop



3- Meckel's and appendix