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## A CASE STUDY OF APPENDICITIS WITH MIKEL'S DIVERTICULUM

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### ABSTRACT

An appendectomy is one of the most commonly performed abdominal surgical procedures. During this operation, a Meckel's diverticulum (MD) can occasionally be found as an incidental finding, but the coexistence of both appendicitis and a MD is fairly rare. Complications associated with an MD commonly occur in males, but the frequency of complications decreases with aging. Here, we present a rare case with a simultaneous coexistence of appendicitis and MD in a patient. When Meckel's diverticulum is suspected or diagnosed, patients should be surgically treated to prevent any complications to the patient.

**Keywords:** *Appendicitis, Meckel Diverticulum, Acute abdomen, Appendectomy, Surgery*

**Abbreviations:** MD - Meckel's Diverticulum

**Introduction:**

A Meckel's diverticulum is a persistent remnant of the vitelointestinal duct and is present in about 2 per cent of the population. It is found on the antimesenteric side of the ileum, commonly at 60 cm from the ileocaecal valve and is classically 5 cm long. A Meckel's diverticulum contains all three coats of the bowel wall and has its own blood supply. It is vulnerable to obstruction and inflammation in the same way as the appendix; indeed, when a normal appendix is found at surgery for suspected appendicitis, a Meckel's diverticulum should be looked for by examining the small bowel particularly. Normally it is asymptomatic and it is found incidentally during abdominal exploration for other pathologies. When the Meckel's diverticulum is symptomatic it may be responsible for severe episodes of Intestinal bleeding, intussusception, bowel obstruction, or recurrent abdominal pain with repeated vomiting and/or nausea. It is difficult to diagnose a Meckel diverticulum clinically and imagistic ally and it is Afton mistaken for other disorders like appendicitis, peptic ulcer, Chron disease, and therefore it has major implications in the abdominal pathology.

**Case report:**

A 13-year-old male patient presented to emergency with complaints of pain abdomen for 3 day. The pain originated in the umbilical region, radiating diffusely across the lower abdomen and subsequently localized to the RLQ. The pain was of sudden onset, sharp and colicky with progressing

intensity. Over the counter, oral analgesic was taken before presenting to hospital, which did not alleviate the pain. The pain was exacerbated by lifting the right leg and relieved by leaning forwards.

Past medical and surgical history was nil of note. No drug history with no known drug allergies. There was no relevant family history.

**Examination:**

Under observation, he was apyrexial with stable vital signs. The abdominal examination revealed a soft abdomen, rebound tenderness in the RIF.

**Investigations:**

Based on the clinical presentation of patient, the initial impression pointed towards a provisional diagnosis of acute appendicitis, with MD as a differential.

Blood results were all within normal ranges. Abdominal ultrasonography confirmed a diagnosis of appendix by the presence of mild peri appendicular wall edema and within the 7 to 7.7 mm. & mild enteritis along with Meckel's diverticulum.

**Medicine:**

Patient was commenced on the following medications in hospital: Electrolyte solution infusion 1000 ml IV, Metronidazole 250mg IV, Pantoprazole 20 mg IV, Ondansetron 2 mg IV, Ceftriaxone 500 mg IV. Following this, he was transferred to theatres for surgery.

**Surgical report:**

An exploratory laparotomy through a Rt paramedian incision was performed under general anesthesia. among the

small bowel loops, a markedly swollen and inflamed appendix was observed. After checking both the large and small bowels, an MD that was 4 cm in length with an inflamed and fibrinoid appearance was found 60 cm proximal to the ileocecal valve and adhering to the pelvic peritoneum. After relieving the adhesions, fibrinous tissue that accounted for a micro-perforation on the antimesenteric side of the ileum was seen. First, a diverticulectomy using sewn and irrigation was performed, which was followed by an appendectomy. An examination of the rest of the abdominal organs revealed no abnormalities. After the surgery, broad-spectrum intravenous antibiotics were commenced and the patient had an uncomplicated recovery. Following surgery, patient was stable and recovered well with mild bloating and tenderness. The patient was discharged with oral medication without any complications.

### Discussion:

Meckel's diverticulitis and perforation of an MD usually present as acute appendicitis, except for the location of the pain. Appendicitis is the most common preoperative diagnosis in cases of complicated MD. In the present case, the MD produced limited peritonitis, but presumably it was thought that this was due to appendicitis.

When the omphalomesenteric duct has not completely obliterated during fetal life, MD occurs. It is the most prevalent congenital pathology of the gastrointestinal tract and is conventionally found in about 2% of the

population. Although this condition is relatively common, complications can occur in 4-16% of cases, which include bowel obstruction, hemorrhage, diverticulitis, perforation, and intussusception. The most common presenting symptom is obstruction, which occurs in nearly 40% of patients. Symptomatic MD commonly occurs in males, but the incidence of complications decreases with aging and the majority of complications occur in the pediatric ages. The second most common presentation is diverticulitis, and MD accounts for 10-20% of these complications but is seen more commonly in elderly patients.

Cullen et al. reported that the median age of patients with symptomatic diverticulum was 23 years (range: < 1 year to 82 years). Park et al. reported that the mean age of patients with a symptomatic MD was 27 years ( $31 \pm 23.6$  years) and that the frequency of symptomatic MD decreases with age in the adult population. The incidence of appendicitis peaked at 15 to 19 years for males, and subsequently, the incidence decreased gradually and reached a low point in the 55-59-year age group in both sexes. Although the incidence of appendicitis and symptomatic MD decreased during the fifth decade, a coexistence of both diseases was found in the present case.

No specific physical signs or symptoms occur that make it possible to differentiate Meckel's diverticulitis from acute appendicitis.

### Conclusion:

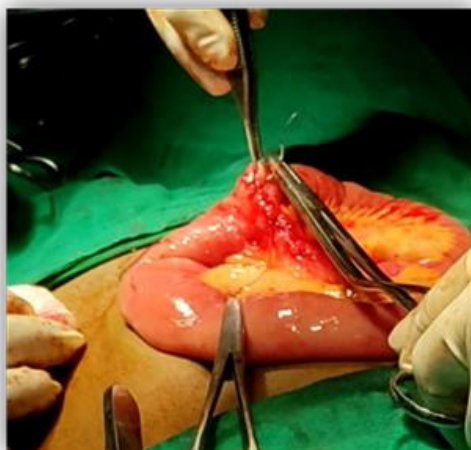
Appendicitis is the most common cause of acute abdomen; diverticulitis is a rare complication and it is often difficult to diagnose because it usually presents with abdominal pain which may mimic

other different disorders. Appendicitis is the most common pre-operative diagnosis in patients with complications of Meckel's diverticulum.

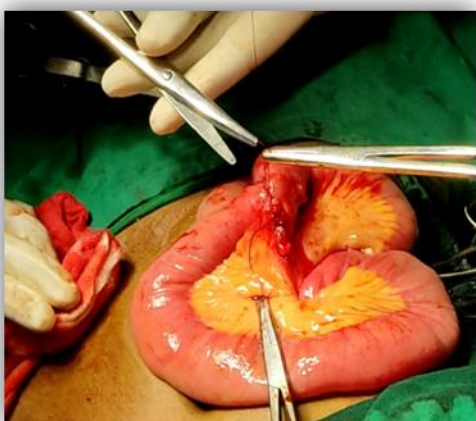
### STEPS OF MECKEL'S DIVERTICULUM & APPENDECTOMY



1. Meckel's diverticulum



2. Resected MD with

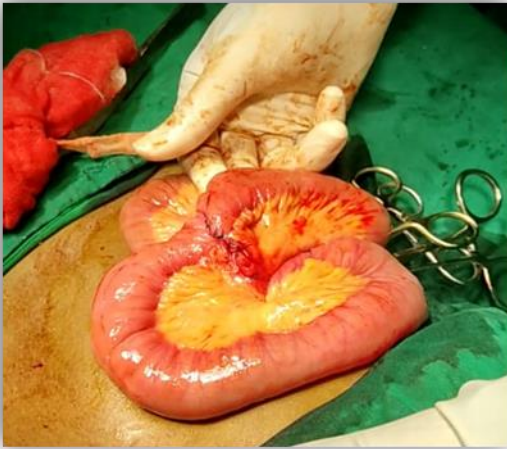


3. End -end anastomosis



4. Patency of lumen confirmed by palpation





5. Hemostasis achieved



6. Appendix identified



7. Ligation at base of appendix



8. Appendectomy

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