

# Perforation of Meckel diverticulum presenting with acute appendicitis

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**Key Words:** Perforation of Meckel diverticulum; vegetable stalk; acute appendicitis

### Introduction

Meckel diverticulum is the most common congenital structural abnormality of the gastrointestinal tract. In 1809, Johann Friedrich Meckel first described its embryological origin. Between 2% and 4% of people may have Meckel diverticulum and 4-6% of them suffer from complications [1]. Meckel diverticulitis is usually confused with acute appendicitis and perforation with peptic ulcer perforation. We report a case which was clinically diagnosed as acute appendicitis which turned out to be perforation of a Meckel diverticulum, with inflammation of the appendix. This diagnostic and therapeutic dilemma of the case gives us an opportunity to report it as a case of interest.

### Case report

A 15 year old boy was admitted to hospital presenting with pain in the right lower abdomen for five days, abdominal distension, fever and vomiting. He looked ill and dehydrated. His pulse was 120 beats per minute, blood pressure was 90/70 mmHg and temperature was 39.40°C. There was tenderness and muscle guarding in the right lower abdomen and the hypogastrium. Liver dullness was not obliterated and bowel sounds were absent. The rectovesical pouch was tender while other systems were normal. A plane x-ray of the abdomen showed air filled distended bowel loops, there was no sub-diaphragmatic free gas. A complete blood count showed neutrophilic leucocytosis, 4-8 pus cells and 1-2 red cells per high power field on light microscopy. A trans-abdominal ultrasound scan revealed a grossly

swollen vermiform appendix and a pelvic collection of fluid. A diagnosis of acute appendicitis with a pelvic collection was made.

A laparotomy was performed by grid iron incision in the right lower quadrant of the abdomen which required extension both downward and medially. The vermiform appendix was grossly swollen and pelvic in position. During manipulation of the appendix in the pelvis, about 100 ml of pus along with hard vegetable stalks were extruded. An appendectomy was performed; there was no perforation (Figure 1a, 1b).

Concurrently, we examined the ileum, and at approximately 65 cm from the ileocaecal junction, a perforated Meckel diverticulum was detected which was excised with a 2cm ante-mesenteric rim of ileum (Figure 2a, 2b).

After irrigation and suction of pus from the pelvic abscess cavity, the abdomen was closed. Recovery was uneventful and at follow-up appointments at one, two and four months, the patient continued to remain healthy.

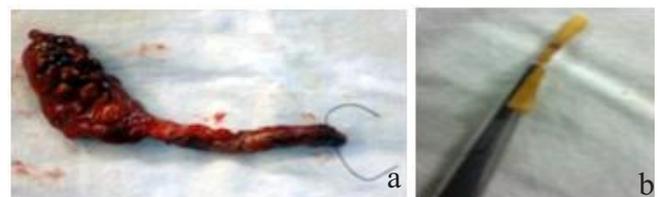


Figure 1a, 1b. Inflamed appendix and vegetable stalk

Histopathology of the vermiform appendix revealed microscopic features of acute appendicitis and Meckel diverticulitis with perforation and a mucosal lining of small intestinal type. Microbiological analysis of the pelvic pus showed *Escherichia coli spp*, *Klebsiella* and

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Figure 2a, 2b. Perforated Meckel diverticulum

*Streptococcus pyogenes* which were found to be sensitive to metronidazole, ciprofloxacin and amikacin.

### Discussion

Meckel diverticulum occurs in about 2% of the population and it is twice as much common in males than in females [1, 2]. Bleeding, diverticulitis, obstruction, intussusception and perforation are complications. Perforation constitutes about 0.5% of all complications of which 10% results from diverticulitis. It may also occur due to ulcers and foreign bodies such as fish and chicken bones, lithiasis and vegetable stalks [3, 4]. Perforation caused by the latter is very rare. Perforation is usually confused with peptic ulcer perforation and rarely with acute appendicitis [5]. We made an initial diagnosis of acute appendicitis and considered a laparoscopic procedure hazardous because

of the possibility of adhesions. Instead, a laparotomy was undertaken, where the vermiform appendix was swollen and pelvic in position. During its manipulation and the suction of pelvic pus, hard vegetable stalks were found within pus. Assuming perforation of gut, we examined the ileum and detected perforated a Meckel diverticulum. At the time, it was difficult to determine whether this was a case of both acute appendicitis and perforation of Meckel diverticulum.

### References

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### Key points:

- ☞ Perforation of Meckel diverticulum may present as acute appendicitis and vice-versa.
- ☞ In all cases of acute appendicitis the ileum should be checked for additional pathology.