

A Rare Cause of Acute Abdomen: Meckel's Diverticulitis Due to Meckel's Enteroliths

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ABSTRACT

Meckel's diverticulum is the most common congenital anomaly of the gastrointestinal tract. It is usually asymptomatic and detected incidentally. Stone formation in Meckel's diverticulum is extremely rare and less than half of them are radio-opaque. Diagnosis may be confused with acute appendicitis and gallstones. In this case, we present a rare cause of acute abdomen with Meckel's diverticulum complication. Ischemic Meckel's Diverticulitis due to Meckel Enteroliths can be considered among the differential diagnoses, especially in young patients with peritonitis.

Keywords: Diverticulitis, enterolith, meckel diverticulum

Introduction

Meckel's diverticulum is the most common congenital anomaly of the gastrointestinal system and is seen in 2-3% of the population.^{1,2} It occurs as a result of incomplete obliteration of the omphalomesenteric canal. It is usually asymptomatic and is detected incidentally. Stone formation in the Meckel's diverticulum is extremely rare.^{2,3} We present a patient who presented with acute abdomen due to Meckel's enterolith in our clinic.

Case Report

An 18-year-old male patient was admitted to the emergency department with complaints of widespread abdominal pain and nausea. On physical examination, there was widespread peritonitis with defense and rebound in all quadrants. In the laboratory analysis of the patient, white blood cell count was 19,900/mm³ (lymphocyte 3.2%-neutrophil 93.1%), hemoglobin was 12.6 g/dL and C-reactive protein was 30.9 mg/dL. Since the patient had common acute abdomen findings, the emergency abdomino-pelvic computed tomography (CT) was "Abscess pouch between the small intestine segments and radiopaque fecalitis?" viewed. "Perforated appendicitis? is considered." and was reported by radiologist (Figure 1). An appearance compatible with Ischemic Meckel

Diverticulitis associated with the midline small intestine was detected in the exploration performed in the patient, who was taken into emergency operation. The diverticulum was attached to the root of the small bowel mesentery and there were lymphadenopathies reaching 2 cm around it (Figure 2, 3). Considering the suspicion of a tumor in the Meckel's diverticulum, the patient underwent segmental small bowel resection including diverticulum and lymph nodes in the small bowel mesentery. In the intraoperative examination of the specimen, two enteroliths (1x1.5 cm and 1.7x1.1 cm) were found in the diverticulum (Figure 4). The patient was discharged on the sixth postoperative day without any complications. The patient's histopathology was reported as Meckel's diverticulitis and reactive lymph nodes which included perforation, abscess focus, ulcer and necrosis findings. Informed consent was obtained.

Discussion

Meckel's diverticulum is the most common congenital anomaly of the gastrointestinal system. The lifetime risk of being symptomatic was estimated to be 4-16%. Patients usually present with bleeding (especially in children), obstruction, intussusception, diverticulitis, and perforation.^{2,4} In the data of the Mayo Clinic, the rate of enterolith (stone) seen in Meckel's diverticulum was reported



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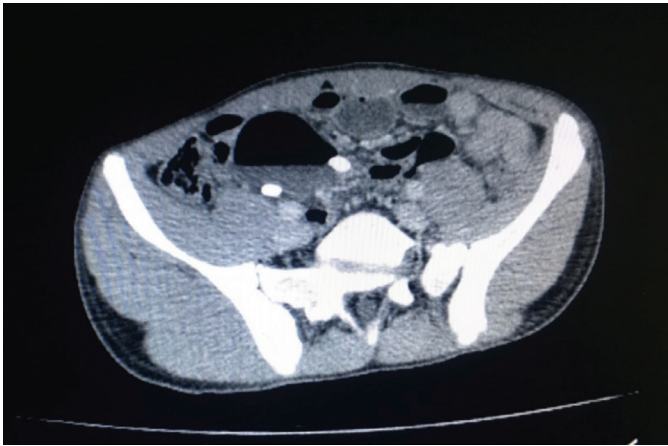


Figure 1. Computed tomography of patient



Figure 2. Ischemic diverticulitis with lymphadenopathies in the mesentery

as 6.1% in histopathological examination of the specimen in symptomatic patients.⁵ Nevertheless, clinical presentations of complications caused by enteroliths are very rare and there are a limited number of case reports in the literature.

The pathogenesis of enterolith formation in Meckel's diverticulum is unknown. Decreased peristalsis and stasis in the diverticulum area are blamed. Since the neck of the Meckel diverticulum is generally wide, they are secondary enteroliths around the food residues trapped in the diverticulum. However, in our present case, primary enterolith with a narrow diverticulum neck and containing calcium phosphate was found.⁶ Approximately one third of the enteroliths are radiopaque.⁷ In our case, two enteroliths were seen in CT sections.

Meckel's diverticulum most commonly presents with obstruction in adult patients. The second most common presentation is diverticulitis. Diverticulitis usually develops as a result of obstruction of the narrow necked diverticulum

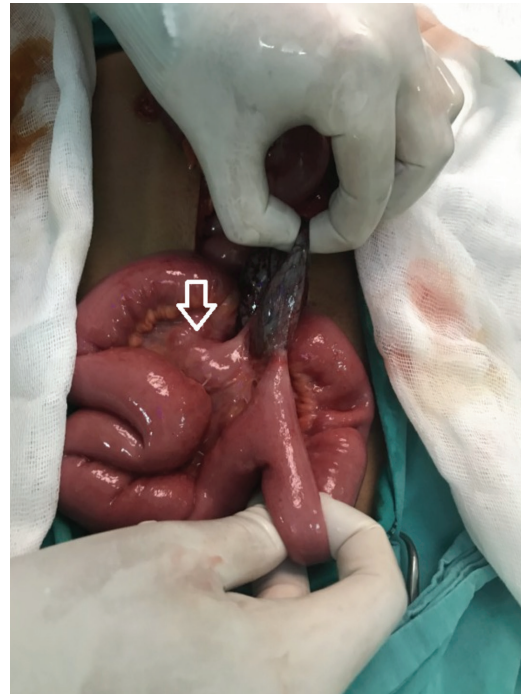


Figure 3. Lymphadenopathies in the mesentery are shown with arrow

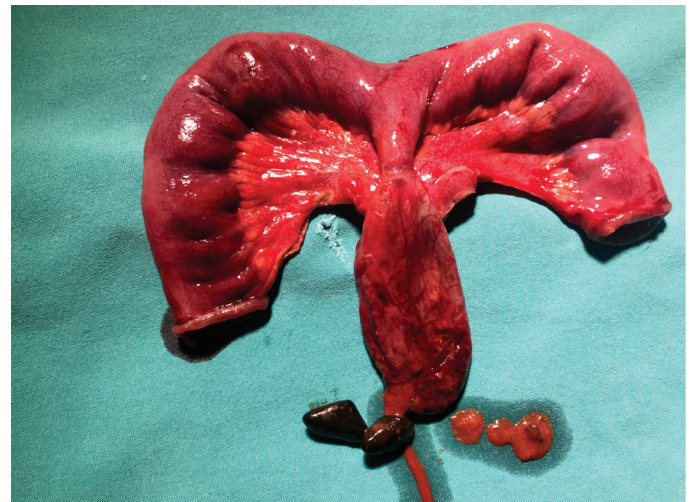


Figure 4. Excised specimen with two enteroliths

and gives the same clinical symptoms as acute appendicitis. Generally, the diagnosis is made during surgery in the patients who are being operated with a pre-diagnosis of acute appendicitis.⁸ In our case, diverticulitis due to enterolith was detected in the patient who was operated with a pre-diagnosis of perforated acute appendicitis. The enteroliths found in our case caused ischemia of the diverticulum by closing the diverticulum neck, therefore inflammatory lymph nodes developed in the surrounding area.

In this case, we present a possible cause of acute abdomen with a complication of Meckel's diverticulum. Meckel's

Enterolith induced Ischemic Meckel's Diverticulitis can be counted among the differential diagnoses.

Ethics

Informed Consent: It was obtained.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: M.S., S.İ.B., Concept: M.S., S.İ.B., Design: M.S., S.İ.B., Data Collection or Processing: M.S., S.İ.B., Analysis or Interpretation: M.S., S.İ.B., Literature Search: M.S., S.İ.B., Writing: M.S., S.İ.B.

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