



Meckel's Diverticulitis Associated with Acute Gastroenteritis: A Rare Cause of Ileus

Akut Gastroenterit Tablosu Sonucu Gelişen Meckel Divertikülit Olgusu: İleus'un Nadir Bir Sebebi

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ABSTRACT

Meckel's diverticulum (MD) is the most common congenital anomaly of the gastrointestinal tract, occurring in 2-3% of the population. Only 2% of patients with MD manifest clinical problems. Diverticulitis occurs in approximately 10-20% of patients with symptomatic MD and more often in the elderly population. This anomaly is due to the incomplete obliteration of the omphalomesenteric duct during the seventh week of gestation and is classically located two feet proximal to the ileocaecal valve. While most of the population may be asymptomatic, clinical manifestation, including gastrointestinal bleeding and intestinal obstruction, may be present. We present the case of a 22 year old man who presented with a 24 hour history of worsening abdominal pain and nausea with a history of gastroenteritis. His examination revealed lower abdominal peritonitis. An abdominal ultrasonography revealed a tubular structure with 16 mm transverse diameter in the right lower abdomen adjacent to the distal small bowel. Exploratory laparotomy was performed, which revealed an acutely inflamed Meckel's diverticulitis causing ileus. Consideration of this condition in the differential upon presentation of an acute abdomen and obstruction of the gastrointestinal tract is essential, secondary to the morbidity that can accompany this condition when misdiagnosed.

Keywords: Meckel's diverticulum, gastroenteritis, ileus, diverticulitis

Received: 06.05.2012 **Accepted:** 26.07.2012

ÖZET

Meckel divertikülü toplumun %2-3'ünde gözlenebilen gastrointestinal sistemin konjenital bir anomalisidir. Meckel divertikülü bulunan olguların sadece %2'sin de klinik problemler gözlenmektedir. Divertikülit, bu olgular içinde özellikle yaşlı popülasyonda yaklaşık olarak %10-20'sinde gözlenebilmektedir. Bu anomalide omfolomezenterik kanalın 7'nci gestasyonal haftaya kadar kapanmasında gecikme olması sonucu gözlenmekle birlikte en sık olarak ileoçekal valvden 2 feet uzaklıkta gözlenebilmektedir. Sıklıkla asemptomatik iken, gastrointestinal kanama ve intestinal obstrüksiyon gibi semptomlarla karşımıza çıkabilmektedir. Yirmi iki yaşında erkek bir olgu 24 saattir devam eden ve gittikçe artma gösteren karın ağrısı ve bulantı şikayeti ile acil servise başvurdu. Hastanın yaklaşık 1 hafta önce gelişen akut gastroenterit hikayesi mevcut idi. Fizik muayenesinde alt abdominal peritoneal hassasiyet bulguları mevcut idi. Yapılan ultrasonografik inceleme sonucunda distal ince barsak komşuluğunda sağ alt kadranda transvers çapı 16 mm olan tubuler yapı saptandı. Exploratif laparotomi sonucunda Meckel divertikülit tablosu ve buna bağlı olarak gelişen ileus saptandı. Akut abdomen ve gastrointestinal sistem obstrüksiyonu tablosu ile başvuran olgularda Meckel divertikülit tablosu mutlaka akılda tutulmalı ve ayırıcı tanıda mutlaka akılda tutulmalıdır.

Anahtar Kelimeler: Meckel divertikülü, gastroenterit, ileus, divertikülit

Geliş Tarihi: 06.05.2012 **Kabul Tarihi:** 26.07.2012



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Figure 1. Jejunal part obstructed by Meckel's diverticulitis

Introduction

Meckel's diverticulum (MD), the most common true diverticulum of the gastrointestinal tract, is a congenital diverticulum that results from incomplete closure of the omphalomesenteric or vitelline duct. The usual manifestation is a relatively wide projection arising from the antimesenteric side of the ileum, generally 45 to 60 cm proximal to the ileocaecal valve. The great majority of symptomatic MD are found in childhood, the most common symptom in childhood being bleeding. Complications of MD in adults include intestinal obstruction, bleeding, acute diverticulitis, or the presence of a diverticulum in a hernia sac (Littre's hernia) (1). Here, we report a case of Meckel's diverticulitis in a 22 year old male, which caused acute abdominal pain and intestinal obstruction after an acute gastroenteritis attack.

Case Report

A 22 year old male was admitted to our emergency unit with abdominal pain, a fever of 38.5°C, nausea and vomiting, constipation with no passage of gas or faeces, and abdominal distension for 24 hours. His only significant past medical history was that he had an acute gastroenteritis attack one week previously. This gastroenteritis attack was treated symptomatically. At physical examination, he was dehydrated and his abdomen was distended but soft. Muscular defense and rebound tenderness was examined in the right lower quadrant. Upon auscultation of the abdomen, bowel sounds were found to be consistent with mechanical bowel obstruction. The clinical symptoms were thought to be consistent with perforated appendicitis or mechanical intestinal obstruction caused by MD. The emergency laboratory tests presented as follows: red blood cells (RBC): $5.06 \times 10^6 / \text{mm}^3$ ($3.00 - 5.80 \times 10^6 / \text{mm}^3$); white blood cells (WBC): $11.9 \times 10^3 / \text{mm}^3$ ($3.50 - 10.0 \times 10^3 / \text{mm}^3$); haemoglobin (Hgb): 13.6 g/dL (11-16.5 g/dL); haematocrit (Hct): 42% (35-50%); blood sugar: 110 mg/dL (60-109 mg/dL); blood urea nitrogen (BUN): 43.2 mg/dL (0-50 mg/dL); serum creatinine: 0.815 mg/dL (0-1.1 mg/dL); ALT: 7.8 U/L (0-40 U/L); AST: 24.3 U/L (0-40 U/L); and total bilirubin: 0.83 mg/dL (0.1-1.2 mg/dL). A plain X-ray abdominal film showed distended small bowel loops and multiple gas-fluid levels. An abdominal ul-

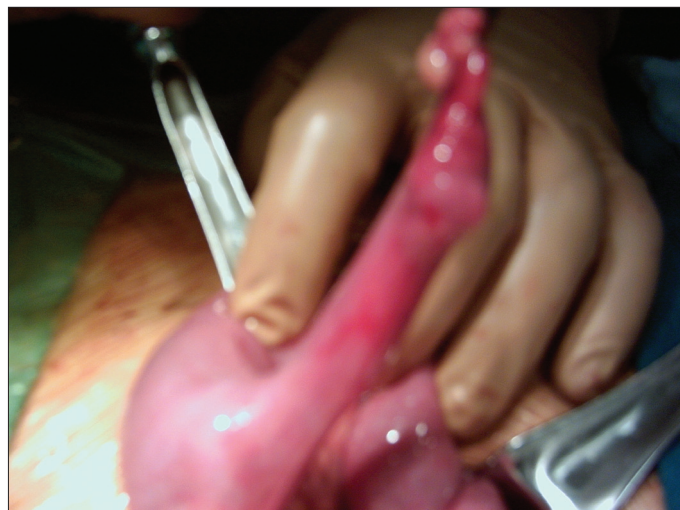


Figure 2. Inflammation of Meckel's diverticulum was released from the adhered part

trasonography revealed a tubular structure with 16 mm transverse diameter in the right lower abdomen adjacent to the distal small bowel. Before the anaesthesia induction, gastric content with bile was aspirated. This finding indicated the ileus before the operation. The operation was started with a right paramedian incision. The appendix was found to be normal while the proximal region of the jejunum was dilated. A Meckel's diverticulum was located nearly 90 cm from the ileocaecal valve with a base area of 2 cm. The inflamed MD was found to have surrounded the jejunum and adhered to the mesentery from its free end (Figure 1, 2). The strangulated jejunal obstruction was seen. Thus, jejunal diverticulectomy was performed, the obstruction was relaxed and there was no need for a small bowel resection. The patient was discharged five days after the operation. Histopathological findings were consistent with extensive diverticulitis and pronounced inflammation of the mucosa.

Discussion

Meckel's diverticulum is the most common congenital abnormality of the small intestine. Although first described by Fabricius Hildanus in 1598, it is named after Johann Friedrich Meckel, who established its embryonic origin in 1809 (2). MD, the most common true diverticulum of the gastrointestinal tract, is a congenital diverticulum that results from incomplete closure of the omphalomesenteric or vitelline duct (3). The great majority of symptomatic MD are found in childhood, and the most common symptom in childhood is bleeding. In adults, most MD are found incidentally by radiographic examination of the small bowel. Interestingly, our patient was younger than would be expected. Therefore, infection of the gastrointestinal system might have triggered the inflammation of the MD.

Complications of MD in adults include intestinal obstruction, bleeding, acute diverticulitis, or the presence of a diverticulum in a hernia sac. Abdominal mass, distension, pain, vomiting, nausea, perforation and obstruction may be observed in patients presenting with these complications (4). Obstruction was the predominant symptom (39%) in 51 symptomatic patients in a study by Bemelman et al. (5). Haem-

orrhage, perforation, diverticulitis, and intussusception were the other symptoms (12-14% each). Obstruction occurred mainly in patients under the age of 10 and perforation occurred in patients aged from 10 to 30. However, in our case, obstruction was the main symptom in our adult patient.

Obstruction may be produced by one of two mechanisms. The most common is volvulus or kinking around a band running from the tip of the diverticulum to the umbilicus, abdominal wall, or mesentery (1). In our case, kinking around the jejunum and adhesion from the tip of the diverticulum to another jejunal part was an interesting anatomic sight. The patient recovered after the diverticulectomy and had no need for a small bowel resection, as in the study by You et al. (6).

Conclusion

Meckel's diverticulitis should be considered in the differential diagnosis of young patients who present with a mechanical bowel obstruction especially with a history of acute gastroenteritis.

Conflict of interest

No conflict of interest was declared by the authors.

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