A case of Meckel's diverticulitis treated on the assumption of Crohn's disease

Crohn hastalığı düşünülerek tedavi edilen Meckel divertikülitli bir olgu

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Meckel's diverticulum is the most common congenital abnormality of the gastrointestinal system. It usually has an asymptomatic course and is detected incidentally during laparoscopy. Symptomatic cases are mostly observed under two years of age. In adults, it may rarely manifest with life-threatening complications. In this report, we present a 19-year-old case with Meckel's diverticulum operated with ileus while under follow-up, who was assumed to have Crohn's disease.

Key words: Meckel's diverticulum, Crohn's disease, sub-ileus

Meckel divertikülü mide barsak sisteminin en sık görülen doğumsal anomalisidir. Genellikle asemptomatik seyreder ve laparoskopi esnasında tesadüfen saptanır. Semptom veren vakaların çoğu 2 yaşın altındadır. Erişkinlerde nadir olarak yaşamı tehtid edici komplikasyonlarla ortaya çıkabilmektedir. Bu yazıda 19 yaşında Crohn hastalığı teşhisi ile takip edilen ve ileus tablosu ile opere edilen meckel divertikülü tanılı bir olgu sunulmuştur.

Anahtar kelimeler: Meckel divertikülü, Crohn hastalığı, subileus

INTRODUCTION

Meckel's diverticulitis (MD) is a congenital, intestinal blind pouch that results from an incomplete obliteration of the vitelline duct during the fifth week of gestation (1, 2). It is located 60 cm proximal to the ileocecal valve on the antimesenteric surface (3). MD occurs so infrequently that most articles have reported either small series or isolated cases (4). Crohn's disease (CD) is a disorder of uncertain etiology that is characterized by transmural inflammation of the gastrointestinal tract. The transmural inflammation often leads to fibrosis and to obstructive clinical presentations. Most patients with CD have imaging studies of the small intestine during the course of their disease, and often, an intestinal resection. Thus, it seems possible to estimate the prevalence of MD in CD. In addition, patient characteristics may be important, especially if management of CD is altered (5). In this article, we present a case with no response to treatment for CD, who was diagnosed to have MD during operation.

CASE REPORT

A 19-year-old female student presented to our clinic with the complaint of periumbilical pain that had been present for approximately one year. Her abdominal pain was predominantly postprandial. She reported a weight loss of nearly 10 kilograms within 8 months. She was cachectic with height of 156 cm and weight of 35 kg. Her conjunctiva and skin color were quite pale. Mild distention, hypertympanism and periumbilical tenderness were noted during abdominal examination. No pathology was detected on examinations of the other systems. Laboratory investigations revealed the following: hemoglobin: 7.1 g/dl, hematocrit: 22.4%, mean corpuscular volume: 66 fI, erythrocyte sedimentation rate: 33 mm/hour, C-reactive protein: 4.18 mg/dl, albumin: 2.7 g/dl, globulin: 3.2 g/dl, thrombocyte: 423,000/mm3, iron: 10 mg/dl, total iron-binding capacity: 190 ug/dl, and ferritin 15 ng/ml. Peripheral blood smear revealed hypochromic microcytic erythrocytes, poikilocytosis and anisocytosis. There were a few air fluid lev-

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Manuscript received: 19.09.2008 **Accepted:** 05.11.2009

doi: 10.4318/tjg.2010.0079

els on the right lower quadrant of plain abdominal X-ray. The colonoscopy detected ulcers in the cecum and ileocecal valve (Figures 1, 2). Biopsy obtained from the cecum and the region surrounding the ileocecal valve was reported as non-specific inflammation. Presuming a diagnosis of CD based on these results, mesalazine 4 g/day and methylprednisolone 40 mg/day treatment was initiated. During treatment, enteroclysis investigation was performed, which revealed a diverticular structure measuring 3 x 15 cm with a regular outline in the pericecal region that was completely detached from the ascending colon (Figures 3, 4). Two weeks after treatment, methylprednisolone dose was tapered gradually by 4 mg/day dose. During this treatment, the patient did not improve with continued abdominal colic pain and no weight gain. Colonoscopy was repeated, which detected the same macroscopic and microscopic findings. At 2.5 months of treatment, corticosteroid was completely discontinued, and she was rehospitalized for the second time using only mesalazine. Compared to the previous plain abdominal X-ray, output of gas and feces was decreased and air fluid levels had increased. These results suggested sub-ileus and surgery was decided. During the operation, right hemicolectomy and resection of 50 cm of distal terminal ileum were performed; there was volvulus and peri-ileocecal collection. Macroscopically, lumen dilation and

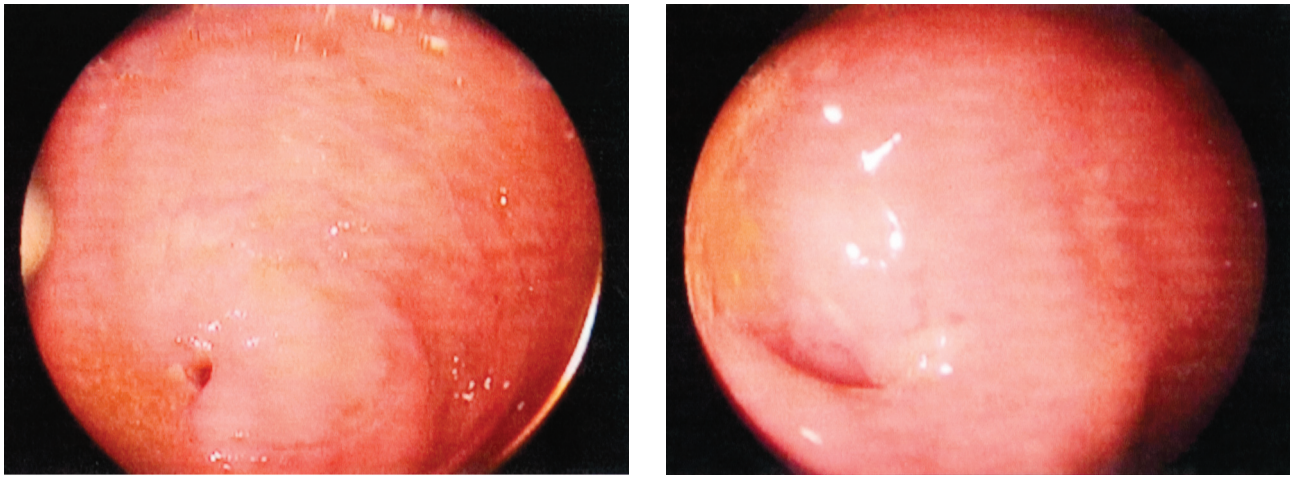

Figure 1, 2. Colonoscopy shows ulcers in the cecum.

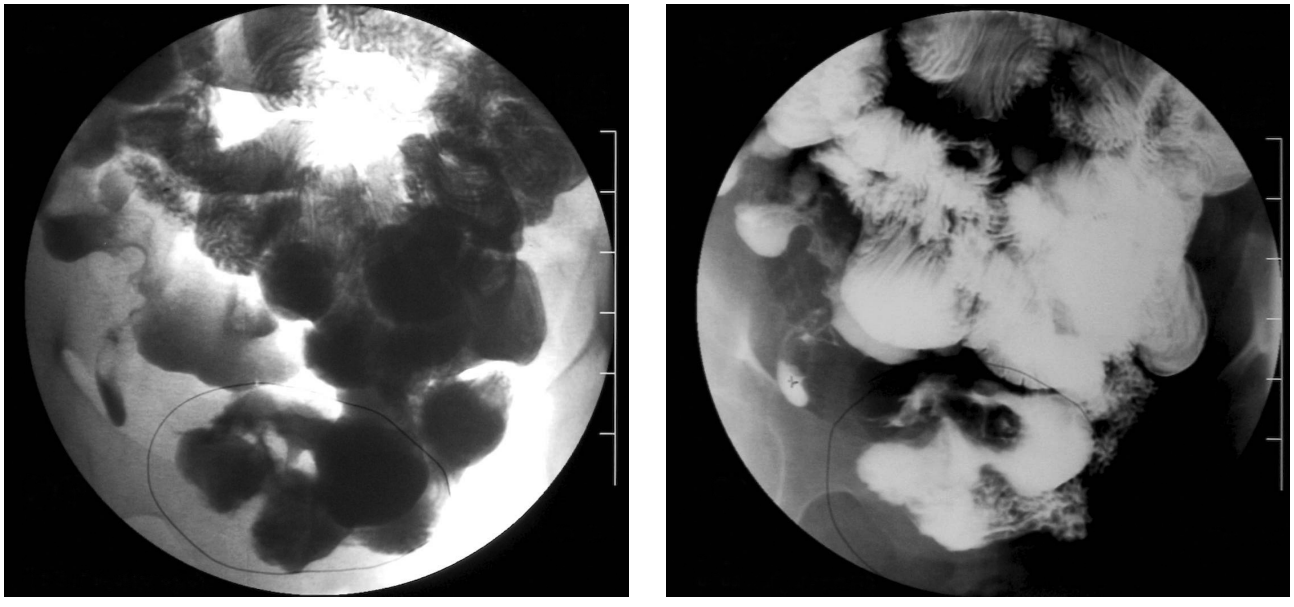

Figure 3, 4. Diverticular structure measuring 3 x 15 cm with a regular outline in the pericecal region in the enteroclysis investigation.

hemorrhagic ulcers on the mucosa of the surgically resected ileocecal bowel segment, which was at least 70 cm, were seen. There was a second lumen, 2 cm x 2.5 cm, with mucosal irregularity and ulceration at the nearby serosal adhesion area. Areas with abscess formation in serosal fatty tissue surrounding the region were also observed. Microscopically, a perforation was present in a diverticulum, having the muscular layer and intestinal type mucosa. According to the localization and histomorphological findings of the case, a perforated MD was suggested. There was no specific clue of CD in the surrounding bowel (Figures 5, 6). Postoperatively, she had no complication and was discharged from the hospital within five days. The medical treatment was gradually discontinued. At the third postoperative month, the patient was reexamined; she was well and weighed 55 kg. Her laboratory findings were completely normal.

DISCUSSION

Meckel's diverticulum results from incomplete obliteration of the omphalomesenteric duct. The rule of twos best describes this entity. It occurs in 2% of the population with a male-to-female ratio of 2:1 (6). CD may occur in any part of the digestive tract from the mouth to the anal region. Although the association of CD and MD has been widely reported, the direct involvement of a MD by CD is less common and is usually the result of contiguous spread (7). It has been recorded in patients with CD, with some authors reporting an incidence of 6% to 18.5% (8). In their review of 294 patients with CD, Andreyev et al. (9) found the prevalence of MD to be up to 3 times above that of the general population. However, Freeman (5) recently found 877 patients with CD, among whom 10 (about 1%) had a diagnosis of MD, including 6 men and 4 women, with a prevalence similar to the general population. None of these 10 diverticula showed involvement by CD. Most of these patients had been diagnosed with CD before 50 years of age and 7 patients before 30 years of age. CD within a MD is uncommon: only 1 of 10 patients described by Glick et al. (8) had CD that affected a MD, and most reports in the literature consist of isolated cases (10,11). In this article, a 19-year-old female patient was presented, who was followed with medical treatment on the assumption of CD, and was diagnosed with MD after the operation. MD is a real diverticulum involving all three layers of the intestine. Most of the patients with MD remain asymptomatic throughout life. Some patients with MD are evaluated primarily for iron deficiency anemia. Vague pain in the lower abdomen is not unusual and may be present for several years (13). Our patient had periumbilical pain that had been present for approximately one year, and iron deficiency anemia was detected.

In a report among the 1476 patients with MD, 16% were symptomatic. The most common clinical presentation in adults was bleeding, and in children, obstruction. In that report, among patients with a symptomatic MD, the male-female ratio was approximately 3:1 (4). The estimated lifetime risk of developing symptoms with a MD is 4-6%, with the risks of complications decreasing with age (12). Sixty percent of patients having complications are younger than 2 years of age. Bleeding is usually painless and results from mucosal ulceration within the ectopic gastric tissue. Although in

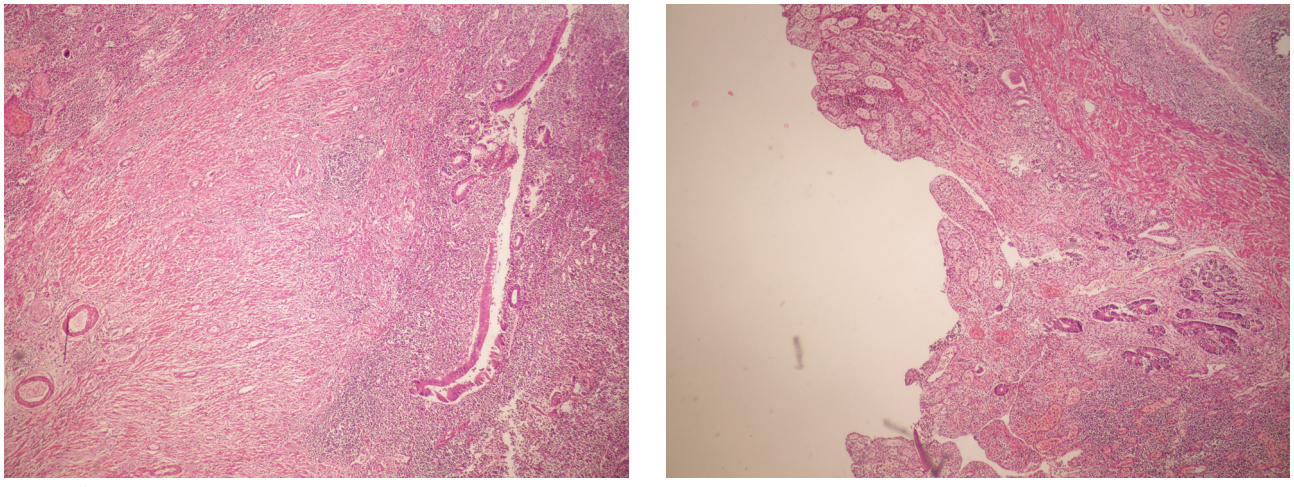

Figure 5, 6. Histopathological examination shows perforated Meckel's diverticulitis with abscess formation on subserosal lipomatous tissue.

children less than 3 years of age and infants, presentation with bleeding and obstruction are more common, diverticulitis is mostly seen in children at 7-8 years of age (13). Our patient was a 19-year-old female, who was operated due to obstruction. Obstruction may result from various mechanisms including volvulus of the small intestine or cecum over the band extending from the diverticulum to the abdominal wall, invagination, simple obstruction via surrounding of the intestine by the band, internal herniation, or incarceration of the diverticulum in the inguinal hernia (14, 15). In our case, volvulus in the terminal ileum and peri-ileocecal collection were detected.

Meckel's diverticulum is a pathology rarely found in everyday clinical medicine, especially when it presents with one of its complications. The specific diagnosis can be difficult to establish because of the low symptom sensitivity and specificity of the diagnostic and instrumental techniques used (16). In our case, the finding of nonspecific inflammation in the cecum and ileocecal valve was thought to be related with the chronic usage of nonsteroidal antiinflammatory drugs (NSAIDs) over the previous year, because of the chronic abdominal pain. NSAIDs may lead to mucosal ulcerations, increased mucosal permeability and inflammation in the lower gastrointestinal tract (17). An autopsy study of more than 700 cases revealed that 8.4% of the chronic NSAID users had small bowel ulcers, while this ratio was 0.06% in non-users (18).

Anemia and weight loss and terminal ileum and cecum ulcers are not usually seen in patients with MD. Nevertheless, in our patient, because of subileus and chronic abdominal colic pain, usually postprandial, for approximately one year, she was unable to eat adequately and had lost excessive weight. She had chronic iron deficiency anemia, and was hypoalbuminemic and cachectic. No histopathological findings of CD could be determined based on pathological examinations of colonic and terminal ileum biopsies and postoperative resected ileocolonic segment; thus, the patient was regarded as complicated Meckel's disease.

In conclusion, symptomatic MD treatment is surgical. MD may manifest with complications in adulthood, and establishment of the diagnosis is difficult in the preoperative period since it may exhibit findings that are similar to those of many other diseases. These cases may be mistakenly diagnosed with CD and treated, and may present with subacute or acute clinical pattern in a delayed manner.

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