

***Yersinia pseudotuberculosis* colitis presented with severe gastrointestinal bleeding**

Şiddetli gastrointestinal kanama ile prezente olan *Yersinia pseudotuberculosis* koliti

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We report an adult case of *Yersinia pseudotuberculosis* colitis who presented with severe gastrointestinal bleeding. A 25-year-old male had admitted with fever, vomiting, body aches, and massive lower gastrointestinal bleeding. Since diagnostic tests were unremarkable and the patient's hemodynamic condition was unstable, emergency explorative laparotomy was performed. During the operation, localized wall thickening and ulcers were seen in the cecum. Right hemicolectomy was performed. Histological examination showed non-caseation granulomas in mesenteric lymph nodes and transmural inflammation in the cecum. *Y. pseudotuberculosis* serology, based on histological suspicion, was positive. The patient was discharged with cure 12 days after the operation following gentamicin treatment. To our knowledge, there are only two reports about massive lower gastrointestinal bleeding due to *Y. pseudotuberculosis*. Although this is a rare entity, lower gastrointestinal bleeding due to *Y. pseudotuberculosis* should be taken into consideration in the differential diagnosis of patients presenting with massive lower gastrointestinal bleeding, as a possible cause.

Key words: *Yersinia pseudotuberculosis*, ileocolitis, severe gastrointestinal bleeding

INTRODUCTION

Yersinia pseudotuberculosis (*Y. pseudotuberculosis*) is the least common of the three main *Yersinia* species that cause infections in humans. *Y. pseudotuberculosis* primarily causes zoonotic infection in various hosts, including domestic and sylvatic animals and birds, but it has been associated with food-borne infection in humans. *Y. pseudotuberculosis* is a small pleomorphic coccoid Gram-negative bacillus that typically causes an abscess-forming mesenteric lymphadenitis diarrhea in humans and animals (1). Systemic complications of *Y. pseudotu-*

Bu olgu bildiriminde şiddetli gastrointestinal kanama ile prezente olan bir *Yersinia pseudotuberculosis* kolit olgusunu sunmayı amaçladık. 25 yaşında erkek hasta ateş, bulantı kusma, yaygın vücut ağrısı ve masif alt gastrointestinal kanama ile başvurdu. Tanısal testlerin belirleyici olmadığı bu hastada, hemodinami stabil olmadığı için acil laparotomi uygulandı. Operasyon sırasında çekumda lokal duvar kalınlığında artış ve ülser izlendi. Hastaya sağ hemikolektomi uygulandı. Çekumun histolojik incelenmesinde transmural inflamasyon ve mezenterik lenf bezlerinde non-kazeifiye granülom izlendi. Histopatolojik bulgu ve şüphelere göre yapılan serolojik değerlendirmede *Yersinia pseudotuberculosis* serolojisi pozitif bulundu. Operasyondan sonra gentamisin tedavisine başlandı ve 12 gün sonra iyileşmiş olarak taburcu edildi. Literatürde masif alt gastrointestinal kanamaya neden olan sadece iki *Yersinia pseudotuberculosis* olgusu bildirilmiştir. Nadir bir durum olmasına rağmen; masif alt gastrointestinal kanamanın ayırıcı tanısında *Yersinia pseudotuberculosis* koliti de düşünülmelidir.

Anahtar kelimeler: *Yersinia pseudotuberculosis*, ileokolitis, ciddi gastrointestinal kanama

berculosis are not infrequent. However, local complications due to gastrointestinal involvement such as perforation (2), subacute obstruction syndrome (3) and intussusception (4) are rare in colitis. *Y. pseudotuberculosis* is a very rare cause of severe gastrointestinal bleeding in humans. To our knowledge, there are only two reports in the literature that have been characterized with severe gastrointestinal bleeding (5, 6). We report herein an adult case of *Y. pseudotuberculosis* colitis presenting with severe lower gastrointestinal bleeding.

CASE REPORT

A 25-year-old male admitted to the Medical School Hospital. His history revealed that he had been well until 8 days ago when he developed abdominal pain and fever up to 39°C. He had no prior abdominal illness or surgery. On admission, the patient's complaints were abdominal pain, bloody diarrhea (4-5 times per day and malodorous), severe vomiting, and fever. Abdominal examination revealed diffuse tenderness especially on the right upper quadrant. Abdominal radiography showed multiple air-fluid levels. In the physical examination, blood pressure was 100/50 mmHg, fever 38.4°C and pulse 90/minute. Blood analysis showed hemoglobin: 9.8 g/dl, platelets: 207,000/mm³, white blood count: 12,400/mm³, total bilirubin: 1.54 mg/dl, serum alkaline phosphatase level: 264 IU/L (normal: <28 IU/L), serum liver enzymes: normal, and serum C-reactive protein level: 133 mg/dl (normal: 0-0.5 mg/dl). Hepatitis serology and coagulation tests were normal. On the first day of admission, massive rectal bleeding was observed. Central venous catheter was inserted. Colonoscopy could not be completed due to massive bleeding. Upper gastrointestinal endoscopy was normal. The rectal bleeding was severe and persistent despite infusion of 5 liters of dextrose-saline, 2 units of plasma and 7 units of blood, within a period of about 19 hours. His hematocrit dropped to 14.8% and his hemodynamic state was relatively unstable. Emergency laparotomy was performed. During the surgery, there were multiple lymph nodes in the mesentery of the right colon (the largest was nearly 4 cm in diameter). There was also a thickening in the medial aspect of the cecal wall. This image was mimicking Crohn disease. The colonoscope was inserted intraoperatively and multiple ulcers with the thickening of the wall in an area measuring 2x2 cm were seen near the ileocecal valve (Figure 1). Right hemicolectomy was performed. Histological examination of the mesenteric lymph nodes revealed granulomas with central microabscesses and coagulative necrosis (Figure 2). Prominent histological features were transmural inflammation composed of lymphocytes and plasma cells, superficial mucosal erosion and mucosal ulcerations in the large bowel (Figure 3). Histological findings were not consistent with Crohn disease and no pathogenic organisms were cultured from the specimen. However, as suggested by histological findings, *Y. pseudotuberculosis* serology was performed and found positive (in a ti-

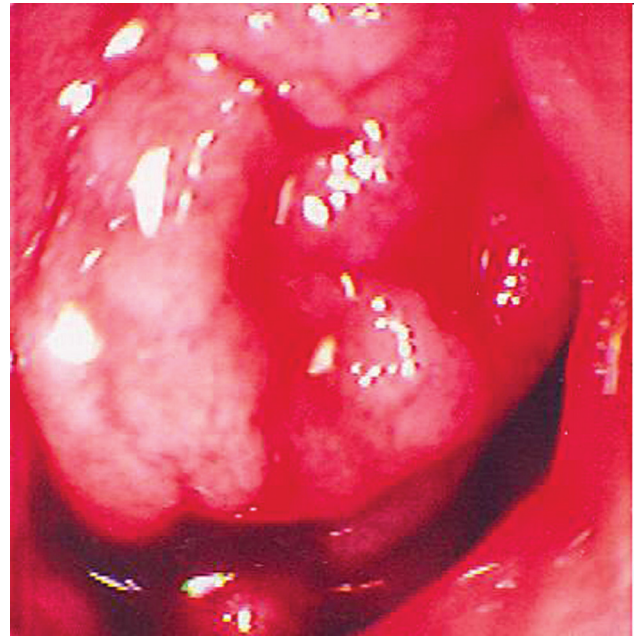


Figure 1. Multiple ulcers were seen near the ileocecal valve during operation by colonoscopy.

ter of 1/320). Serology and histological examination were in favor of *Y. pseudotuberculosis*. Gentamicin was started two days after the operation. The patient was discharged well 12 days after the operation.

DISCUSSION

The most common manifestations of *Y. pseudotuberculosis* infection in humans are mesenteric lymphadenitis and ileocolitis accompanied by abdominal pain and fever (7). *Y. pseudotuberculosis*

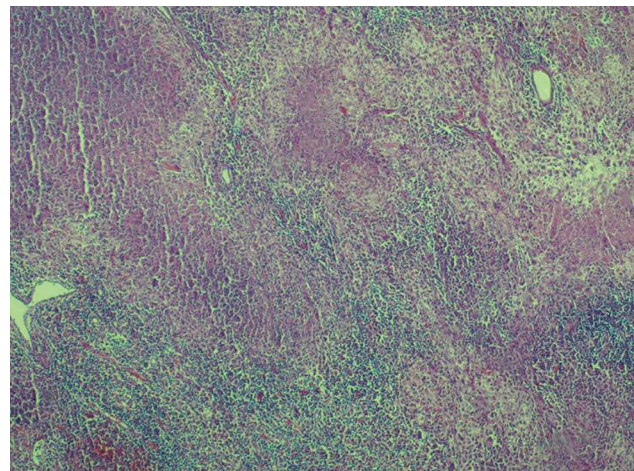


Figure 2. A section of a mesenteric lymph node shows granulomas with central necrosis and acute inflammation (hematoxylin & eosin [H&E], x50).

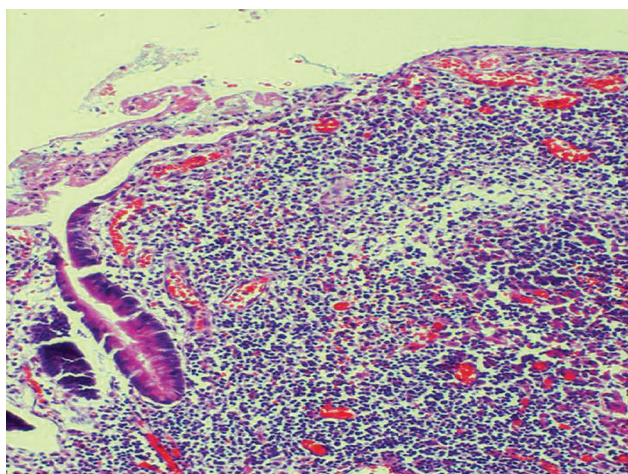


Figure 3. Superficial erosion and increased lymphocytes and plasma cells are seen in the bowel mucosa (H&E, x50).

causes mesenteric lymphadenitis and may affect the appendix tissue and mimic appendicitis (8). *Y. pseudotuberculosis* can be seen as an acute or chronic illness (9). Histologic examination reveals reticulogranulocytic infiltration, enlarged follicles and necrosis with or without abscess formation in mesenteric lymph nodes, as in our case (10, 11). A mass due to *Y. pseudotuberculosis* could be palpated in the right upper quadrant of the abdomen, which could be confused with tumoral lesions (12). Most *Y. pseudotuberculosis* infection is self-limited with a low case-fatality rate. However, the infrequent sepsis-associated illnesses in patients with chronic liver disease may be associated with a greater than 75% mortality among these patients (13). *Y. pseudotuberculosis* may be confused with both primary mesenteric adenitis such as infectious terminal ileitis and secondary mesenteric adenitis such as Crohn's disease (14).

The most frequently involved areas are the distal ileum and cecum, as in our case. The terminal ileum and cecum may appear to be edematous and erythematous, with a glassy and rigid serosal surface and purulent and necrotic mesenteric lymph nodes (15, 16). Histologically, non-specific inflammation can be seen, and ulceration has also been reported (15), as in our case. Cecal aphthous ulcer may be seen in patients with yersiniosis, *Campylobacter*, amebiasis, shigellosis, actinomycosis, cytomegalovirus, and other infectious diseases. On the other hand, *Y. pseudotuberculosis* can mimic inflammatory bowel disease (15, 16), especially Crohn disease, with respect to the symptoms and signs such as abdominal pain, abdominal mass and bleeding (3, 15, 16). Diagnosis may be confir-

med with tissue culture of biopsy specimens and serology. Local complications due to *Y. pseudotuberculosis* have been reported rarely, such as severe bleeding, colonic perforation, subacute obstruction, and intussusception. Colonic perforation and intussusception were reported in children and subacute obstruction and severe bleeding were reported in adults (2-5). To our knowledge, only two cases with severe bleeding due to *Y. pseudotuberculosis* have been reported in the literature (5, 6). In our case, we could not complete the colonoscopy due to severe bleeding so we were unable to take a biopsy for culture. All previously reported severe bleeding cases were diagnosed on histological examination and serology. However, all those cases were negative for cultures. The localization of the lesions in other severe cases were the terminal ileum and both terminal ileum and cecum. Most of the *Y. pseudotuberculosis* infection cases have been reported in Europe and furthermore, all of the local complications, except the intussusception cases, due to *Y. pseudotuberculosis* have been reported from Europe (2-6). Bleeding was seen 12 days after the symptom onset in two cases and liver enzymes were elevated in those cases (5). Values of hemoglobin dropped as low as 5.1-6.3 g/dl in all cases (5,6). Two patients were treated conservatively but our case underwent emergency operation for massive bleeding and hemodynamic instability (5, 6).

Y. pseudotuberculosis bacteria are difficult to isolate or culture. Diagnosis, therefore, weighs heavily on estimation of serum antibody titers of the bacteria and histological appearance of the lymph nodes. The abdominal CT scan and ultrasound may reveal enlarged mesenteric lymph nodes and/or peritoneal findings, including appendiceal inflammation, peri-appendiceal fluid, and/or terminal ileitis (17, 18). Colonoscopy (15) and laparoscopy (19) may be important in the diagnosis in such cases. This type of infectious colitis usually runs a benign course. If severe or complicated, it can be treated with antibiotics. It is sensitive to trimethoprim/sulfamethoxazole, tetracycline, chloramphenicol, and aminoglycosides. If complications arise, such as severe abdominal pain, including acute abdominal signs, peritoneal findings, intussusception, perforation, or severe bleeding, exploratory laparotomy should be done. This procedure would serve both diagnostic (actual gastrointestinal and/or appendiceal tissue could be obtained and analyzed for histopathologic and microbi-

ologic examinations) and therapeutic (such as in cases of perforation, intussusception and severe bleeding, as in our case) purposes.

Life-threatening lower gastrointestinal bleedings have been described in Crohn's disease, angiodysplasia and diverticulosis. Although a rare entity, gastrointestinal bleeding due to *Y. pseudotuberculosis*

losis, as in our case, should be taken into consideration in the differential diagnosis of patients presenting with massive lower gastrointestinal bleeding. Furthermore, *Y. pseudotuberculosis* should be remembered in the differential diagnosis of ileocolitis and mesenteric adenitis in endemic areas, especially in the winter.

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