



Primary Tuberculous Colitis Mimicking Colon Carcinoma in an Immunocompetent Patient

İmmünkompetan Hastada Kolon Karsinomunu Taklit Eden Primer Tüberküloz Kolit

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ABSTRACT

The prevalence of tuberculosis is rising again. It can be seen in any organ system, but isolated primary colon involvement is very rare. Its symptoms are non-specific and may mimic Crohn's disease, adenocarcinoma or other infectious diseases. Diagnosis is challenging, especially in the absence of pulmonary tuberculosis. In this case report, we present a patient with isolated tuberculosis in the right colon who developed acute abdomen during hospital stay and underwent emergent right hemicolectomy.

Keywords: Tuberculosis, colon cancer, intestinal obstruction, differential diagnosis

ÖZ

Tüberküloz prevalansı yeniden artmaktadır. Her organ sisteminde görülebilir; ancak izole primer kolon tutulumu çok nadirdir. Semptomları spesifik değildir; Crohn hastalığı, adenokarsinom ya da diğer enfeksiyöz hastalıkları taklit edebilir. Özellikle pulmoner tüberküloz eşlik etmiyorsa, tanısı zordur. Bu olgu sunumunda, hastanede yatışı sırasında akut karın gelişen ve acil sağ hemikolektomi yapılan, izole sağ kolon tüberkülozlu bir hasta takdim edilmektedir.

Anahtar Kelimeler: Tüberküloz, kolon kanseri, intestinal obstrüksiyon, ayırıcı tanı

Introduction

Tuberculosis is a re-emerging infectious disease primarily affecting the pulmonary system. Abdominal tuberculosis is the sixth most common form of extrapulmonary tuberculosis; usually secondary to dissemination from the lungs.¹ Primary colonic involvement is rarely seen and in the absence of pulmonary infection, it remains a considerable diagnostic challenge as it may mimic inflammatory bowel disease (especially Chron's disease), other infectious processes such as amoebiasis and rarely colon carcinoma.² Herein, we report a case of isolated primary tuberculous colitis which was presented as a hypertrophic mass in the ascending colon, mimicking colon carcinoma, and the patient was operated because of intestinal obstruction. A right hemicolectomy was performed.

Case Report

A 34 year-old female was admitted to the hospital with the complaint of abdominal pain and distention which worsened about 4 hours after supper for the last six months. She was otherwise healthy and did not have any previous surgery. Her pain was localized to right of the umbilicus and subsided after defecation. She denied melena, hematochezia, gastric pain, gastroesophageal reflux or anorexia; however she lost 13 kg due to agliophobia. She had been suffering from constipation-diarrhea episodes and night sweats for the last 3 months.

The colonoscopy was performed in a different hospital. It was reported that an ulcerovegetan mass was observed in the ascending colon. Biopsies from the mass revealed chronic non-specific colitis. She was not given any medical treatment. Her physical examination was remarkable for abdominal



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tenderness in right upper and lower quadrants. Her bowel sounds were normoactive and she did not show any evidence of guarding or rebound tenderness. There was no palpable mass in her abdomen. Her vital signs were within normal ranges.

Laboratory workup was remarkable for anemia (hemoglobin: 7.7 g/dL), hypoalbuminemia (1.87 g/dL) and low prealbumin (2.72 mg/dL). Her erythrocyte sedimentation rate and C-reactive protein level were elevated (29 mm/hr and 9.97 mg/dL respectively). Her liver enzymes, bilirubin, kidney function tests and blood glucose level were within normal ranges. Anemia parameters revealed chronic disease anemia. Among tumour markers, CA 15-3 and CA 125 were elevated (29.17 U/mL and 127.2 U/mL respectively), carcinoembryonic antigen, α -feto protein and CA 19-9 were within normal ranges. Her stool was negative for amoeba or other parasites.

Her chest X-ray showed no evidence of pulmonary tuberculosis. Double contrast colon examination was performed and an apple core lesion was detected in the ascending colon (Figure 1a), suggesting a malignant mass. Computed tomography of the abdomen showed diffuse thickening of the colon wall in a 10 cm segment of ascending colon, multiple pathologic mesenteric and paraaortic lymphadenopathies and mild ascites (Figure 1b). There were multiple hypodense (30 Hounsfield units) lesions in all segments of the right hepatic lobe, the largest of which measured 3.7x2.6 cm. They were interpreted as metastasis from the colonic mass.

During her hospital course, an acute abdominal pain, distention and tachycardia developed. Her plain abdominal graphy showed air-fluid levels. She was emergently taken to the operating room with the diagnosis of acute intestinal obstruction due to her colonic mass. Intraoperatively, multiple masses were palpated in the right colon and mesentery of the small bowel was full of lymphadenopathies. Right hemicolectomy and end ileostomy was performed. Specimen was fixed in 10%

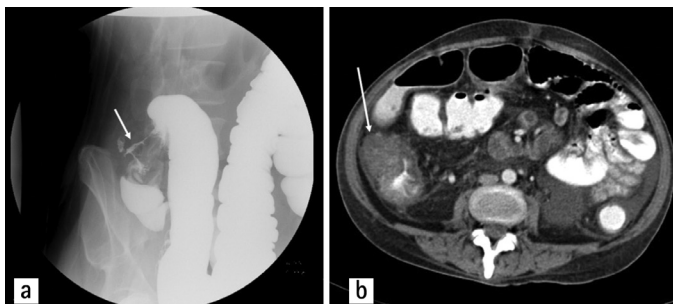


Figure 1. a) Apple core lesion in the ascending colon in double contrast colonic examination, b) Diffuse thickening of the ascending colon wall in computed tomography

neutral buffered formalin solution and processed routinely for paraffin embedding. Five micrometer thick sections were stained with Hematoxylin-Eosin and Ziehl-Neelsen stain for light microscopy. In microscopic examination superficial ulceration with underlying submucosal granulomatous inflammation were observed (Figure 2a). The characteristic histologic lesion consisting of caseating, often confluent, granulomas were present throughout the submucosa (Figure 2b). A rim of lymphocytes and giant cells were present at the periphery of the granulomas. Acid-fast stain demonstrated the acid-resistant microorganisms, typically rod-shaped, preferentially within necrotic areas and macrophages (Figure 2c, 2d). She was consulted to the infectious diseases department and four-agent anti-tuberculosis therapy (isoniazid 1x250 mg, rifampicin 1x500 mg, pyrazinamide 1x500 mg and ethambutol 1x750 mg daily) was initiated. After one year of anti-tuberculosis therapy, her ileostomy was closed. Her postoperative course was uneventful and pathological examination was negative for acid resistant bacilli.

Discussion

After a decline until mid-1980s, the incidence of tuberculosis has started to increase in the past two decades.³ This increase is considered to be due to the increase in human immunodeficiency virus infection, economic recession, overcrowding and increased drug resistance.⁴ Tuberculosis was declared to be a global public health emergency in 1993

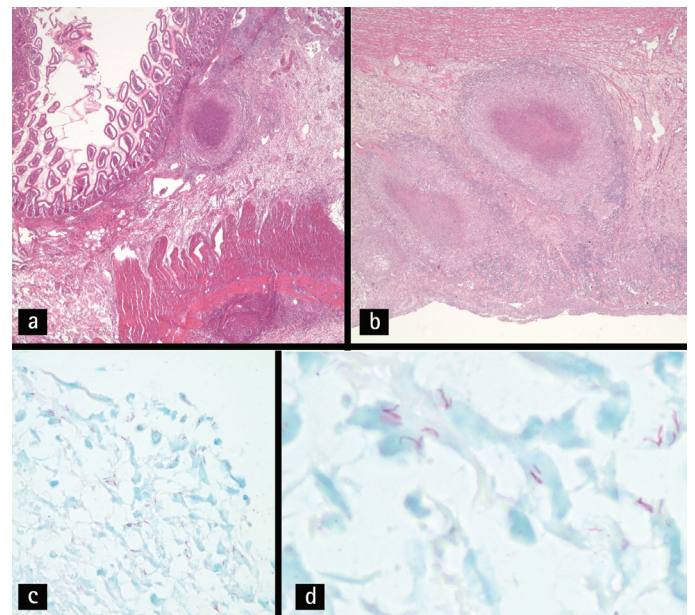


Figure 2. a) Numerous epithelioid, confluent granulomas characterize high-power view of abundant necrotic gastrointestinal tuberculosis, b) Well-formed epithelioid submucosal debris at the center of a tuberculoid granuloma with central caseation, c, d) Acid-fast stains highlight intracellular bacilli (stained red)

by World Health Organization. In 2011 there were estimated 8.7 million new tuberculosis cases and 1.4 million deaths caused by tuberculosis.⁵

Consistent with the overall trend, abdominal tuberculosis rates are rising.⁴ Of the 11,387 recorded tuberculosis patients in the United States in 2009, 21% had extrapulmonary manifestations, including intra-abdominal disease.⁶ Abdominal tuberculosis; referring to tuberculosis of peritoneum and its reflections, gastrointestinal tract and solid visceral organs alone or in combination; is the sixth most common form of extrapulmonary tuberculosis; following lymph node, pleural, disseminated, pericardial and meningeal tuberculosis.¹ Ileocecal region is the most common site of intestinal tuberculosis due to its histological features rich in lymphatic tissue, Peyer's patches. Isolated colonic involvement is reported in 2-3% of patients with abdominal tuberculosis; 19% of which is in the ascending colon.^{7,8} Primary intestinal tuberculosis accounts for less than 1% of all abdominal tuberculosis cases.⁹ Isolated primary colonic tuberculosis is even more uncommon and in the absence of pulmonary infection, it remains a considerable diagnostic challenge as it may mimic inflammatory bowel disease (especially Chron's disease), other infectious processes such as amoebiasis and rarely colon carcinoma.²

Majority of patients present with non-specific symptoms like chronic abdominal pain, weight loss, altered bowel habit or fever. Physical examination may reveal findings like pallor, malnutrition, palpable mass, tenderness and distended abdomen. Double contrast bowel examination may show strictures, focal ulcers and polypoidal masses.¹⁰ Our patient had an apple core lesion which was suggestive of a neoplastic mass. The common tomographic features are enlarged para-aortic nodes, asymmetric bowel wall thickening, ascites, inflammatory masses of the bowel wall lymph nodes and omentum.¹ All of these features were presented in our patient.

Colonoscopy and biopsy is the diagnostic procedure of choice.¹¹ Ulceration, nodularity, and luminal narrowing are the prominent endoscopic findings mostly affecting the right colon. Histology is helpful in ruling out other conditions, but tuberculosis-specific findings such as caseating granuloma and acid-resistant bacilli are rarely seen.¹⁰ This suggests that tuberculosis should not be ruled out if biopsy is not conclusive, which was the case in our patient. If desired, colonoscopy may be repeated, deep biopsies should be taken preferably from the margins of ulcerations, because tuberculous granulomas are often submucosal as compared to mucosal granulomas of Crohn's disease.¹² Polymerase chain reaction analysis of biopsy specimens has been shown to be more sensitive than acid-fast stain.¹³

Intestinal tuberculosis responds to medical treatment well, surgical treatment should be considered in the presence of complications. Most common complications are obstruction, fistulae, perforation and hemorrhage.¹⁴ Surgical intervention is also recommended if intestinal stenosis persists after 3-6 months of anti-tuberculosis treatment, if malignancy cannot be ruled out or in the presence of accompanying malignancy. As a conclusion, tuberculosis is an insidious infectious disease that can mimic almost anything else. As its prevalence is increasing again, it should be considered in differential diagnosis of colonic hypertrophic lesions, especially in suspicious cases with accompanying symptoms like unexplained fever and night sweats. Co-existing pulmonary tuberculosis is documented in only 13% of isolated colorectal tuberculosis⁷, therefore it should not be ruled out in the absence of pulmonary involvement. Polymerase chain reaction analysis should be carried out on biopsy specimens.

Ethics

Informed Consent: Consent form was filled out by all participants.

Peer-review: External and internal peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: Arman Erkan, Erhan Hamaloğlu, Concept: Arman Erkan, Erhan Hamaloğlu, Design: Arman Erkan, Erhan Hamaloğlu, Data Collection or Processing: Arman Erkan, Erhan Hamaloğlu, Analysis or Interpretation: Arman Erkan, Erhan Hamaloğlu, Literature Search: Arman Erkan, Erhan Hamaloğlu, Writing: Arman Erkan, Erhan Hamaloğlu.

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