

## A 17-Year Old Man with Colitis Tuberculosis and Fistula Perianal

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### ABSTRACT

*Tuberculosis (TB) remains to be one of the most common problems in developing countries such as Indonesia. It can involve many organs including gastrointestinal tracts. Colonic tuberculosis is an ancient disease and has long been recognized. However, it is sometimes difficult to make early diagnosis due to its nonspecific signs and symptoms.*

*Perianal granulomas or perianal fistula presents some degree of diagnostic difficulty. A spectrum of diseases can produce granulomas in perianal region and perineum. Most are infectious or inflammatory diseases. Standard histological diagnosis often less significant to clarify the etiology and treatment will vary from one to another disease entity.*

*In this report, we present a case 17-years old man with colitis TB and fistula perianal, in which the initial diagnostic workup suggested Crohn's disease. Mantoux test, Acid Fast Bacilli test on fecal examination and polymerase chain reaction analysis revealed negative result. The chest X-ray was normal; while the fistulography X-ray: revealed 2 orifices in rectosigmoid area. The colonoscopy revealed mucosa edema with ulceration in rectosigmoid and pedicular polyp in the caecum. Initial colonoscopy diagnosis was Crohn's disease with differential diagnosis colitis ulcerative, colitis TB, colitis infection. Results of direct or post homogenizes examination (Ziel-Nielsen staining) revealed that no acid-fast bacilli was found. Multiple biopsies were done, which indicated mucosa edema with ulceration in rectosigmoid area, pedicular polyp in the caecum, and surrounded by fistula perianal; while histopathological examination showed inflammatory-caseating-epithelioid-granulomas and giant cells (Langhans datia cell) caused by tuberculosis. It highlights the need for awareness of intestinal TB along with the differential diagnosis of chronic intestinal disease. Standard regimen of antituberculosis treatment was given and the patient showed good clinical response.*

**Keywords:** *Crohn's disease, caseating epithelioid granuloma, giant cell, colitis TB, perianal fistula*

### INTRODUCTION

The incidence of abdominal tuberculosis (TB) has been steadily increasing for the past 20 years and 2–3% of patients reported with abdominal TB have isolated colonic involvement.<sup>1</sup> Intestinal TB is usually

a diagnostic challenge, particularly in the absence of active pulmonary infection.<sup>1,2,3</sup> It may mimic many other abdominal diseases, such as other infection processes, tumors, periappendiceal abscess, and Crohn's Disease (CD). Several cases of intestinal TB have so far been described including a few reports of intestinal TB mimicking CD. The differential diagnosis between TB and CD is important since when TB is suspected, empiric treatment with antituberculosis agents should be considered, especially if immunosuppressive treatment for CD should be initiated.<sup>2,4,5</sup>

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Perianal fistula precedes or presents simultaneously with the diagnosis of intestinal disease in 36-81% of patients with CD who develop perianal disease. A small proportion of patients with CD may persist in having only isolated perianal involvement. Perianal fistulas occurred in 12% of patients with ileal CD, in 15% of patients with ileocolonic disease, in 41% of patients with colonic disease and rectal sparing, as well as in 92% of patients with colonic disease and rectal involvement.<sup>6</sup>

Extrapulmonary TB accounts for 5% of all TB cases. Tubercular perianal disease is also rare, clearly comprising less than 10% of all perianal diseases and 0.7% of all TB cases. Ano-perianal TB may be associated with abdominal TB, either as an extension of the original lesion or because of spread via the lymphatic circulation. Overall, the incidence will vary in general population.<sup>6</sup>

### CASE

A 17-year-old man had a chief complaint of blood and mucus in his stool. History of present illness includes the patient's complaint of having orifice around anal area since 2002. He went to a doctor and was diagnosed to have perianal fistula, so he had a surgery. About 1.5 years prior to his admission at Cipto Mangunkusumo hospital, patient complained diarrhea at frequency of 8 times per day and the presence of blood and mucus in his stool, weight loss of 5 kg in 6 months, anorexia, weakness, low grade fever, nausea, bloating and episode of pain in the right lower abdominal quadrant. He did not report about arthralgia, rash, or cough.

One week ago, the patient was admitted to Tangerang hospital and later he was referred to Department of Surgery at Cipto Mangunkusumo hospital. However, since he had a complaint of diarrhea and the presence of blood and mucus in stool, he was being consulted to Gastroenterology Division. The patient had no past history of TB and was not aware of any TB exposure. He is a non-smoker. There was no family history of diabetes, inflammatory bowel disease or colon cancer.

On physical examination, the patient had good general condition and he was fully alert. His vital signs showed blood pressure of 110/80 mmHg, heart rate of 80 x/minute, temperature of 37.8°C, respiratory rate of 20 x/minute. There was no jaundice in his sclera and the conjunctiva was not pale. He had normal heart and lung sounds. The abdominal examination revealed mild tenderness, mostly confined to the right lower quadrant. The extremities were normal. Digital rectal examination (rectal-touché) indicated 2 perianal fistula, normal sphincter tone and feces and blood remained on the hand-gloves

Laboratory examination findings were hemoglobin

10.3 g/dL, leukocytes count 10,400/uL, hematocrit 31.8%, platelet count 922,000/uL, erythrocytes sedimentation rate 40 mm, erythrocytes count 4.07 million/uL, mean corpuscular volume 78.1 fl, mean corpuscular hemoglobin 25.3 pg, mean corpuscular hemoglobin concentration 32.4 g/dL. The differential count revealed B2/E4/N68/L20/M6, prothrombin time was 15.3 second, activated partial thromboplastin time was 40.1 second. Mantoux test, acid-fast bacilli test on fecal examination and polymerase chain reaction analysis revealed negative results, the fecal routine examination was normal.

The chest X-ray revealed normal result (figure 1), the fistulography X-ray revealed 2 orifices in rectosigmoid area (figure 2). Colonoscopy revealed mucosa edema with ulceration in the rectosigmoid area and pedicular polyp in the caecum (figure 3). The initial colonoscopy diagnosis was CD with the following differential diagnosis, i.e. colitis ulcerative, colitis TB, and colitis infection. Results of direct or post homogenizes examination (Ziel-Nielsen staining) revealed that no acid-fast bacilli was found. Multiple biopsies was done, which revealed mucosa edema with ulceration in rectosigmoid area, pedicular polyp in the caecum, and surrounded fistula perianal; while histopathological examination showed inflammatory-caseating-epithelioid-granulomas and giant cell (Langhans datia cell) caused by TB (figure 4). Results of direct or post homogenizes examination (Ziel-Nielsen staining) reveals that no acid-fast bacilli was

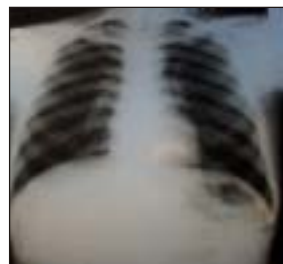


Figure 1. The chest X-ray reveals normal result



Figure 2. The fistulography X-ray reveals 2 orifices in rectosigmoid area



Figure 3. Colonoscopy reveals mucosa edema with ulceration in the rectosigmoid and pedicular polyp in the caecum. Initial colonoscopy diagnosis was CD with differential diagnosis of colitis ulcerative, colitis TB, colitis infection. Multiple biopsies were obtained.

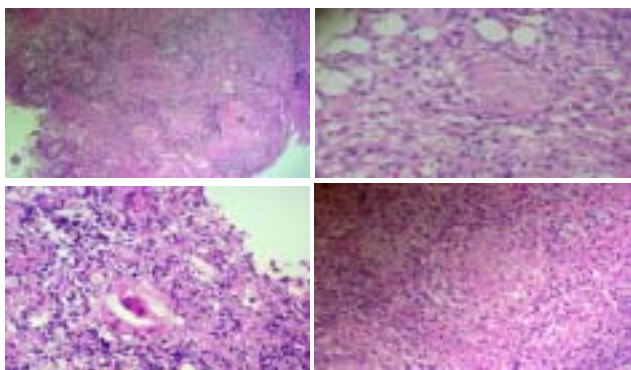


Figure 4. Histopathological examination shows inflammatory-casating-epithelioid-granulomas and giant cell (Langhans cell) caused by TB. No malignancy was found

found.

The patient was treated with rifampicin (10 mg/kg/day), isoniazid (5 mg/kg/day), pyrazinamid (30 mg/kg/day), and ethambutol (15 mg/kg/day). Over the next 14 days, the fever diminished, the stools were formed, at a frequency of 3-4 times per day, no blood or mucus.

## DISCUSSION

The ileo-caecal area is the most commonly involved area in colonic TB.<sup>1,2,3,4,5,7</sup> The apparent affinity of the tubercle bacilli on lymphoid tissue and areas of

physiologic stasis facilitating prolonged contact between the bacilli and the mucosa may become the reason for the ileum and caecum being the most common sites of the disease. Other areas of colon other than the ileocaecal area represent the next more common site of tuberculous involvement in gastrointestinal (GI) tract, which are usually manifested as segmental colitis involving the ascending and transverse colon.<sup>1,7</sup> Colonic TB may present as an inflammatory stricture, hypertrophic lesions resembling polyp or tumor, segmental ulcers, fistula and colitis or rarely, diffuse tuberculous colitis.<sup>4</sup> The diagnosis can be quite difficult since there are no specific clinical symptoms of large bowel TB and only a quarter of patients have chest X-ray images showing evidence of active or healed pulmonary infection.<sup>1,7,8</sup>

The clinical, radiological and endoscopic images are most likely to be confused with neoplasms or CD, and infrequently with other considerations including amoeboma, Yersinia infection, GI histoplasmosis, and periappendiceal abscess.<sup>4</sup>

The diagnostic procedure of choice is colonoscopy and biopsy.<sup>9</sup> Apart from routine histological examination looking for caseating granulomas, appropriately stained slides should be prepared to look for acid-fast bacilli and biopsies should also be sent for culture.<sup>4</sup> Biopsies should be taken preferably from the margin of ulcerations because granulomas are often submucosal.<sup>4</sup> However, granulomas with or without caseation are usually seen in less than 50% of patients.<sup>1,4,7</sup> while clusters of epithelioid cells without well-formed granulomas have been reported to occur in 20–30% of the biopsies obtained.<sup>1,7</sup> Similarly, in a considerable number of cases, the biopsies have features of chronic inflammation but no granulomas, caseation or clusters of epithelioid cells were found.<sup>1,7</sup> Only 35–60% of cases can be rapidly diagnosed by the finding of acid-fast rods;<sup>4</sup> however, there are reports indicating no detection of tubercle bacilli in the biopsies.<sup>1</sup>

Culture of the biopsy material may increase the diagnostic yield.<sup>4</sup> However, disappointing results with 0% detection of acid-fast bacilli have also been reported.<sup>1</sup> Polymerase chain reaction analysis of biopsy specimens obtained by endoscopic examination has shown to be more sensitive than culture and acid-fast stains in diagnosing intestinal TB.<sup>10</sup> Other studies have suggested that an enzyme-linked immunosorbent assay using mycobacterial saline-extracted antigen may increase the yield of correct diagnosis of colonic TB.<sup>11</sup> Extensive infiltration of the peritoneum, omentum and mesentery – in the form of peritoneal folds thickening – and the coexistence of high density peritoneal fluid are CT findings favoring the diagnosis of TB involvement.<sup>12</sup>

Small bowel series and barium enema most often reveal a high-riding caecum with or without a string-like lesion of the terminal ileum.<sup>4</sup> The preferred treatment of GI TB includes antituberculosis agents, with surgery reserved primarily for complications.<sup>4</sup>

The following causes of perianal granuloma are reported in the medical literature, i.e. CD is by far the most common cause, followed by TB and actinomycosis, both of which must be considered in the evaluation of the perianal fistula or fissure that does not heal or that recurs after appropriate treatment.<sup>6</sup>

The etiology of perianal fistulas in patients with CD may be fistula-in-ano arising from inflamed or infected anal glands and/or penetration of fissures or ulcers in the rectum or anal canal. Perianal lesions that occur in patients with CD include skin tags, hemorrhoids, fissures, anal ulcers, low fistulas, high fistulas, rectovaginal fistulas, perianal abscesses, anorectal strictures, and cancer. The Parks classification uses the external sphincter as a central point of reference to describe 5 types of perianal fistulas, as follows: superficial (low), intersphincteric (low or high), transsphincteric (low or high), suprasphincteric (high), and extrasphincteric (high). Fistulas are then classified as simple or complex.<sup>6</sup>

The postulated mechanisms by which the tubercle bacilli reach the perianal region are as follows: (1) hematogenous spread from the primary lung focus in childhood with later reactivation; (2) ingestion of the bacilli in sputum from active pulmonary focus; (3) direct spread from adjacent organs and; (4) through lymph channels from infected nodes.<sup>6</sup>

The most frequent presentations are suppurations and fistulas but it can also present as anal pain, fever, weight loss or perianal without healing ulcers. The typical histological lesions are the epithelioid and giant cell tubercle around a zone of caseous necrosis, but the pathognomonic presence of caseation is not constant and presents a diagnostic challenge, especially in the case of CD with perianal localization.<sup>6</sup>

The simplest rapid method for diagnosis is the detection of acid-fast bacilli by microscope, even though 75% of patients with extrapulmonary disease show smear-negative results. Culture methods are confirmatory but it may take several weeks to become positive. The serodiagnosis of TB has a sensitivity of 16% and its clinical use is controversial.<sup>6</sup>

Our case illustrates not only a typical manifestation of colonic TB, but also a case mimicking CD. Colonoscopic differentiation between colonic TB and

CD can be difficult taking into account that both disease entities may present themselves with mucosal ulcerations and nodularity, aphthous ulcers, edematous mucosal fold, strictures and pseudopolyp and luminal narrowing. Perianal fistula may precede or present simultaneously with the diagnosis.

Although in our case the endoscopic appearance was suggestive of CD, but the multiple biopsies were done at mucosa edema which demonstrated ulceration in the rectosigmoid area, pedicular polyp in the caecum, and surrounded fistula perianal, with histopathological examination showing inflammatory-caseating-epithelioid granulomas and giant cell (Langhans cell) caused by TB. Finally, by histological detection, we were able to set the correct diagnosis of colonic TB.

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