

# Multiple Lesions of the Colon and Ileocaecal Valve in Colitis Tuberculosis Patient with Positive Bacilli Examination in the Stool

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## ABSTRACT

*It is sometimes hard to establish the diagnosis of colon tuberculosis because the ulceration features on ileocaecal valve and caecum are not specific. Moreover, biopsy of lesion area can only provide 60-80% detection. The lesions usually include linear or transversal ulcer, nodule, abnormal form of ileocaecal valve and caecum, inflammatory polyp and irregular multiple fibrous bands.*

*We report a case of colon tuberculosis in a 32-years-old woman with giant ulcer and pseudopolyps at ileus terminalis and ileocaecal junction detected by colonoscopy, in addition to multiple ulcers along the colon, starting from rectum to ascending colon. By fecal examination, positive Acid Fast Test (AFT) result was found and by chest X-ray, tuberculosis features were also found.*

**Keywords:** *tuberculosis colitis, multiple ulcers in colon, giant ulcer, pseudopolyp, fecal AFT, colonoscopy*

## INTRODUCTION

The incidence of abdominal tuberculosis worldwide has been increasing in the last 20 years and 2-3% studies report shows that abdominal tuberculosis occur in colon.<sup>1</sup> In Pakistan, there is more than 210,000 new tuberculosis cases every year and enteritis tuberculosis is found in less than 1% of the population.<sup>2</sup> In the developed countries, tuberculosis is frequently accompanied with Human Immuno-deficiency Virus (HIV) infection. It is also frequently found in elderly or due to migration between countries.<sup>3</sup> Of all tuberculosis cases, 1/8 of them are extrapulmonary tuberculosis and abdominal tuberculosis is approximately 11-16%.<sup>4</sup> In HIV patients, the incidence of extrapulmonary tuberculosis may reach almost 50% of population.<sup>4</sup>

In the United States of America, at the beginning of 20<sup>th</sup> century, intestinal tuberculosis was found as most frequent cause of "small intestinal" obstruction and stricture.<sup>5</sup> The Department of Internal Medicine Cipto Mangunkusumo hospital has reported a case of 18-years old boy with colon tuberculosis. The colonoscopy has demonstrated ulcerative mucosa, Halo's lesion and pseudopolyp. However, no tuberculosis microorganism has been found on the sputum smear and biopsy on the lesion.<sup>6</sup>

Colitis tuberculosis is sometimes hard to be diagnosed since the ulceration features on ileocaecal valve and caecum are not specific and not typical. Such features are also considered in Crohn's disease and other infection disease such as amuboma, Yersinia infection, gastrointestinal histoplasmosis and appendix abscess.<sup>1,3,5,6,7</sup> In addition, biopsy from the lesion area can only provide approximately 60-80% detection.<sup>1</sup> The colitis tuberculosis features generally include linear or transversal ulcer, nodule, abnormal form of ileocaecal valve and caecum, inflammatory polyp and irregular multiple fibrous bands.<sup>1</sup> Intestinal tuberculosis lesions are mostly found on ileocaecal area.<sup>2</sup> We report this case because there are multiple ulceration along the colon, from rectum to ascending

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colon, which has been suspected as none of tuberculosis ulcer.

## CASE

A 32-years old woman came to the Gastroenterology Outpatient Clinic complaining of a watery stool since  $\pm$  3 months ago; the stools sometimes mix up with blood and mucus. The patient had felt a fever almost every night, sometimes she also had cough, loss of appetite, lost weight  $\pm$  10 kg in 2 the last 2 months, no nausea or vomiting. She had visited the local government clinic. However, since her condition did not improved, she was then being referred to Subang hospital and she had been hospitalized for a few days. There was still no improvement; thus, she was being referred again to Cipto Mangunkusumo hospital with the diagnosis of ulcerative colitis. She had received some drugs, namely metronidazole, lacidofile, diagit, and spasmomen. She had no history of pulmonary tuberculosis or diabetes mellitus. None of her family had history of tuberculosis or diabetes mellitus. Her sister had been suffered from breast tumor.

On physical examination, we found that the patient was fully alert, the blood pressure was 120/80 mmHg, pulse rate was 80 x/minutes, respiratory rate was 20 x/minute; she had normal temperature and body mass index of 15.3 kg/m<sup>2</sup>. No pallor was found on her conjunctivas, no jaundice on her sclera, no enlargement on the cervical lymph nodes and her heart examination revealed normal result. On lung examination, we found moderate rales on upper lungs field. The abdomen was flat and supple, no palpable mass, the liver, spleen and kidney were not palpable, no edema on her extremities.

From the laboratory investigation, we found hemoglobin 9.7 g%, leukocytes 10,200/mL, thrombocyte 450,000/mL, AST 39 U/L, ALT 28 U/L, ureum blood level 23 mg/dL, creatinine blood level 0.6 mg/dL, natrium 132 meq/L, potassium 3.56 meq/L, chloride 109.0 meq/L, random plasma glucose 106 g/dL. By the fecal examination, we found microscopic Acid Fast Test (AFT) and *Blastocystis hominis*. The colonoscopy revealed an impression of multiple ulcers with various size on rectum, sigmoid,



Figure 1. Rectum ulcer by colonoscopy



Figure 2. Colon sigmoid ulcer by colonoscopy



Figure 3. Transversal colon ulcer by colonoscopy



Figure 4. Giant ascending colon ulcer by colonoscopy



Figure 5. Pseudopolyp and ileocecal ulcer by colonoscopy



Figure 6. Caecum nodule and pseudopolyp by colonoscopy



Figure 7. Terminal ileum ulcer by colonoscopy

descending colon and caecum. There were giant ulcer, pseudopolyp at ileum terminalis, ileocaecal junction and internal-external hemorrhoid grade I-II (figure 1-7).

From the biopsy, we found: (1) Necrotizing granulomatous ileitis (differential diagnosis: *Yersinia*, tuberculosis, Crohn's disease); (2) Infectious colitis, no malignancy signs was found. Chest X-ray revealed an impression of infiltrate in almost all of lungs area with



Figure 8. Chest X-ray showing infiltrate and lung consolidation

consolidation at sinus phrenikus and part of right diaphragm with the conclusion that such feature is in consistent with the feature of lung tuberculosis with bronchogenic distribution and right lung effusion.

The patient received treatment of rifampisin 300 mg, isoniazid 300 mg, B<sub>6</sub> 10 mg, ethambutol 3 x 250 mg, pyrazinamid 3 x 250 mg daily and metronidazole 3 x 500 mg. After having 7-week follow up, the patient only had complaint of muscle tenderness when she woke up in the morning. Her defecation had been improved, no diarrhea, her body weight increased 8 kg from 30 kg before treatment into 38 kg; there was no fever, no cough and she had better appetite.

## DISCUSSION

The incidence of intestinal tuberculosis in the developed countries has been increasing recently. In the United Kingdom, such increment is due to migrant patients who come from the area with high tuberculosis incidence.<sup>8</sup> The patient usually comes with the complaint of abdominal pain, watery stool, weight loss and fever.<sup>2,8</sup> In the case that we have been reported, the patient had complained of long diarrhea, a history that the stool was mixed up with blood and mucus, a remarkable weight loss and she felt having fever for almost every night. Sibuea et al, reported a 26-years-old woman with the chief complaint of continuous diarrhea for 5 months period. The patient also had pain on her right and left lower abdomen. She also had experienced appendectomy surgery. After having surgery, her complaint of diarrhea did not improved; she still felt weak, nausea, and she became thinner. By colonoscopy, it revealed mild hyperemic mucosa in the rectum, sigmoid and granuloma at the ileocaecal valve. The biopsy from the lesion area demonstrated tubercle, epithelial cells and Langhan's giant cells.<sup>9</sup>

Intestinal tuberculosis frequently occurs on ileocaecal and colon area. The abnormality may appear in the form of ulceration of colon mucosa, nodule, deformity of ileocaecal valve and inflammatory polyp on colon as well as irregular multiple fibrous band.<sup>1,2,8,10</sup> The colonoscopy feature for colon ulcer based on literature is transversal or linear.<sup>1</sup> On the contrary, we found round ulcers along the colon, from the rectum to the ascending colon. Other abnormalities were similar to the abnormality reported in the literature. Nevertheless, we also found protozoa, *blastocystis hominis*, by fecal examination. Whether it affects the ulcer form still needs further studies.

The gold standard procedure in diagnosing intestinal tuberculosis is by biopsy and culture of



lesion area, i.e. positive finding of microorganism, the *mycobacterium tuberculosis*. It may reveal false-positive result since the microorganism may be originated from the ingested sputum of patient with active pulmonary tuberculosis.<sup>11</sup> In the case that we have been reported, we found positive AFT by fecal examination, but the biopsy result on the lesion area indicated some differential diagnosis of *Yersinia*, tuberculosis and Crohn's disease in necrotizing granulomatous ileitis and the impression of infectious colitis.

Khan et al, reported that out of 35 patients with intestinal tuberculosis, the colonoscopy found abnormal form of caecum in 32 patients (91%), irregular valve in 28 patients (80%), colonic mucosal ulceration in 28 patients (80%), mucosal nodules in 11 patients (31%), and colonic stricture in 6 patients (17%).<sup>3</sup> The ileocaecal area is the most involved area and it is reported that more than 75% cases occur in jejunum and ileocaecal area; while in colon area is 12%.<sup>5</sup> Colitis tuberculosis may appear as diffuse colitis tuberculosis, which should call for differential diagnosis of colitis ulcerative and Crohn's disease, because steroid treatment may become life saving management in inflammatory bowel disease and in contrast, it may be fatal for intestinal tuberculosis.<sup>5</sup>

Chest X-ray may be helpful in diagnosing intestinal tuberculosis; however, normal result does not exclude the possibility of intestinal tuberculosis. There is only 20% of active pulmonary tuberculosis associated with gastrointestinal tuberculosis.<sup>7</sup> Based on their study, Bhargava et al reported that only 35% of 29 patients with colitis tuberculosis demonstrate evidence of presenting active pulmonary tuberculosis or history of tuberculosis. In our cases, the patient had the feature of active pulmonary tuberculosis and pleural effusion based on the chest-X ray.<sup>5</sup>

The main treatment for tuberculosis is by pharmacological treatment, surgery is necessary when there is a complication.<sup>8</sup> When intestinal tuberculosis has been strongly suspected, the treatment can be initiated by giving full-dose of anti-tuberculosis agent.<sup>5</sup> These complications call for surgery, e.g.: (1) Obstruction; (2) The presence of fistula; (3) Perforation; (4) Bleeding and the most frequently reported is obstruction which is approximately 15- 60%.<sup>5,7</sup> Gastrointestinal and peritoneal tuberculosis is treated by 4 drug regimens for 2 months followed by 2 drugs for 7 to 10 months period.<sup>7</sup> Nizam suggests following dose including isoniazid 5-10 mg/kg of body weight or 400 mg/day, rifampisin 10 mg/kg of body weight or 450-600 mg/day, ethambutol 15-25 mg/kg of body weight or 900-1,200 mg/day, pyrazinamid 25-35 mg/kg of body weight or 1.5-2 g/day. However, he does not mention how

long those drugs should be given.<sup>12</sup>

In our cases, the antituberculosis agents were administered with following dose, i.e. rifampisin 300 mg/day, isoniazid 300 mg/day, vitamin B<sub>6</sub> 10 mg/day, ethambutol 3 x 250 mg/day, pyrazinamide 3 x 250 mg/day and metronidazole was given as adjunctive therapy 3 x 500 mg/day for 1 week period to treat the *Blastocystis hominis*. Current center for disease control provides guidelines of initial treatment, which consists of 4-drug regimen, namely: isoniazid, rifampin, pyrazinamide and streptomycin or ethambutol.<sup>5</sup>

Park YS et al provide treatment for 10 months of 4-drug regimen in patient with colitis tuberculosis, either with or without pulmonary tuberculosis and it demonstrates a relatively good result.<sup>1</sup> The combination of isoniazid, rifampicin, ethambutol or streptomycin and pyrazinamide was administered for 9-12 months period, and then it was being followed-up for 425 ± 120 days. They found that 197 patients (94%) demonstrated no relapse cases during the follow-up period. Moreover, 12 patients (6%) died due to various complications, 8 of them were patients with abdominal tuberculosis who underwent surgery.<sup>3</sup> Park YS et al reported 7 patients with colitis tuberculosis who had been treated for 2 to 3 months, and subsequently having colonoscopy again. They reported a relatively good result, the ulcers healed and other parameters improved.<sup>1</sup>

In our cases, we administered 4-drug regimen, i.e. rifampisin, isoniazid + B<sub>6</sub>, ethambutol and pyrazinamide. We are going to follow-up the patient for 2-3 months period to evaluate the treatment success by repeating colonoscopy procedure, i.e. by evaluating whether there has been any improvement on the ulcers. Unfortunately, until now, the patient has not agreed to have another colonoscopy because she is still busy, there is no more complaint and her body weight has increased from 30 kg to 43 kg.

## CONCLUSION

Colitis tuberculosis is sometime hard to be diagnosed since its features are not specific. The duration of treatment vary from 9 to 24 months because it is difficult to establish the bacteriologic diagnosis and to evaluate the treatment success. In this cases, a patient complaining of watery stool since ± 3 months before admission which sometimes mixed up with blood or mucus. She suffered fever, loss of body weight and cough. By colonoscopy, we found positive fecal AFT. Intestinal tuberculosis is most frequently found on caecum and ileocaecal area, it may appear as ulcers, pseudopolyp, erosion, nodule or irregular form. Control by colonoscopy can be performed after 2 to

3 month treatment to evaluate the treatment success and to exclude other diagnosis.

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