Lung Tuberculosis with Suspect Peritonitis Tuberculosis: Case Report

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Abstract

Background: Tuberculosis is an infectious disease that caused by Mycobacterium Tuberculosis Complex. Tuberculosis is one of the oldest disease and cause death worldwide. Gastrointestinal TB is uncommon Peritoneal TB commonly caused pain as its presenting manifestation with abdominal swelling, fever, weight loss and anorexia. Active pulmonary TB is uncommon in patients with peritoneal TB.

Case Ilustration: A 19-year-old female came to Emergency Room with chief complaint of cough since 2 months ago accompanied with greenish phlegm. Patient also complaint shortness of breath, fever since 2 weeks ago, and also loss of appetite, weight loss around 8kg since 2 months ago. Patient also had nausea without constipation, patient had no history of previous illness and no one in the family was sick or currently on medication. On physical examination we found oxygen saturation 93% room air, ronchi on left and right lung, and also distended abdomen, with ascites.

Discussion: In This patient, Chest X-ray showed suspicion of miliary TB and minimal pleural effusion with Gene Xpert MTB/RIF showed positive. CT scan abdomen suggest wet type TB peritonitis. Patient with peritoneal TB concomitant with pulmonary TB are found less than 25% patients. In this patient, Gene Xpert MTB/RIF showed positive and CT scan abdomen suspicion peritoneal TB. Other examinations such as histopathological should be done to diagnose peritoneal TB.

Conclusion: The symptoms of pulmonary TB and peritoneal TB are slightly different and also could be overlapping. Initial examination needs to be done so physician can give antituberculosis treatment and it can reduce risk of mortality.

Keywords: Lung Tuberculosis, Peritonitis Tuberculosis

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Introduction

Tuberculosis is an infectious disease that caused by Mycobacterium Tuberculosis Complex. This bacteria is very complex, they consists of mycolic acid, complex-waxes, trehalose dimycolate, and mycobacterial sulfolipids which play a role in virulence.1

Tuberculosis is one of the oldest disease and cause death worldwide. There are 8 countries that has the most cases in the world India (26%), Indonesia (8,5%), China (8,4%), Philippine (6%), Pakistan (5,7%), Nigeria (4,4%), Bangladesh (3,6%), and South Africa (3,6%). 8,2% TB cases patients has HIV infection1,2. In 2016, United Nations (UN) set Sustainable Development Goals (SDG), that includes Global TB Target for 2016-2035. That target is to end epidemic diseases such as AIDS, Tuberculosis, Malaria, etc. To reduce TB incidence by 80% and reduce mortality form TB by 90% in 2030 compared to 2015 are the strategy to end TB.1

In Indonesia, the indicator targets for achievement in 2030 are reducing the mortality number from TB by 95% compared to 2015, reducing the incidence of TB by 90% in 2015 and no families experiencing economic problems due to TB, and also the national target for TB prevention is TB elimination in 2035 and TB free in 2050. TB elimination means achieving TB case of 1 case per 1 million population.1

This disease most often affects lungs, although other organs are involved. If properly treated, TB is curable in the vast majority of cases. TB may be fatal within 5 years if not treated properly. Transmission of this disease usually takes place through the airborne spread of droplet produced by patients with infectious pulmonary TB3.

Gastrointestinal TB is uncommon, making up 3,5% of extrapolmonary cases in the United States3. 58% of TB patients in the United Kingdom present with extra pulmonary TB and 5,9% have gastrointestinal TB2. Gastrointestinal TB need to be differentiated with Inflammatory Bowel Disease due to different therapeutic management. In fact, while most cases of gastrointestinal TB treated with effective regiments have a favorable outcome4.

The clinical manifestations of intestinal TB depend on the areas of involvement. The most common sites of involvement are the terminal ileum and cecum. In the terminal ileum or cecum, the most common manifestations are pain and interstitial obstruction. Peritoneal TB commonly caused pain as its presenting manifestation with abdominal swelling, fever, weight loss and anorexia. Active
pulmonary TB is uncommon in patients with peritoneal TB. The symptoms of TB may be obscured, because the process commonly coexists with other disorders such as cirrhosis with ascites\textsuperscript{5}.

**Case Illustration**

A 19 year old female came to the Emergency Room (ER) on 19\textsuperscript{th} January 2023 with chief complaint of cough since 2 months ago, accompanied with greenish phlegm. Patient also complaint shortness of breath and fever since 2 weeks ago, loss of appetite, and also weight loss up around 8kg since 2 months ago. Patient also had nausea without constipation symptoms. Patient had no history of previous illness and no one in the family was sick or currently on medication.

Physical examination revealed consciousness, blood pressure 127/84 mmHg, pulse rate 131x/minute, respiration 24x/minute, axillary temperature 37.2, and oxygen saturation 93\% room air. Dyspnea was found on physical examination, chest movement seemed symmetric, no retraction, vocal fremitus normal, ronchi was found on left and right lung. There’s distended abdomen in inspection, ascites(+), no pain, auscultation normal.

Laboratory finding shows complete blood test: Hemoglobin 9.4 g/dL; Leukocytes 16,34 x 103 / μL; Erythrocytes 4,64 x 106 / μL; Hematocrit 28.3\%; Platelets 175 x 103 / μL; SGOT 42 U/L; SGPT 32 U/L; Creatinin 0,36 mg/dL; Albumin 2,1 g/dL; Procalcitonin 6,15 ng/mL; 2x Swab PCR negative; normal ECG; Chest X-ray showed minimal pleural effusion left lung and suspect of Miliary TB.

Furthermore, patient was tested Anti-HIV showed negative, ANA test negative, gene Xpert MTB/RIF showed MTB detected medium. CT scan abdomen with contrast also tested for this patient. It showed diffuse ascites with thickening of the small intestine wall and thickening of the cecum to the ascending colon with significant fat stranding surrounding, multiple enlarged lymphnode at paraaorticaval which theses findings suggest a TB peritonitis(wet type).

Initial treatment for this patient is oxygen of 4 liters per minute with nasal canule, NaCl 0.9\% infusion, pantoprazole injection and ondansetron injection. Patient was treated for several days in the isolation room and patient got antituberculosis drugs. Patient got better after took the antituberculosis treatment.

**Discussion**

Diagnosis for this patient was pulmonary TB with suspected peritoneal TB. In this case, patient was found with complaints of coughing and feel
uncomfortable in her stomach and also had nausea, fever, and weight loss. This complaint has been felt for the last 2 months. On physical examination, ronchi was found on lung auscultation and also ascites was found in the abdominal. Chest X-ray showed suspicion of miliary TB and minimal pleural effusion with Gene Xpert MTB/RIF showed positive. CT scan abdomen showed diffuse ascites accompanied by thickening of the walls of the small intestine and thickening of the cecum to the ascending colon with significant fat stranding and multiple enlarged lymph nodes in the paraaorticabal, which all of these findings suggest wet type TB peritonitis.

Symptoms of peritoneal TB can be either acute or chronic intermittent. Most patients complaints abdominal pain, fever, diarrhea/constipation, weight loss, anorexia, and abdominal enlargement. Physical examination found diffuse abdominal tenderness, hepatomegaly, and ascites. Ascites occurs due to exudate fluid that comes from the tubercles. Approximately 90% of patients with peritoneal TB had ascites.6

Initial chest X-ray showed suspicion of miliary TB and minimal pleural effusion. Risk factors for peritoneal TB are HIV infection, diabetes melitus, cirrhosis, and malignancy. In this patient, there are no risk factor. Anti-HIV examination showed negative, as well as the results of the ANA test showed negative results.6

Figure 1. Chest X-ray showed suspicion of miliary TB and minimal pleural effusion

CT scan abdomen is the next examination for this patient. In this patient, radiologist suggest that the result showed wet type TB peritonitis. There are 3 types of peritoneal TB, which: wet type with ascites, cystic type with enlarged abdomen, and fibrotic type with abdominal mass consisting a thickened mesentery and omentum.6
Patient with peritoneal TB concomitant with pulmonary TB are found less than 25% patients. In this patient, Gene Xpert MTB/RIF showed positive and CT scan abdomen suspicion peritoneal TB. WHO recommends Xpert MTB/RIF as the preferred initial test for suspected pulmonary TB cases. WHO also recommends that Xpert MTB/RIF test can be used as the initial test in place of two specimens for all adults and children with suspected TB.\(^7\)

Diagnostic for abdominal TB are the result of mesenteric lymph node biopsy that showed histological of tuberculosis, inoculation or tissue culture show the growth of mycobacterium tuberculosis and histopathological examination show tuberculosis with necrosis caseous.\(^6\) Histopathologic provided a diagnosis of intestinal TB in 40-55% of specimens.\(^8\) The similarities in symptoms between TB gastrointestinal and inflammatory bowel disease are likely responsible for delays in starting antituberculosis treatment.\(^2\)

Other examinations such as histopathological should be done to diagnose peritoneal TB. Currently, this patient is given antituberculosis treatment and planned to carry out further examinations to make a definite diagnosis.

**Conclusion**

TB is a disease that often found, but TB peritonitis with lung TB is rare case. The symptoms of pulmonary TB and peritoneal TB are slightly different and also could be overlapping. Peritoneal TB often had a distended abdomen due to ascites and palpable mass in the abdomen. Diagnosis for pulmonary TB can be done by examining gene X-pert MTB/RIF while peritoneal TB by CT Scan abdomen, followed with histopathological examination. Initial examination needs to be done so physician can give antituberculosis treatment and it can reduce risk of mortality.
References