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A Case Report on Peritoneal Tuberculosis in an Immunocompromised Patient

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Background: Peritoneal tuberculosis (PTB) is one of the most challenging forms of extra pulmonary tuberculosis. Abdominal TB cases make up above 3% of all extra pulmonary TB as per the Index TB Guidelines. PTB is commonly due to reactivation of latent tuberculosis in the peritoneum. Numerous cases were still misdiagnosed due to nonspecific presentation. The golden standard for diagnosis is laparoscopic biopsy. Presenting signs and symptoms of PTB are unspecific such as ascites, abdominal pain and distension, fever, weight loss, diarrhea/constipation. Peritoneal tuberculosis is a significant cause of ascites in developing countries. The causative agent of peritoneal tuberculosis is Mycobacterium tuberculosis.

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Case Presentation: In this case study, a 52 year old male had complaints of progressive abdominal distension and fever for 2 weeks. Patient underwent diagnostic paracentesis, upper and lower GI endoscopy, biopsy and gene xpert to confirm peritoneal tuberculosis. Patient with peritoneal TB have gradually progressive abdominal swelling due to ascites and abdominal pain.
Conclusion: Peritoneal tuberculosis should be considered in differential diagnosis. Differential diagnosis, especially in the developing countries or under developed countries. This case highlights the easy diagnosis of the condition other than the other case reports.

Keywords: Peritoneal tuberculosis; ascitic fluid; pangastritis; diagnostic paracentesis; ulcer.

1. INTRODUCTION

Tuberculosis affects the lungs, but may involve other sites which referred as extra pulmonary TB [1]. Extrapulmonary TB represented 14% of the 6.4 million incident cases worldwide, and 15% in South-East Asia [2]. Peritoneal tuberculosis (PTB) is one of the rare forms of extra pulmonary tuberculosis. There is a chance of overlapping with other chronic condition such as liver cirrhosis and AIDS. Intestinal tuberculosis is a diagnostic challenge disease, in absence of active pulmonary infection. Numerous cases were still misdiagnosed due to nonspecific presentation [2,3,4]. The golden standard for diagnosis is laparoscopic biopsy [5]. Presenting signs and symptoms of PTB are unspecific such as ascites, abdominal pain and distension, fever, weight loss, diarrhea/constipation. Peritoneal tuberculosis is a significant cause of ascites in developing countries [6]. PTB develops as a result of reactivation of latent tuberculosis. Currently recommended regimen for PTB is similar to treatment of TB. Six months of treatment with the 4 drug regimen is effective and markedly improves the outcome.

2. CASE PRESENTATION

A 52 year old male patient was presented with complaints of progressive abdominal distension, fever for 2 weeks duration and history of weight loss. He had a history of cough for 1 month. Patient is a chronic alcoholic. He had known case of type 2 diabetes mellitus. On physical examination he was conscious, oriented and afebrile. His laboratory investigation showed a variation in CRP (88.8mg/L) and ESR levels (22mm/hr) were elevated. And other parameters like liver function and renal function were found to be normal

AFB sputum (1st day sample), AFB sputum (2nd day sample) were all negative. Culture sensitivity test of sputum showed normal flora only. Genexpert MTB/RIF ultra-extrapulomonary showed MTB not detected as well as the rifampicin resistance not detected. Here USG Abdomen and pelvis showed Grade I fatty liver. Tumor markers including CEA, CA 19-9 and PSA were normal. Diagnostic paracentesis was performed under USG guidance and ascetic fluid study depicted high protein, low SAAG and lymphocyte predominant ascites (TC-1160/90% lymphocytes).

CECT scan of abdomen and pelvis was performed with finding of gross high density ascites, omental fat stranding and irregular peritoneal thickening, an eccentric short segment bowel wall thickening noted in ileum with multiple subcentimetric lymph nodes- possible tuberculosis etiology. A detailed examination of upper GI endoscopy (Fig. 1) concluded Lax ge junction and severe pangastritis. Lower GI endoscopy revealed terminal ileal ulcers with patulous IC valve, sigmoid colon colitis-? Intestinal tuberculosis. Under colonoscopy, the patient resulted the following features; terminal ileal ulcers with patulous IC valve, sigmoid colon colitis and Intestinal tuberculosis. The histopathological assessment confirmed, especially biopsy resulted Peritoneal

3. TREATMENT

Initially patient was started with antibiotics (Inj. CIPROFLOXACIN 200mg IV 1-0-1), PPIs (Inj. PANTOPRAZOLE 40mg IV 1-0-1), and multivitamin capsule (C. BECOSULE Z 0-1-0). On day 2, T. tuberculosis. ITOPRIDE HYDROCHLORIDE) 50mg P/O 1-0-1 was given for stomach related problems. Patient was asked for further review. She had hospitalized for 7 days and finally the patient got symptomatically improved and discharged. After the review with histopathological report, he was diagnosed as Peritoneal Tuberculosis and had started the T. AKT drug. He was asked to come for the regular checkup.

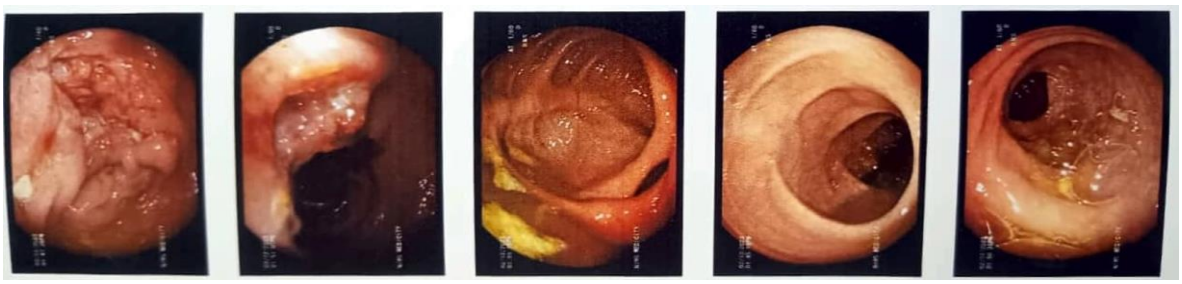

Fig. 1. colonoscopy- hemi circumferential large ulcers with nodularity seen patulous IC valve

4. OUTCOME AND FOLLOW UP

The case was diagnosed earlier than other case reports. Many case reports represented the case with delayed diagnosis which results in worsening of the condition. Abdominal distension and pain was reduced. Follow-up were taken and which showed a good results.

5. DISCUSSION

Peritoneal tuberculosis is a rare clinical presentation included in the extra pulmonary TB. Intestinal Tuberculosis can be misdiagnosed as many other inflammatory condition. Patient Symptoms of peritoneal TB are ascites, abdominal pain and distension, fever, weight loss, diarrhea/constipation. In most of the cases, tuberculosis patients experience different symptoms and pulmonary focus appearance. The patients who have peritoneal tuberculosis will also have other comorbidities like liver failure, diabetes mellitus, liver cirrhosis, renal failure and malignancy [7]. In this case, patient had diabetes mellitus which can be helpful to suspect tuberculosis. There is no completely specific or sensitive diagnostic procedure for peritoneal tuberculosis. Ascites is found in more than 90% of cases. Paracentesis is necessary for all ascites patients. The ascetic fluid ADA is potentially useful test, which is a diagnostic predicament [8]. ADA value is increased in tuberculous ascetic fluid because of the stimulation of T cells by the mycobacterial antigens [9]. Elevated ADA level is more specific (92.2%) and high sensitive (100%) than other tests. There is chance of getting false positive results in case of peritoneal carcinomatosis and pancreatic ascites [10].

Diagnostic laparoscopy might be one of the most reliable approaches accurate diagnosis due to its high sensitivity (93%) and specificity (98%) combined with the histopathology findings [11]. The laparoscopic peritoneal biopsy revealed that the patient was suffering from peritoneal tuberculosis. Laparoscopic examination is considered as the golden standard for definite PTB diagnosis. Analysis of ascitic fluid helps to distinguish the types of ascites. Patient had a low SAAG value which showed that the ascetic is non cirrhotic ascites. The other one, tumor markers including CEA, CA 19-9 and PSA were normal. Standard diagnosis confirmed that it was peritoneal TB. We try to identify mycobacterium samples, but this sample materials such as sputum, peritoneal fluid and blood found to be negative. We also performed Gene Expert to the patient and it was also negative. On examination of ascetic fluid, high protein, low SAAG and lymphocyte predominant ascites (TC-1160/90% lymphocytes) were seemed, which is enough to support diagnosis of tuberculosis. In selected cases tissue biopsy is appropriate to identify the disease. Since in this case was finally confirmed by tissue biopsy. In a systematic review 3 histological review were found have specificity for the diagnosis of gastrointestinal tuberculosis, which include confluent granuloma, caseating granuloma and ulcers lined by histiocytes [12]. In a recent study which concluded that histopathological diagnosis for peritoneal tuberculosis is only possible in some cases due to its poor sensitivity. Since this case was found to have a positive approach towards the histopathology [12].

Currently recommended regimen for PTB is similar to treatment of TB. Six months of treatment with the 4 drug regimen is effective and may extended to seven months in the second phase. Corticosteroids have been opted as adjuvant treatment, but are not universally recommend [13-16]. Surgical interventions may be needed in case of severe conditions.

6. CONCLUSION

This case highlights the easy diagnosis of the condition other than the other case reports. Even though it is difficult to diagnosis, but diagnostic

laparoscopy and biopsy makes helpful to identify. Patient was improved symptomatically. The clinical and laboratory tests strongly suggest that this case was PTB (Peritoneal Tuberculosis), which result in the initiation of the antitubercular regimen appropriately. Therefore, it is important to have an early diagnosis since delay in the management will become deleterious.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

CONSENT

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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