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## Case Report

# Tuberculosis peritonitis with features of acute abdomen in HIV infection

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## ABSTRACT

This case report introduces a 26-year-old male IV drug abuser with fever, abdominal pain and distension referred to the emergency ward. According to these findings, abdominal tenderness and involuntary guarding, an explorative laparotomy was performed. Multiple biopsies of omentum, peritoneum and liver were taken. Pathologic assessment of multiple biopsies confirmed intra-abdominal TB infection.

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## Case report

A 26-year-old male patient from Sanandaj, Iran, was admitted to emergency of Besat Hospital because of fever, abdominal pain and also obstruction symptoms. Abdominal pain was generalized and had a progressive nature with no dispersion. The patient's problem started about 2 days prior to admission and symptoms increased gradually. The patient had nausea and vomiting and a complaint of not having defecated for

12 h prior to admission. The patient did not complain of breathing difficulties. On physical examination, the patient was critically ill.

At admission, vital signs were as follows: temperature 40 °C, pulse 112 beats per minute, respiratory rate of 23 breaths per minute and blood pressure 120/70 mmHg. Head and neck examination showed bilateral anterior cervical lymph nodes. Examination of the heart and lungs were normal. During abdominal examination, the abdomen was distended with

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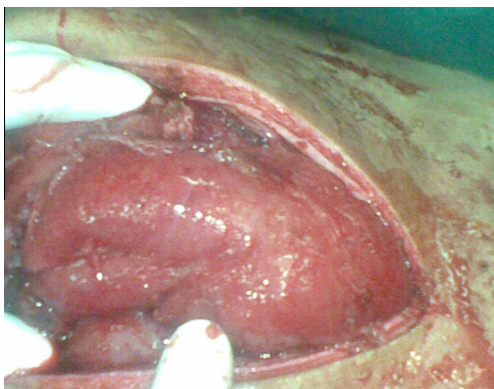
involuntary guarding and generalized tenderness, but there was no evidence of ascites or organomegaly. Decreased bowel sounds were heard.

Initial testing of the patient were as follows: WBC = 4900/mm<sup>3</sup>, Hb = 8.0 g/dl, HCT = 22.1%, Plt = 217,000/mm<sup>3</sup>, PT = 13 s, INR = 1.1 IU, BS = 80 mg/dl, BUN = 14 mg/dl, Cr = 1 mg/dl, Na = 120 meq/l, K = 4.9 meq/l. The chest radiograph on admission showed no pathologic findings. In ultrasound, liver was normal and intrahepatic bile ducts were not dilated. The diameter of the common bile duct (CBD) was equal to 10 mm and portal vein diameter was normal. Pancreatic head was larger than normal, but had a uniform enhancement. Bowel loops were not dilated and several lymph nodes were seen in Para aorta. The patient was admitted due to diagnosis of acute peritonitis and obstruction and underwent the first treatments which included fluid therapy, antibiotic therapy by ceftriaxone and metronidazole. Thereafter an emergency laparotomy was performed with the following findings:

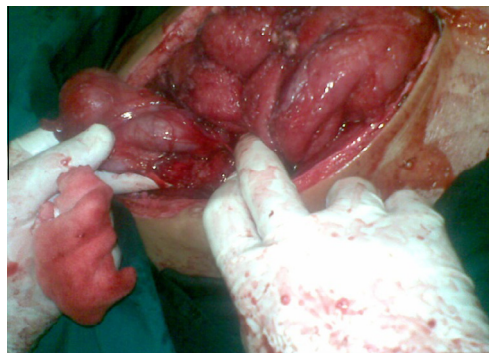
The patient underwent midline laparotomy that following entry into the abdomen, a small amount of free intra-peritoneal fluid was observed (Fig. 1). All loops of the small intestine, colon, omentum, liver, and spleen were fully adhered by a thick layer of adhesive bonds and diffuse seeding on the peritoneum was observed (Fig. 2). Due to the high clinical suspicion of peritoneal tuberculosis (TB), after removing adhesions and repairing the abdominal wall, the peritoneal, omental and hepatic biopsies were taken and submitted for TB smear.

Pathology reported the omental biopsies with evidence of necrotizing granulomatous inflammation and acid-fast bacilli (AFB), compatible with TB infection (Fig. 3), while biopsy of the liver reported no evidence of such. No signs of other organ involvement by TB infection were determined. The patient was treated according to a diagnosis of diffuse abdominal TB with standard quadruple: Pyrazinamide, Ethambutol, Rifampin, and Isoniazid by 25, 15, 10 and 5 mg/kg, respectively.

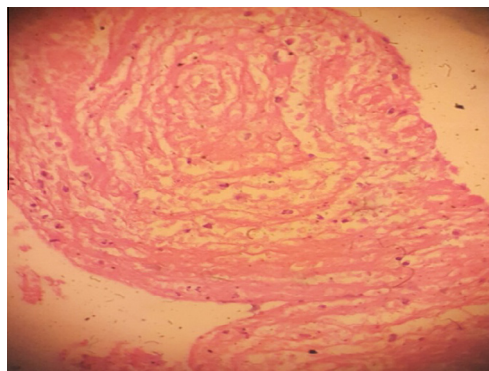
Subsequent laboratory test results are as follows: AST = 99 IU/l, ALT = 37 u/l, LDH = 564 IU/l, ALK-P = 1010, TIBC = 325, Fe = 65, ESR = 65 1 h, CRP = 57, RF = negative, Alb = 2.2 g/l, Total protein = 8.3 g/l, HIV Ab ELISA = +, HIV western blot: +, HCV Ab = -, HBs Ag = - HBs Ab = -, Abdominal fluid ADA = 99 u/l (NL ≤ 35).



**Figure 1 – Midline laparotomy with small amount of free intra-peritoneal fluid.**



**Figure 2 – Thick layer of adhesive bonds.**



**Figure 3 – Pathologic slide of peritoneal biopsy compatible with tuberculosis.**

After 6 months, the patient's general condition was evaluated; a good and excellent response to the anti-TB treatment was reported.

## Discussion

Abdominal TB, as the most common form of extra-pulmonary TB [1], involves the gastrointestinal tract, peritoneum, omentum, mesentery and its lymph nodes, as well as other abdominal solid organs such as the liver, spleen and pancreas.

Pleural effusion, peritonitis and meningitis occur in 75% of patients with disseminated TB. Cirrhosis, malignancy, pregnancy, childbirth, rheumatic diseases and treatment with immunosuppressive drugs are the predisposing factors [2].

Borhanmanesh et al. assessed TB peritonitis of 183 patients in a 40-year study. The most common symptoms were abdominal distension, weight loss, fever, abdominal pain and abdominal mass. Tuberculin test was positive in 85% of patients. They had a mean ESR of 67.7 and 23% had an ESR of more than 100. Most (81.9%) of them had exudative ascites with lymphocyte predominance of more than 90%, while 23.3% of patients had bloody ascites. Based on this study, for most patients, a definitive diagnosis was provided by laparoscopy or laparotomy [3].

In this study, 45 patients were wrongly diagnosed to have a tumor when several big lesions were observed during the operation involving the small intestine, peritoneum and lymph nodes. The tumor diagnosis was rejected, and the

diagnosis was confirmed by the observation of the histopathological lesions after surgery [3].

Islam et al. mentioned that nearly 80% of patients with TB infection in Africa are HIV-positive and that these patients are more likely to have extra-pulmonary TB [4]. Abdominal TB is in sixth place for extra-pulmonary TB in the range of 11–16% [5].

Laparoscopic and direct peritoneal biopsy, due to low morbidity and accurate diagnosis, are the preferred methods for the diagnosis of TB peritonitis [6].

Given the diverse morphology of the disease, no surgical procedures can be regarded as standard, thus methods of surgery are designed according to the findings during operation and the patient's condition.

This case underwent midline laparotomy due to diagnosis of acute peritonitis and obstruction based on fever and abdominal pain with symptoms of obstruction (nausea and vomiting and not having defecated from 12 h prior to admission). According to seeding and generalized abdominal adhesions, the presumptive diagnosis of TB peritonitis was made. The pathological findings confirmed it as well. Having unspecific symptoms and manifestations, the diagnosis of TB peritonitis should be considered in all patients with predisposing risk factors for pulmonary TB with fever, abdominal pain and anemia. HIV testing is also recommended in patients with suspected pulmonary TB.

In all cases of TB, appropriate treatment results in complete remission, and the prognosis is excellent [7].

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### Ethical issue

The authors were allowed by the patient to release his medical and disease-related information, keeping his identity anonymous.

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### Conflict of interest

None declared.

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