

I have made revisions to the original text based on the suggestions of the editorial department (scientific editor and company editor in chief).

1: It is advisable to include in the literature review modern methods of diagnosis and treatment of tuberculous peritonitis.

DISCUSSION

Patients with TBP are often comorbid with TB infections in other organs throughout the body. TBP is an insidious disease with subacute manifestations and is more difficult to diagnose if it is not suspected.

Clinical performance

Clinical history questioning revealed that most patients had a history of TB exposure and presented with symptoms of TB toxicity, including low afternoon fever, night sweats, malaise, poor appetite, and emaciation^[5]. Some studies have reported finding that the two most common symptoms of TBP patients presenting to the clinic are abdominal pain (31% to 94%) and fever (45% to 100%)^[3, 6-9]. The average duration of a patient's symptoms from onset to consultation extends from weeks to months^[3, 10]. Physical examination of patients with TBP usually reveals ascites (73%) and abdominal tenderness (47.7%), while a typical "doughy" abdomen is rare (5% to 13%)^[3, 9]. In addition to this, low-grade fever, weight loss, abdominal distension, elevated CA-125 levels, and abdominal masses are also common clinical manifestations in patients with TBP^[11]. The vast majority of reported cases were initially misdiagnosed as tumours or carcinomas, which were only confirmed through surgical treatment and postoperative pathology^[12-21]. Therefore, it is difficult to make a definitive diagnosis from clinical features alone, and targeted ancillary tests are important for the early diagnosis and treatment of TBP. In this paper, we report that the patient had only 2 clinical manifestations, abdominal pain and abdominal mass, and the patient was an elderly male, which is not consistent with the epidemiology of TBP, and the patient concealed a history of exposure to tuberculosis before surgery, which made it

difficult to diagnose the patient in this case.

Complementary check

1. Blood picture, erythrocyte sedimentation rate and tuberculin test:

Some patients have mild to moderate anaemia, mostly normocytic normochromic. Leukocyte counts are mostly normal and increased in caseous patients or in acute spread of abdominal tuberculosis foci. Erythrocyte sedimentation rate is increased in most patients and can be an indicator of active disease. Strongly positive tuberculin test helps in the diagnosis of tuberculosis infection.

2. Ascites examination:

Most of them are straw yellow exudate, a few are pale blood colour, occasionally see celiac, specific gravity is usually more than 1.018, protein content is more than 30g/L, mainly lymphocytes. However, sometimes due to hypovitaminosis or combined cirrhosis, the nature of ascites can be close to leakage fluid. If ascites glucose $<3.4\text{mmol/L}$ and pH <7.35 , it suggests bacterial infection; if ascites adenosine deaminase activity is increased, it may be tuberculous peritonitis. Concentration of ascites to find *Mycobacterium tuberculosis* or *Mycobacterium tuberculosis* cultivation positive rate are low, while the positive rate of ascites animal inoculation can reach more than 50%, but it takes a long time.

3. Imaging:

Ultrasound, CT, MRI shows thickened peritoneum, ascites, intra-abdominal mass and fistula. Scattered calcified shadows can be seen on abdominal sound radiographs as calcification of mesenteric lymph nodes. Gastrointestinal X-ray barium meal examination can find intestinal adhesions, intestinal tuberculosis, intestinal fistula, intestinal cavity outside the mass and other signs, the value of auxiliary diagnosis of this disease.

4. Laparoscopy:

The peritoneum, omentum, visceral surface can be seen scattered or aggregated grey-white nodules, turbid and rough plasma membrane. Biopsy

has the value of confirming the diagnosis. This examination is generally applicable to patients with free ascites, and is prohibited for those with extensive adhesions in the peritoneum.

With the popularity of laparoscopic techniques, laparoscopy has become the main diagnostic modality for TBP^[22-28]. Laparoscopy is used as one of the gold standards for the diagnosis of TBP. Typical microscopic manifestations include extensive intra-abdominal adhesions; thickening of the peritoneum and omentum with ascites; multiple scattered yellowish-white nodules; and calcified lymph nodes in the retroperitoneum and retro-omentum^[3, 29, 30]. Statistical analysis of data from 402 patients in 11 studies reported high sensitivity (93%) and specificity (98%) of laparoscopy in the diagnosis of TBP^[3]. Although laparoscopic surgery may lead to complications such as bowel perforation, bleeding, infection and even death, these complications are relatively rare, occurring in less than 3% of cases^[5]. Although laparoscopy has a high diagnostic value in determining TBP, it allows clear visualisation of the shape and volume of the abdominal cavity and obtaining tissues such as peritoneum or nodules by biopsy to establish the diagnosis. However, in the diagnosis of TBP, laparoscopy is mainly indicated in patients with unknown etiology but high suspicion of TBP. In addition, performing laparoscopy requires consideration of the patient's financial status and hospital surgical conditions. Therefore, a combination of other non-invasive examination methods should be considered for diagnosis before laparoscopy is performed.

Treatment

Early diagnosis and treatment of TBP is extremely important to improve the patient's condition, and some studies have noted that delayed anti-tuberculosis treatment is associated with high mortality^[4]. The current TBP treatment principle follows the extrapulmonary tuberculosis treatment programme, with systemic anti-tuberculosis drug therapy as the mainstay, supplemented by nutritional support and abdominal local therapy.

1. Treatment principle: adhere to early, combined, full standardised

anti-tuberculosis drug treatment and strengthen systemic supportive therapy, in order to achieve complete cure, avoid recurrence and prevent complications.

2. Strengthening supportive therapy: bed rest, high protein, high calorie, high vitamin and easy-to-digest diet, daily supplementation of fresh fruits and fresh milk, intravenous infusion when needed, regular injection of albumin, etc.

3. Anti-tuberculosis chemical drugs: Generally, 3 or 4 kinds of drugs are used for intensive treatment. Isoniazid 0.3-0.4g, daily morning dose; rifampicin 0.45g, once a day orally; ethambutol 0.75g once a day orally. If necessary, another streptomycin 0.75g once daily intramuscularly or pyrazinamide 0.25-0.5g three times daily can be added, for a total of four drugs combined treatment for 2 months, and then continue treatment with isoniazid and rifampicin for at least 7 months. For those with hematogenously disseminated lesions or significant tuberculosis toxemia, short-term treatment with prednisone can be added along with anti-tuberculosis drugs, 30-40mg per day, orally in divided doses.

4. Discharge of ascites: for those who have obvious ascites in exudative type, the ascites can be discharged once a week in appropriate amount, and isoniazid 100mg and streptomycin 0.25g can be injected intraperitoneally.

5. Surgical treatment: Surgical treatment is limited to complete intestinal obstruction, intestinal fistula or complication of intestinal perforation^[31, 32]. When the disease is difficult to diagnose and cannot be differentiated from intra-abdominal tumours or certain causes of acute abdomen, a caesarean section may be considered.