

Presenting Experience of Managing Abdominal Tuberculosis at a Tertiary Care Hospital In India

Abhijit Mandal, Sibes Kumar Das¹, Tapan D Bairagya²

Department of Respiratory Medicine, Bankura Sammiloni Medical College, ¹Medical College, Kolkata, ²North Bengal Medical College, Darjeeling, India

ABSTRACT

Background: Abdominal tuberculosis remains the great mimic despite years of experience and awareness. Reliable epidemiological data on abdominal tuberculosis are lacking in India. **Objectives:** To define the most suggestive clinical features of abdominal tuberculosis, to evaluate the usefulness of the normally available investigations, and the response of anti-tuberculous drugs. **Study Design:** Retrospective study. **Materials and Methods:** Out of 110 patients attending our hospital between July 2000 and June 2002, with clinical suspicion of abdominal tuberculosis, 46 patients had confirmed abdominal tuberculosis. Their clinico-radiological and cyto / histopathological profiles, side effects of anti-tuberculous drugs, and the outcome of the treatment were analyzed. **Results:** Weight loss, abdominal pain, and bowel disturbances were the most common symptoms. Anemia and under-nutrition, abdominal tenderness, ascites, and hepato / splenomegaly were the most common findings. Chest radiography showed active or healed tuberculous focus in 16. Ultrasonography revealed abdominal lymphadenopathy, ascites, and mass lesions in 26, 12, and four patients, respectively. Barium examination showed abnormality in eight patients out of 18, among whom it was performed. An ascitic fluid study done in 12 patients showed high adenosine deaminase in all, and positive acid fast bacilli in one. Laparoscopic peritoneal biopsy was done in 18 patients, and 13 showed tuberculous granuloma. Treatment success was achieved in 38 patients with anti-tuberculous drugs. Most patients tolerated the anti-tuberculous drugs well. **Conclusion:** With good clinical examination and appropriate investigations definitive diagnosis of abdominal tuberculosis can be reached in a significant number of patients. Strongly suggestive clinical and laboratory data are also indications for anti-tuberculous therapy in an endemic country like India. Anti-tuberculous drugs are well tolerated and highly effective.

Key words: Abdominal tuberculosis, Clinical features, Diagnosis, Outcome

INTRODUCTION

Abdominal tuberculosis (TB) includes TB of the gastrointestinal tract, peritoneum, omentum, mesentery, lymph nodes, and other solid intra-abdominal organs like liver, spleen, and pancreas.^[1] It constitutes about 1 – 3% of all cases of TB and about 12% of extra-pulmonary TB.^[2,3] Diagnosis of abdominal TB is usually very difficult, due to nonspecific symptoms and signs. Moreover, it can mimic many abdominal disorders like malignancy, Crohn's disease, and irritable bowel syndrome.^[4,5] Diagnostic confirmation often requires histopathological examination of the surgical specimen. Our study aims to evaluate the varied presentation of abdominal TB, usefulness of different

diagnostic tests, and outcome of these patients under treatment with anti-tuberculous drugs (ATD).

MATERIALS AND METHODS

Out of 110 patients attending the Chest and Medicine Outpatient Department (OPD) of a tertiary care hospital between July 2000 and June 2002, with symptoms suggestive of abdominal TB, 46 patients were found to have abdominal TB. We evaluated them retrospectively by reviewing their clinical history and physical findings, diagnostic procedures, treatment regimens, side effects, and the outcome of treatment with ATD. The clinical data including age, sex, symptoms, past history of tuberculosis and co-morbid illness, and physical findings were collected and analyzed. Routine blood examination, Mantoux test (with 5TU), and chest radiography were done in all the patients. Sputum for acid fast bacilli (AFB) was conducted in the patients presenting with cough. Ultrasonography

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Address for correspondence:

Dr. Sibes Kumar Das, E-mail: sibesdas67@gmail.com

(USG), barium meal follow-through examination, ascitic fluid study, fine needle aspiration cytology (FNAC), and laparoscopic peritoneal biopsy were done in selected patients.

Diagnosis of abdominal TB was confirmed if any of the following criteria were met: (i) AFB present in ascitic fluid; (ii) USG-guided FNAC of the abdominal lymph node / mass showing typical caseous granuloma and / or AFB; (iii) Laparoscopic peritoneal biopsy showing tuberculous granuloma; (iv) Highly suggestive indirect evidence of abdominal TB and favorable therapeutic response to ATD.

The patients were put on Cat-I or Cat-II ATD regimen on the basis of the past history of ATD intake as per the WHO guidelines. The adverse effects of chemotherapy and outcome of the patients were also analyzed.

RESULTS

The age range of the patients with abdominal TB was 18 – 64 years (mean age 35 years), but most were in the third and fourth decade (40 and 24%, respectively). Females outnumbered males with a male: female ratio of 1 : 1.7. The time interval between onset of symptoms and specific diagnosis were less than two months in 15 (33%), between two and six months in 25 (55%), and more than six months in six (12%). Among the common presenting symptoms, abdominal pain, weight loss, and bowel disturbances were found in 42 (92%), 38 (83%), and 34 (74%) patients, respectively. Table 1 shows the common presenting symptoms of abdominal TB.

Past history of pulmonary TB was present in four male and two female patients, while another female patient had a history of tuberculous pleural effusion.

On general examination, anemia was detected in 36 patients (79%), malnutrition in 32 (70%), and cervical lymphadenopathy in two (4%) patients. The most common abdominal findings included, abdominal tenderness in 36 patients (79%), hepato / splenomegaly in 12 patients (26%), and ascites in 10 (22%) patients. Table 2 shows the abdominal findings of the patients.

Laboratory investigation revealed anemia (Hb less than 11 gm%) in 16, leucocytosis (WBC > 11,000 / cmm) in two, and positive Mantoux test in 16 patients. The HIV serological test was positive in eight patients, while two patients had diabetes mellitus. Two of the HIV patients had *concomitant* cervical lymphadenopathy, one had miliary mottling on a chest X-ray, and one had sputum positive

Table 1: Common presenting symptoms of abdominal TB (n = 46)

| Symptoms | Number of patients (%) |
|--------------------------------------|------------------------|
| Fever | 8 (18) |
| Weight loss | 38 (83) |
| Abdominal pain | 42 (92) |
| Nausea / vomiting | 10 (22) |
| Bowel disturbances | 34 (75) |
| Diarrhea | 4 (9) |
| Constipation | 16 (35) |
| Alternate diarrhea with constipation | 14 (31) |
| Abdominal distention | 12 (26) |
| Borborygmi | 10 (22) |
| Postprandial fullness | 12 (26) |

Table 2: Presenting abdominal signs (n = 46)

| Signs | Numbers (%) |
|---|-------------|
| Abdominal tenderness | 36 (79) |
| Ascites | 10 (22) |
| Hepatomegaly | 6 (13) |
| Splenomegaly | 6 (13) |
| Abdominal lump | 4 (9) |
| Doughy abdomen | 8 (18) |
| Abdominal distention (other than ascites) | 8 (18) |
| Increased peristalsis | 8 (18) |

pulmonary TB. Diabetic patients did not have TB at extra-abdominal sites.

Chest radiograph was abnormal in 16 patients, eight (18%) had healed tuberculous lesion (Fibrosis — six, pleural thickening — one, and calcified hilar lymph node — one) and eight patients (18%) had active tuberculous lesions (New infiltration — five, pleural effusion — two, miliary mottling — one). Sputum was positive for AFB in three patients. USG of the abdomen, done in 40 patients, showed ascites in 12, abdominal lymph nodes in 26, mass lesions in four, hepatomegaly in six, and splenomegaly in seven patients. Barium meal follow-through examination was done in 18 patients, among whom eight patients showed abnormality (deformed ileocecal valve — three, contracted cecum — three, ulceration of terminal ileum — two). USG guided FNAC of the abdominal lymph nodes was done in 23 patients among whom 11 showed typical tuberculous granuloma. Ascitic fluid study was done in 12 patients (ten unguided and two under USG guidance). Low serum ascitic albumin gradient (less than 1.1 g / dL) and lymphocytic leucocytosis with high ADA (more than 32 units / L) were found in all; one patient also showed AFB Positivity. Laparoscopy done in 18 patients showed macroscopic tubercle in four patients. Laparoscopic peritoneal biopsy was done in 18 patients, 12 showed TB granuloma, one showed TB granuloma with AFB, and five showed nonspecific inflammation.

Table 3: Mode of diagnosis (n = 46)

| | |
|-------------------------------------|----|
| Ascitic fluid AFB | 1 |
| USG-guided FNAC | 13 |
| Peritoneal biopsy | 13 |
| Highly suggestive indirect evidence | 19 |
| Ascitic fluid | 11 |
| Sputum-positive pulmonary TB | 03 |
| Barium meal | 04 |
| Cervical lymph node FNAC | 01 |

Mode of final diagnosis is shown in Table 3.

The World Health Organization's Cat-I ATDs were prescribed in 39 and Cat-II in seven patients. The outcome of treatment was: Successful treatment in 38 (cured — two, treatment completed — 36), failure — one, defaulted — five, died — two. Both the patients who died during treatment had HIV / AIDS. Almost all of the patients tolerated ATD very well. Three patients had upper gastrointestinal upset, one had joint pain, and four had paresthesia of the limbs. Symptomatic treatment along with continuation of ATD was sufficient for them. Only two patients had drug-induced hepatitis, which required modification of the regimen.

DISCUSSION

Most of our patients were females in the third and fourth decades, a fact which is in accordance with the other studies.^[6-9] However, no sex predilection^[10-12] or preponderance of the elderly age group^[12] have been seen in the few studies.

Clinical presentation of abdominal TB is generally non-specific,^[1,13] which may be responsible for the delay in diagnosis, a fact confirmed in our study as well as other studies.^[4,13-15] Among the symptoms, abdominal pain, bowel disturbances, and weight loss were most common. Fever was not a common symptom of abdominal TB. Abdominal tenderness, distention, ascites, and organomegaly were the most common signs. These findings were consistent with several other studies.^[6,7,12,14,16] Anemia was very common (35%) in our patients. A significant number of patients had a negative Mantoux test, which was probably related to under-nutrition. Among the co-morbidities, eight patients had HIV / AIDS and two had diabetes. Four of the HIV patients had concomitant TB in other sites like the lungs and lymph nodes. An active TB lesion was seen in eight patients (18%), while healed TB lesions on a chest X-ray were seen in another eight patients. Sputum smear microscopy for AFB was positive in three patients. Associated pulmonary TB was found to be more common in developing countries when compared with the western studies.^[15,17-19]

Confirmed diagnosis was established from different investigations in 55% of the cases. The smear for AFB in ascitic fluid had a low diagnostic yield, giving a positive result in only one patient. The ascitic fluid revealed AFB in less than 3% of the cases in most of the studies.^[20-22] The USG-guided FNAC of the abdominal lump / lymph node had a very good diagnostic yield, which was similar to other studies.^[23,24] Laparoscopy was generally considered the gold standard for the diagnosis of peritoneal TB, because of its safety and high diagnostic yield.^[20] Only this could give a diagnosis in 80 – 95% of the cases.^[25] In our study, laparoscopic peritoneal biopsy gave a definite diagnosis in 72% of the patients among whom it was performed. Colonoscopy was not considered as a diagnostic tool in patients with abnormal barium meal examination ($n=8$) in our study. There was evidence of tuberculosis in a laparoscopic peritoneal biopsy ($n=2$), in FNAC of the abdominal lymph node ($n=2$), and in the therapeutic response with AT drugs ($n=4$).

Direct confirmatory diagnosis was not achieved in 19 patients. However, all of them had indirect evidence of abdominal TB (suggestive ascitic fluid study or confirmed TB elsewhere), and good therapeutic response with ATD was considered to be confirmatory. With this approach, all the patients were accurately and quickly diagnosed and treated, without resorting to expensive investigations like CT scan of the abdomen, polymerase chain reaction, or colonoscopic biopsy.

Treatment of abdominal TB is not different from that of extrapulmonary TB at other sites. Eighty-three percent of our patients were successfully treated with chemotherapy, none requiring surgical intervention for a therapeutic purpose. Low requirement of surgical intervention has also been emphasized in different studies.^[17,18] Our patients tolerated ATD very well with very few adverse reactions noticed. The two patients who died during therapy had an HIV-TB co-infection.

CONCLUSION

Extreme vigilance in case of patients with abdominal symptoms is the key to an early and successful diagnosis of abdominal TB. In a significant number of patients, definite diagnosis can be reached with easily available, inexpensive, and safe investigations. In a high endemic country like India, patients with strongly suggestive laboratory data are also candidates for ATD therapy. ATDs are well-tolerated and a successful outcome is reached in most patients.

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