

## Case Report

# Abdominal Tuberculosis in a Five Years Old Boy

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## Abstract

We diagnosed a 5 years old boy as a case of abdominal tuberculosis which is a rare presentation for tuberculosis in children. We are sharing this case review aiming to early diagnosis and management of those cases to decrease morbidity and mortality. Our patient was followed up over 12 months till completing his treatment and full recovery.

## Keywords

- Tuberculosis
- Abdominal
- Ascites
- Lymph nodes

## ABBREVIATIONS

TB: Tuberculosis; CRP: C-Reactive Protein; ESR: Erythrocyte Sedimentation Rate; LFT: Liver Function Tests; CT: Computed Tomography; BCG: Bacillus Calmette-Guerin

## INTRODUCTION

Tuberculosis (TB) is a chronic granulomatous disease produced by *Mycobacterium Tuberculosis*. It has a high incidence and mortality in different parts of the world. The estimated prevalence of tuberculosis is 10.4 million of cases worldwide, with 1.8 million of annual deaths according to WHO on 2016. Abdominal TB is a rare manifestation of TB in children. It is characterized by long standing abdominal symptoms that are usually confused with many conditions, including inflammatory bowel disease, malignancy, and other infectious diseases. It is thought to develop by hematogenous spread from a distant primary focus (usually the lung), or via lymphatic spread from tuberculosis lymph nodes or solid organs. The diagnosis of abdominal TB is usually delayed due to lack of specific symptoms and pathognomonic findings.

## CASE PRESENTATION

A five years old child was admitted suffering from abdominal distention for a month and fever for two weeks. He had anorexia, weight loss and drowsiness. He did not receive BCG vaccine and there was a history of contact with his aunt on treatment for active TB.

On examination he was sick looking, lethargic with digital clubbing. Chest examination showed diminished air entry on the right side with bilateral inspiratory crepitations. Abdomen was distended with hepatosplenomegaly and moderate ascites.

Blood chemistry and urinary analyses were normal. ESR was 112 mm/hr and CRP 62. Blood film showed thrombocytosis with no blast cells. Peritoneal fluid was negative for Culture and acid fast bacilli. Immunoglobulin profile was normal. Tuberculin skin test was done using the purified protein derivative (PPD) and

was 18 mm (significantly positive) and interferon-gamma release assay was also positive. Chest X-ray showed right lower lobar consolidation with enlarged mediastinal lymph nodes. Computed tomography (CT) of the chest and abdomen showed mediastinal caseating lymph nodes, right sided pleural effusion with severe ascites, hepatosplenomegaly and highly suspected peritonitis (Figure 1,2). Our patient was started on anti tuberculosis treatment showing a good response on follow up on clinical, laboratory and radiological assessment.

## DISCUSSION

Abdominal TB usually occurs in four forms: tuberculous lymphadenopathy, peritoneal tuberculosis, gastrointestinal tuberculosis and visceral tuberculosis of solid organs [1]. We present the case of a 5 years old boy with multisystemic tuberculosis including abdominal organs.

The prevalence of abdominal TB is reported to be almost same over the last 16 years and occurs more in the BCG non-vaccinated children [2]. Disseminated mycobacterial infection after bacillus Calmette-Guerin vaccination is a very rare disorder, and often occurs in patients with immunologic deficiency [3].

Fever, abdominal pain/discomfort and weight loss were the most common symptoms found. In some reports, abdominal distention/mass, and ascites were the most common presenting symptoms, while fever was relatively uncommon. These symptoms usually persisted for weeks to months before the patients sought medical help, delaying the diagnosis of abdominal TB [4].

A diagnosis of TB (pulmonary or extrapulmonary) in a child is often based on the presence of the classic triad: (1) recent close contact with an infectious case, (2) a positive tuberculin skin test (TST) or interferon-gamma release assay (IGRA), and (3) suggestive findings on chest radiograph or physical examination [5] (Figure 3).

It is really a challenge to clinicians to diagnose a TB case.



Figure 1 Chest X-ray on admission.

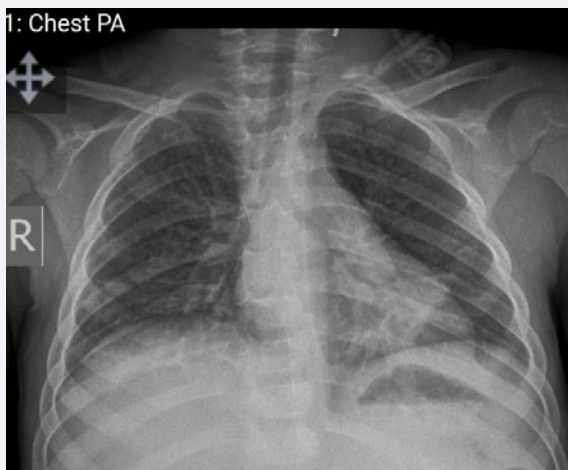


Figure 2 Chest X-ray one month after treatment.



Figure 3 Tuberculin test of the child.

The clinical manifestations are nonspecific, last for weeks to months, and have varied presentations that may mimic a variety of other abdominal disorders [6]. Unless a high index of suspicion is maintained, the diagnosis can easily be missed or delayed, resulting in increased morbidity and mortality [7].

Abdominal imaging studies, including ultrasound and CT, have important roles in the diagnosis of abdominal TB [8]. Most of the cases in previous reports that received abdominal imaging had abnormal findings and the common findings included high-density ascites, intra-abdominal/mesenteric lymphadenopathy, omental/mesenteric/bowel wall thickening, solid organ involvement, and an abdominal/inflammatory mass seen in our study [9]. In a study, thickness and fine septation were found to be the most common findings [10]. However, these findings are generally nonspecific.

Patients with abdominal tuberculosis may be treated with chemotherapy if they have had the BCG vaccination and if other findings are obviously targeting the disease [11].

Chemotherapy is defined as multiple antituberculosis drugs for at least one year of therapy. In a study, isoniazid (10 mg/kg P.O., for one year), rifampicin (20 mg/kg P.O., for one year), pyrazinamide (30 mg/kg P.O., for the first 2 months), and streptomycin (20 mg/kg I.M., for the first month) was used for treatment [12]. In another study, ethambutol (20 mg/kg per day) was also used. The recommended antituberculosis treatment of extrapulmonary TB in children includes the use of a three-drug regimen (isoniazide, rifampin, and pyrazinamide) [8]. Also streptomycin can be used in this combination [12]. Some clinicians administer corticosteroids routinely for the first 2 or 3 months against fibrosis [8].

The response to therapeutic anti-TB medication may indirectly confirm the diagnosis [13]. There is still a debate over the duration of treatment. Treatment has been reported to be successful when administered for 12-18 months but other authors have reported that a duration of 6 months is sufficient [13]. Our patient received antituberculous therapy for 1 year with favorable outcome.

## CONCLUSION

Abdominal TB should be suspected in any child presented with fever, weight loss, abdominal pain, and abnormal chest radiography. History of exposure to TB plus CT findings of abdominal TB supports the diagnosis.

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