

Abdominal Tuberculosis in Children- A Case Report

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ABSTRACT:

Abdominal tuberculosis (TB) is a rare manifestation of TB and constitutes approximately 12% of extrapulmonary TB cases. Abdominal TB prevalence is relatively high in children and immunocompromised patients. Diagnosis of abdominal TB is often delayed in developing countries due to the lack of specific symptoms and proper diagnostic tests.

Keywords: Abdominal tuberculosis, Extrapulmonary tuberculosis.

INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by *Mycobacterium tuberculosis*. According to the World Health Organization, as of 2020, the most significant number of new TB cases occurred in the South-East Asian Region, with 43% of all new cases, followed by Africa, with 25%, and the Western Pacific with 18%. The World Health Organization estimates over 46,000 cases of TB in Ghana annually. However, less than a third of these estimated cases are officially reported each year. Tuberculosis commonly affects the lungs but can also affect other parts of the body, i.e., extrapulmonary TB. Pulmonary TB is often characterized by chronic cough, hemoptysis, fever, weight loss, and night sweat. On the other hand, abdominal TB in children poses a significant diagnostic challenge due to the nonspecific nature of its clinical features, and therefore diagnosis is often delayed.

Abdominal TB is classified according to its location into; peritoneal, intestinal, lymph node, and visceral. Most children present with peritoneal and lymph node abdominal TB. However, it is challenging to investigate children for the intestinal disease since colonoscopies are not recommended in young children.

CASE REPORT

A 12-year-old African patient was admitted to a tertiary care center with a complaint of constipation for two weeks. Past medical history of Pulmonary TB was diagnosed eight months ago earlier, and treatment was initiated with isoniazid, rifampin, pyrazinamide, and ethambutol. The patient's family abandoned the TB treatment and switched to herbal medications, which improved the patient's condition. The patient started complaining of abdominal pain, persistent cough, night sweats, and shortness of breath five months later. There was no relevant family history. On clinical examination, there was malaise, fever, tensed and distended abdomen, massive ascites, anicteric, lower and upper extremities wasting, orthopnea, and a palpable mass in the left lower quadrant.

Laboratory testing revealed:

Anemia (Hb 9.8g/dl),
Potassium 5.13mmol/l,
Sodium 137mmol/l,
Urea 4.15umol/l,
Creatinine 63.2umol/l,
Chloride 104mmol/l
Leucocyte $5.08 \times 10^9/L$
Liver enzymes within normal range.
Elevated C-reactive protein levels.

Abdominal ultrasound performed on the second day of admission showed the presence of Intra-abdominal fluid, thickening of the peritoneum, and some enlarged abdominal lymph nodes. No hepatosplenomegaly was detected.

Based on the clinical presentation, ultrasound findings, and recent history of tuberculosis, diagnosis of abdominal TB was made, and the patient was started on isoniazid, rifampin, pyrazinamide, and ethambutol. Clinical improvement was seen in the course of the hospital stay.



Figure 1: Mesenteric tuberculosis. Massive involvement of mesenteric lymph nodes with extensive caseation.

Discussion

Tuberculosis (TB) is an old disease that had affected humans long before Dr. Robert Koch discovered the bacillus responsible in 1882, who subsequently named it *Mycobacterium tuberculosis*. About a quarter of the world's population is infected with *M. tuberculosis*, equivalent to about 2 billion people, and a total of 1.5 million people died from TB in the year 2020. The probability of developing TB disease is much higher among immunocompromised people, people with poor living conditions, and people from developing countries. In Ghana, an estimated 44,000 people developed TB in 2020; **6,600** were Children. Without treatment, the mortality rate from TB is high.

TB typically affects the lungs (pulmonary TB) but can affect other sites, including the abdomen. Abdominal TB is an uncommon presentation of TB, especially in immunocompetent children. The most common forms in children are adhesive peritonitis and lymph node disease.

The presentation of abdominal TB is nonspecific. Some children may report symptoms that mimic an acute abdomen. Hence, it is important to suspect children with unexplained abdominal

complaints and constitutional symptoms in TB endemic areas. Timely diagnosis and treatment are vital in preventing complications and mortality. The onset of symptoms can be highly variable, with the majority presenting with a chronic or acute-on-chronic course.

Common complications of abdominal TB include small bowel obstruction, which can be due to the formation of intrinsic strictures from the encapsulation of intestinal loops with thickened peritoneum or the extrinsic compression of enlarged lymph nodes. The ulcerated intestinal mucosa can lead to fistula formation, being entero-enteric, entero-cutaneous, and entero-tracheal fistulas. Abscess formation and perforation are also common complications.

CONCLUSION

Diagnosis of abdominal TB in children is very challenging due to the nonspecific nature of its presentation. Also, the lack of medical technologies and diagnostic tools in developing countries delays the diagnosis. In areas with a high prevalence of tuberculosis, treatment may be initiated based on strong clinical diagnosis and past medical history.

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