CASE REPORT

Case Report: Abdominal tuberculosis presenting as abdominal mass [version 1; peer review: awaiting peer review]

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First published: 21 Jul 2023, 12:867
https://doi.org/10.12688/f1000research.138592.1
Latest published: 21 Jul 2023, 12:867
https://doi.org/10.12688/f1000research.138592.1

Abstract
Among the most prevalent types of extrapulmonary TB is abdominal (TB). The diagnosis of abdominal TB is difficult. This disorder is thought to be a good imitator of other abdominal illnesses. To reduce morbidity and mortality, early diagnosis, antitubercular medication start-up, and surgical treatment are crucial. Only seldom is surgery necessary because most patients benefit from antitubercular therapy. Imaging is crucial to the diagnosis and care of these individuals. The following patient, aged about 53 years old female, complained of stomach pain, vomiting, loss of appetite, and weight loss when she first arrived. A swollen ileocaecal junction with a cystic lesion was discovered on an ultrasound of the whole abdomen. The patient received antitubercular medication for six months, and she responded favorably to it.

Keywords
Abdominal Mass, Extrapulmonary TB, Mantoux Test, Ultrasoundography, Anti Tubercular Therapy

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Introduction
Among the most common locations for extrapulmonary tuberculosis is the digestive tract.\textsuperscript{1,2} About one-eighth of all cases of TB are extrapulmonary,\textsuperscript{3,4} and abdominal TB accounts for 11 to 16 percent of cases.\textsuperscript{5,6} Up to 50\% of HIV-positive people may develop extrapulmonary TB.\textsuperscript{1,6} The sixth most prevalent extrapulmonary site for tuberculosis is the gastrointestinal tract, followed by lymphatic, genitourinary, bone and joint, miliary and meningeal.\textsuperscript{7} The abdomen is either the primary site of infection or the site of secondary infection when TB spreads to it through ingested sputum, hematogenous transmission from a nearby infected organ, consumption of unpasteurized milk, or revival of a previously acquired dormant focus.\textsuperscript{2,5}

Patient information
A 53-year-old female patient who had been experiencing right lower abdomen pain, loss of appetite, vomiting, and weight loss for the previous two months was our patient. Abdominal pain was dull, aching, and non-radiating, located in the right lower abdomen, and it was associated with vomiting, which was projectile and non-bilious. She belonged to low socioeconomic status and had no prior antitubercular therapy (ATT). She had no personal history of diabetes, hypertension, and seizure disorder. No significant family history was present. On examination, she had a blood pressure of about 126/84 mm Hg, a heart rate of about 80/min, and a temperature of about 98.9°F.

Clinical findings
On abdominal examination, a non-tender palpable swelling of 5.0×5.0 cm was present in the right groin. Hematological investigations showed hemoglobin of 9.7 gm\%, total leukocyte counts of 13100/mm\(^3\) with a differential count of polymorphs of 80\%, and lymphocytes of 18\%. The erythrocyte sedimentation rate was 58mm in 1st hour. Mantoux test showed an induration of 22 millimeters. Left renal calculus was found on the X-ray abdomen (Figure 1). Ultrasound whole abdomen of the patient revealed 88×51×42 mm thickened bowel loops at the ileocaecal junction. Its wall thickness was 19 mm, with evidence of a 40×23 mm cystic lesion.

Timeline
The patient visited hospital in the month of January 2023 and was diagnosed with Tuberculosis of abdomen. After the diagnostic investigations done the patient was on medications of antitubercular drugs for six months.

Diagnostic assessment
The Diagnostic Assessment done for the patient includes the ultrasound, haematological assessment, general examination, clinical examination, sonography this all the following assessment done for the patient. The patient shows the normal temperature, normal blood pressure, slight increase in heart rate and the radiological finding shows the presence of the mass on the left side of abdomen the haemolytic assessment shoes the normal findings.

![Figure 1. Shows: an X-ray of the Abdomen.](image)
**Therapeutic Intervention**

Based on these radiological findings, antitubercular treatment with rifampicin, ethambutol, isoniazid, and pyrazinamide was started. Patient symptoms gradually improved, and therapy was continued for two months. After that repeat Ultrasound abdomen revealed a decrease in mass size to 56×43×32 mm, and bowel wall thickness was reduced with a cyst of 25×16 mm. The patient continued with rifampicin, ethambutol, and isoniazid for another four months. Her ultrasonography after six months of treatment suggested a significantly reduced mass of 1.5 × 1 cm size. Written informed consent was taken from the subject prior to the publication of case details and accompanying images.

**Follow up and outcomes**

The patient was under the supervision of the doctor for about six months. The doctor treated the patient with various antitubercular medication for six months, the dosage of the antitubercular drugs decreases as the treatment is given with respective of time.

**Discussion**

*Mycobacterium tuberculosis* infection of the peritoneum and abdominal organs is known as abdominal TB. The signs of abdominal TB are vague and can resemble colon cancer, Crohn’s disease, or lung cancer. They can also resemble Crohn’s disease or pulmonary TB. The symptoms of abdominal tuberculosis include abdominal pain (80.4% of cases) and weight loss (74.65%), appetite loss (62.67%), fever (40.5%), loose stools (16.44%), and abnormal bowel habits (25.35%). No respiratory issues or prior antitubercular therapy histories were present in our patient. Age, underlying illness, bacterial genotype, and immunological state are all connected to the pathogenesis of abdominal TB. Some of the postulated mechanisms by which the tubercle bacilli reach include direct spread from nearby organs, hematogenous spread from the primary lung focus in childhood with later reactivation, ingestion of bacilli in sputum from adjacent organs, direct spread from adjacent organs, ingestion of bacilli in sputum from infected nodes, and through lymph channels from infected node. Because of the ambiguous and nonspecific clinical signs and the poor yield of mycobacterium cultures or smears, diagnosing abdominal tuberculosis is challenging. The ileocaecal region is the most frequently affected area, maybe due to the heightened physiological stasis, accelerated rate of fluid and electrolyte absorption, low digestive activity, and profusion of lymphoid tissue in this location. The implicated bowel’s gross morphological appearance was initially divided into ulcerative, ulcerohyperplastic, and hyperplastic variants by Hoon et al. Imaging tests like the Mantoux test and barium X-rays, CT scans, and ultrasounds only provide supportive information. The diagnosis can occasionally be due to the patient’s response to antitubercular medication therapy trials. In our patient, the diagnosis was made on clinical and radiological grounds. Most importantly patient didn’t require surgical intervention and improved on antitubercular therapy. Colonic TB can be treated with conservative care and anti-TB drugs, excluding surgical emergencies like perforation or obstruction. It is important to closely monitor the patient’s reaction to medical care because a failure of the symptoms to go away and the lesions to shrink could indicate more serious underlying pathology, such as cancer. A high index of suspicion for abdominal TB should exist in individuals with vague symptoms and colonic thickening on imaging.

As a leading global killer and source of pain, tuberculosis (TB) significantly lowers patients’ health-related quality of life (HRQoL). Patient awareness of their physical and mental wellbeing is indicated by HRQoL. As a result, it is crucial to understanding and calculating the precise effects of the disease state. The public health system in India continues to be seriously threatened by tuberculosis (TB). Adverse drug reactions (ADR) continue to be a problem in treatment adherence and completion despite the National Tuberculosis Elimination Programme (NTEP) offering a comprehensive variety of treatments from early diagnosis through complete treatment to minimise morbidity and death from TB. Skin with many lesions caused by extrapulmonary tuberculosis (ETB) is a rare manifestation of mycobacterial infection. It is uncommon to describe cutaneous tuberculosis (TB) with numerous lesions and Poncet’s illness (tuberculous rheumatism). There is still debate over how well interferon-gamma release assays (IGRA) and pure protein derivative tuberculin skin tests (TST) predict incident active tuberculosis (TB). The second-leading cause of infectious disease-related death worldwide is tuberculosis (TB), and delays in the TB care cascade are one of the main obstacles to meeting the objectives of TB control programmes.

**Patient Perspective**

The patient symptoms were relived after taking medications and the patient was satisfied with the treatment received.

**Consent**

Written informed consent for publication of their clinical details and/or clinical images was obtained from the patient/parent/guardian/relative of the patient.
Reporting guidelines

Data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).

Data availability
All data underlying the results are available as part of the article and no additional source data are required.

References

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