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# Atypical Presentation of Extra-Pulmonary Tuberculosis—A Case Report, Diagnostic Challenges and Importance of Frequent and Repeated Testing

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## INTRODUCTION

Tuberculosis (TB), caused by Mycobacterium tuberculosis, remains one of the leading infectious causes of morbidity and mortality worldwide as well as in India. India bears the highest global burden of tuberculosis. Although newer molecular tests has significantly strengthened case detection, diagnosis remains uncertain in a specific group of cases especially in extra pulmonary cases. Early diagnosis and prompt initiation of anti-tubercular therapy are essential not only for improving patient outcomes but also for interrupting disease transmission within the community.

Pulmonary tuberculosis typically presents with chronic cough, fever, weight loss, night sweats, and hemoptysis. But presentation of extra pulmonary tuberculosis can be atypical, more so in case of abdominal tuberculosis.

Severe intra-abdominal infections can have a prolonged and complicated clinical course, particularly when accompanied by respiratory failure, persistent intra-abdominal collections, and recurrent infections. Such patients may require prolonged intensive-care support, mechanical ventilation, repeated bronchoscopy, percutaneous drainage, and surgical intervention. The presence of persistent or recurrent wound infection despite conventional management should prompt consideration of less common infectious etiologies, including tuberculosis.

Despite the widespread availability of rapid molecular assays such as Xpert MTB/RIF Ultra, establishing the diagnosis in atypical cases remains difficult. Low bacillary burden, false-negative microbiological tests, difficulties in obtaining representative tissue specimens, and overlapping radiological or histopathological findings frequently necessitate repeated sampling and a multidisciplinary diagnostic approach. Delayed diagnosis not only increases patient morbidity and the risk of irreversible organ damage but also prolongs infectivity and places an additional burden on healthcare resources.

Abdominal tuberculosis may involve the peritoneum, abdominal wall, surgical wounds, and other sites. Diagnosis can be challenging because clinical manifestations may overlap with bacterial or fungal infections, and conventional histopathology may be inconclusive. Molecular testing such as GeneXpert MTB can provide important diagnostic information, particularly when specimens are obtained from a clinically involved site.

We describe a complex clinical course involving abdominal pain, vomiting, ascites and suspected peritonitis, respiratory failure requiring prolonged ventilatory support, recurrent intra-abdominal collections requiring drainage and laparoscopic lavage, and subsequent detection of Mycobacterium tuberculosis from wound pus by molecular testing.

## CASE PRESENTATION

A patient presented in ER with dull upper abdominal pain for four days duration and was evaluated at an outside hospital. The patient was diagnosed with fatty liver and gallbladder sludge and was discharged on medication.

Subsequently, the patient developed multiple episodes of non-bilious, non-bloody vomiting associated with worsening abdominal pain. The patient was brought back to the hospital and developed respiratory distress, requiring mechanical ventilation. The patient was intubated there and extubated after 4 days and ref to higher centre on oxygen support. After that she got admitted in Max hospital for further management.

After admission, initial radiologic evidence showed presence of Bilateral(B/L) pleural effusion with right lower lobe consolidation(Picture 1 and 2) and ascites. She was admitted in ICU i/v/o ongoing respiratory failure and was intubated on same day. Broad spectrum antibiotics were started and Bronchoscopy with bronchoalveolar lavage (BAL) was performed. BAL culture showed moderate fungal growth.

Ultrasonography demonstrated ascites with features suggestive of peritonitis. A percutaneous pigtail catheter was therefore inserted for drainage

In spite of antibiotics and antifungals her condition worsened with worsening radiological signs. CT pulmonary angiography demonstrated no evidence of pulmonary embolism and right lung consolidation. A subsequent bronchoscopy was performed after few days. Endobronchial biopsy was reported as inconclusive, while BAL culture grew Acinetobacter.

Because of a persistent perihepatic collection, a second pigtail catheter was placed. An omental biopsy performed which was inconclusive.

Despite drainage, the patient continued to have intra-abdominal disease. Repeat ultrasonography demonstrated moderate ascites, and subsequent imaging showed mild-to-moderate ascites with diffuse gaseous abdominal distension. However CT of the abdomen demonstrated a small residual abdominal collection.

During the course of treatment, an episode of seizure was also documented for which neurology consultation was done. MRI of the brain was reported as negative.

The patient subsequently underwent tracheostomy for prolong mechanical ventilation.

A further bronchoscopy performed again, demonstrated Acinetobacter on BAL culture.

The patient subsequently underwent laparoscopic lavage, with placement of multiple abdominal drains, drainage was ultimately minimal and the abdominal drains were subsequently removed. Abdominal pus culture at that stage was reported as negative.

With all the supportive managements patient got partially improved and tracheostomy tube was removed and patient was discharged with low grade fever and mild abdominal discomfort.

Patient again presented in OPD after 7 days with recurrent left lower-quadrant abdominal pain associated with wound infection and high grade fever. The patient was evaluated in the outpatient department, and examination of wound pus was advised.

Pus was sent for microbiological investigations. GeneXpert MTB was found positive, with the organism reported as rifampicin-sensitive.

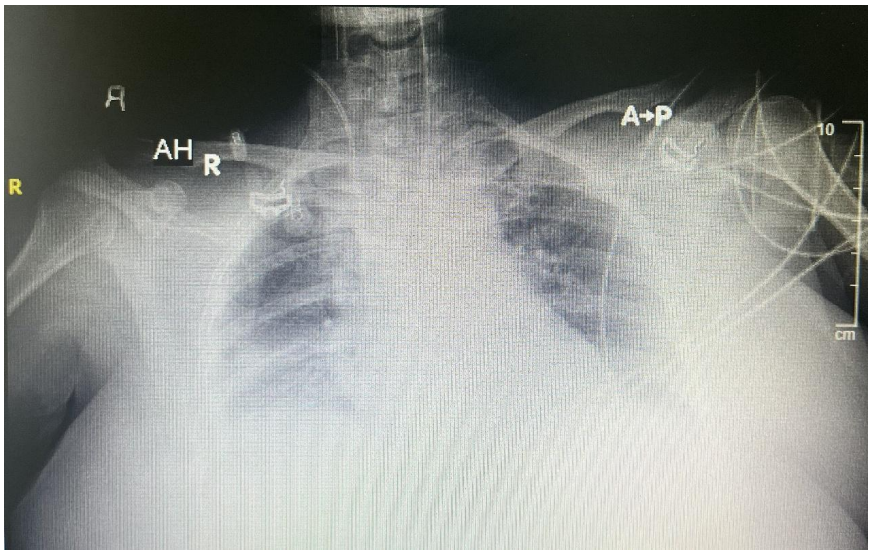
Subsequent testing shows MGIT culture positive for the same sample and documented that the identified AFB was sensitive to first-line anti-tubercular drugs as recorded in the clinical notes.

Thus, after a prolonged and complicated course dominated initially by severe abdominal and respiratory illness, the later microbiological evaluation of the recurrent wound infection established the presence of rifampicin-sensitive Mycobacterium tuberculosis.

Eventually she was totally cured after a 6 month course of ATT.

## DISCUSSION

This case illustrates the diagnostic complexity that may arise in a critically ill patient with simultaneous abdominal and respiratory pathology. The initial presentation was nonspecific, consisting of abdominal pain and vomiting, and the patient was initially diagnosed with fatty liver and gallbladder sludge. The subsequent development of worsening abdominal pain, ascites, suspected peritonitis, and respiratory failure resulted in a prolonged intensive-care course.



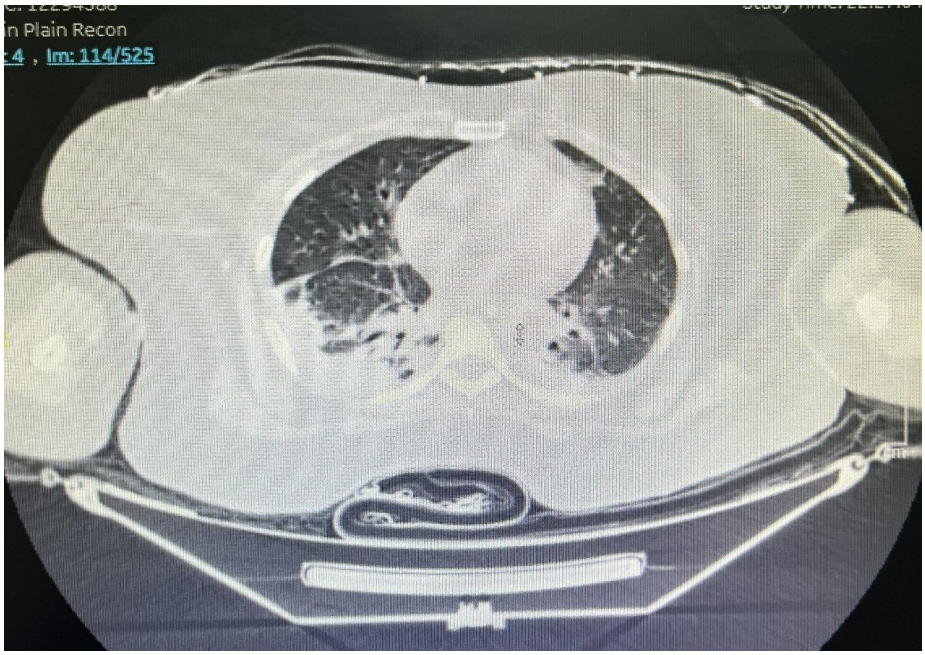

Pic 1: Right lower zone consolidation

One of the major features of the case was the coexistence of persistent intra-abdominal collections and respiratory abnormalities. Ascites and suspected peritonitis required repeated percutaneous drainage, followed by laparoscopic lavage and placement of abdominal drains. However, the omental biopsy was inconclusive and abdominal pus culture was negative. These findings demonstrate the difficulties in establishing an etiological diagnosis in a patient who has already received extensive antimicrobial and invasive treatment.

The respiratory component further complicated the clinical picture. Right-sided lung consolidation persisted despite treatment, and repeated BAL cultures demonstrated different organisms, including fungal growth and Acinetobacter. In critically ill and mechanically ventilated patients, isolation of organisms from respiratory samples must be interpreted in the context of the clinical and radiological findings, as colonization and true infection may be difficult to distinguish. In this patient, the persistent consolidation, respiratory failure, prolonged ventilation, tracheostomy, and repeated positive BAL cultures contributed to a complex infectious picture.

An important diagnostic point was the recurrent abdominal infection with fever. The decision to investigate the wound pus for mycobacteria was diagnostically significant. Both AFB testing/culture and GeneXpert MTB were positive and demonstrated rifampicin sensitivity. Subsequent susceptibility testing documented sensitivity to the first-line drugs noted in the record.

The case emphasizes that tuberculosis should remain in the differential diagnosis of persistent or recurrent abdominal, peritoneal, or wound infection, particularly when routine bacterial cultures are negative or when the clinical course is prolonged and unexplained. Abdominal tuberculosis can mimic bacterial peritonitis, malignancy, inflammatory disease, or postoperative infection. Histological examination may also be nondiagnostic, as demonstrated by the inconclusive omental biopsy in this case.




Pic 2: Right lower lobe consolidation with bi-lateral effusion

Another important lesson is the value of obtaining samples directly from the site of disease. In this patient, the diagnosis was eventually established through wound-pus testing, rather than through the initially inconclusive omental biopsy.

The case also highlights the importance of maintaining a broad differential diagnosis when a patient has a prolonged course characterized by recurrent collections, persistent wound problems, negative routine cultures, and incomplete clinical response. Although bacterial and fungal infections were documented during the hospital course, the later detection of tuberculosis suggests that the low grade infectious process might have an unexpected and untreated course in this case.

## Conclusion

The case underlines the importance of re-evaluating the diagnosis when infection persists or recurs despite conventional treatment, and of considering tuberculosis in patients with chronic or recurrent abdominal/wound disease. Appropriate specimen collection and targeted molecular and microbiological testing can be crucial in establishing the diagnosis when routine investigations are inconclusive.