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You have gut TB kidding me

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CASE REPORT

You Have Gut TB Kidding Me

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Abstract

Tuberculosis is a disease that affects millions of individuals worldwide every year.[1] Most cases present as pulmonary tuberculosis, though there are rare reports of abdominal tuberculosis. These presentations make up only 1−3% of all tuberculosis cases worldwide.[1] Symptoms are often vague, presenting as abdominal pain, discomfort, or weight changes.[2] These symptoms can be misdiagnosed for other more common gastrointestinal disorders. Unfortunately, misdiagnosis or a prolongation in diagnosis can lead to worsened patient outcome due to delay of initiation of antitubercular therapy.[3] It is therefore imperative that providers understand the spectrum of symptoms associated with this illness as well as having a high clinical suspicion for patients at risk. Incorporating this knowledge and using a thorough diagnostic work up to confirm this disease is crucial, as delay of care can lead to poor patient prognosis or death.[3]

Keywords: Abdominal tuberculosis, RIPE therapy, Mycobacterium tuberculosis, Quantiferon gold, Antitubercular therapy, Caseating granulomas

1. Introduction

According to the CDC, one fourth of the world's population (around 2 million individuals) are infected with Mycobacterium Tuberculosis, the pathogen causing tuberculosis.[1,6] Specifically, "abdominal tuberculosis, accounts for 1% to 3% of all tuberculosis cases worldwide."[1] Patients may contract abdominal tuberculosis by the consumption of foods containing mycobacterium tuberculosis, a hematogenous spread of active pulmonary tuberculosis, or by the progression of the disease via lymphatic spread.[4] The diagnosis of abdominal tuberculosis can be difficult to make due to its rarity, vague symptoms, and misdiagnosis for other causes of abdominal symptoms. Inaccurate or inconclusive testing can also lead to misdiagnosis.[5] Physicians must have a fair amount of clinical suspicion while also excluding other diagnoses in order to make an accurate diagnosis. Unfortunately, diagnosis of abdominal tuberculosis can be delayed as it is mistaken for other more common/similar presentations of abdominal symptoms. This can prolong duration of the disease or worsen patient outcome, as the treatment of abdominal tuberculosis requires prompt initiation of antitubercular therapy.[3]

2. Case presentation

We present a 23 year old female from Micronesia who presented as a transfer from Bowling Green, KY facility due to sepsis and abdominal pain. The patient had a previous admission for abdominal pain one year ago. A CT abdomen performed at that time was significant for what appeared to be widespread carcinomatosis. A biopsy was performed and pathology reports were significant for non-caseating granulomas, rather than occult malignancy. AFB and fungal stains were negative. Patient failed to follow up after this evaluation.

The patient then presented to Bowling Greene with a significant fever and recurring abdominal pain. A CT abdomen/pelvis was notable for a R. lower lobe infiltrate, left bibasilar atelectasis, a small pleural effusion, and lymphadenopathy in the mediastinum, abdomen, retroperitoneum, and pelvis. The patient was transferred to our facility for higher level of care. On presentation, labs were

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significant for a lactic acidosis and leukocytosis, with the patient requiring vasopressors. The patient was started on broad-spectrum antibiotics for the treatment of acute sepsis. ID and general surgery were consulted. General surgery recommended medical management only. Fungal, viral, and sarcoidosis work ups were started, per ID. The patient was placed on prophylactic steroids and a repeat Quantiferon was ordered. Both fungal and viral testing returned negative while the patient's quantiferon gold test returned positive. A CT chest with contrast was ordered for further work up of adenopathy with concern for TB after the positive quantiferon gold. Imaging was significant for multiple, small mediastinal lymph nodes and diffuse tree-in-bud findings throughout the lung parenchyma. Pulmonology was consulted for a bronchoscopy with EUS-guided biopsy. Pathology revealed necrotizing granuloma, consistent with tuberculosis. AFB PCR was positive for Mycobacterium tuberculosis complex. Antibiotics were altered to begin the RIPE regimen. Due to the patient's area of origin, (Micronesia is high in TB endemicity), positive IGRA, CT findings of tree-in-bud opacities with lymphadenopathy and diffuse granulomatous inflammation, and a positive PCR the patient was diagnosed with abdominal TB. The patient was discharged on long-term antitubercular therapy.

3. Discussion

Making the accurate diagnosis of abdominal tuberculosis is challenging and often delayed due to this disease's rarity and non-specific symptom presentation.[3] In general, abdominal tuberculosis responds quite well to antitubercular drug therapy.[3] Accurate and prompt diagnosis is critical in avoiding complications requiring surgery.[3] Abdominal tuberculosis has been difficult to diagnose making management challenging. This disease can appear clinically similar to gastric cancer, lymphomas, peritoneal carcinomas, Crohn's disease, and sarcoidosis.[7] This is due in part to the lesions seen with abdominal tuberculosis ability to show uptake of radioactive dye used in PET scans as well as this disease's ability to exhibit non-specific CT imaging findings (sometimes presenting as non caseating granulomas or caseating granulomas).[7] Patients often undergo regional biopsies, however, this too can be misleading.[7] It has been noted that in some cases (including our own patient) biopsies result with elevated tumor markers.[7] For instance, our patient had an elevated CA-125 marker. For these reasons, abdominal tuberculosis has been noted as "the great mimicker" by many clinicians and researchers.[7] The misdiagnosis rate can be as high as 50%–70%.[7] Even with a more in-depth work up, abdominal tuberculosis can still be mistaken for other diagnoses such as intestinal sarcoidosis and differentiation between the conditions may be difficult, even with a biopsy.[7] Due to this difficulty in diagnosis, patient clinical course and outcome can be prolonged. A common example of this is when immunosuppressive drugs are used for a misdiagnosis of Crohn's disease, which can lead to clinical deterioration in patients with abdominal TB.[7]

Lastly, other diagnostic tools such as the Quantiferon gold test (with a sensitivity of 92% and specificity of 98% in cases of pulmonary TB) can be misleading, even when providers do have a suspicion of abdominal tuberculosis. This is due to the fact that Quantiferon testing may present with false-negatives in patients with extra pulmonary tuberculosis.[5] Additionally, acid-fast bacilli may not be isolated from clinical specimens gathered. False negative QFT-GIT results have been found in 28.8% of patients with extra pulmonary tuberculosis.[5] Unfortunately, poor sensitivities are reported for other abdominal tuberculosis testing modalities such as acid-fast staining, cultures, and nucleic acid amplification.[5] Ultimately, clinicians may not be able to make a definitive diagnosis of abdominal tuberculosis. However, due to the complications discussed by postponing antitubercular therapy, a strong suspicion based on clinical gestalt and diagnostic findings should warrant initiation of antitubercular therapy.

4. Conclusion

In conclusion, the number of patients diagnosed with abdominal tuberculosis is significantly less when compared to its pulmonary counterpart.[6] This fact, along with the disease's vague symptoms and potential for incorrect or misleading work up, must make the diagnosing clinician have a broad differential as well as a high level of suspicion in order to make an accurate diagnosis.[5] Delay of diagnosis can lead to poor patient outcome and death.[3] Treatment for abdominal tuberculosis requires prompt initiation of an antitubercular drug regimen.[3] Complicated or severe cases may require more specialized interventions including surgery.[2] It is crucial for providers to understand having a strong clinical suspicion and thorough evaluation methods can help in early diagnosis. This can ultimately reduce the mortality and complications in patient populations worldwide.

Notes on patient consent

Informed consent was obtained from the patient.

Conflict of interest

No potential conflict of interest was reported by the authors.

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