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Case Report

Medicine for novel therapy

Puzzled Picture, Perilous Miliary Tuberculosis: A Case Report

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Abstract: Miliary tuberculosis is a disseminated form of tuberculosis that poses a high risk of mortality and morbidity if not diagnosed and treated promptly within the first year of onset. This case report describes a 72-year-old male who presented with non-specific symptoms, including easy fatigability, weight loss, anorexia, right hypochondrial pain for three months, and fever for three weeks. Initial evaluation with CECT abdomen revealed cholelithiasis with a dilated common bile duct (CBD), leading to the initiation of intravenous antibiotics and an ERCP to drain stones. Despite these interventions, the patient's fever and symptoms persisted. Further investigations for pyrexia of unknown origin revealed multiple miliary nodules on the CT chest, confirming the diagnosis of miliary tuberculosis. Anti-tuberculosis therapy was promptly initiated, and the patient exhibited significant symptomatic improvement within one month of follow-up. This case highlights a rare and atypical presentation of miliary tuberculosis associated with cholelithiasis, which posed diagnostic challenges. Persistent fever and unexplained symptoms, despite addressing other coexisting conditions, should prompt consideration of miliary tuberculosis, especially in elderly patients with risk factors. Early use of imaging, such as CT chest, plays a critical role in identifying miliary nodules indicative of disseminated tuberculosis. Immediate initiation of anti-tuberculosis therapy following diagnosis significantly improves patient outcomes. Clinicians should maintain a high index of suspicion for miliary tuberculosis in cases presenting with pyrexia of unknown origin or atypical symptoms, even when other diagnoses, such as cholelithiasis, are evident. Comprehensive evaluation using advanced imaging and timely initiation of appropriate therapy is essential to ensure effective management and reduce the risk of adverse outcomes in such complex cases.

Keywords: Military TB, Pyrexia of unknown origin, PET CT, CT chest, anti-tubercular therapy, cholelithiasis.

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1. INTRODUCTION

Tuberculosis (TB) remains a significant global health challenge, affecting both developed and developing countries. Despite advancements in medicine, timely diagnosis and effective treatment of TB continue to be areas of concern, particularly in resource-limited settings. However, it is encouraging to note that with improved diagnostic tools, treatment protocols, and public health measures, the global incidence of tuberculosis steadily declines at about 2 percent per year[1]. This progress stresses the importance of ongoing research, enhanced public health strategies, and access to effective anti-tuberculosis therapy. Miliary tuberculosis, a severe and disseminated form of TB, represents a particularly challenging manifestation of the disease. It occurs when Mycobacterium tuberculosis spreads hematogenously, leading to widespread micro-nodular lesions in various organs. This form of TB is associated with higher rates of morbidity and mortality, especially if not diagnosed and treated promptly within the first year of onset. The condition often presents with non-specific symptoms, such as fever, weight loss, fatigue, and anorexia, making diagnosis difficult without a high index of suspicion. Early intervention is critical, as delayed diagnosis can lead to severe complications and poor outcomes. Some rare and atypical presentations of military TB with complications have been reported in the medical literature. These include acute respiratory distress syndrome (ARDS)[2], tuberculous spondylitis[3], and osseo-articular involvement[4], among others. Such cases highlight the diverse clinical spectrum of military tuberculosis and the challenges clinicians face in recognizing and managing these unusual manifestations. We present a case of a 72-year-old male with vague complaints, including fatigue, weight loss, and right hypochondrial pain. Initially, the patient was evaluated for common conditions, including cholelithiasis, but persistent symptoms led to further investigation. On CT imaging, multiple miliary nodules in the lungs were identified, confirming the diagnosis of miliary tuberculosis[5]. The patient was promptly started on anti-tuberculosis therapy and showed significant improvement in symptoms within a month of follow-up. Recent data indicate that even with treatment, miliary tuberculosis carries a significant risk of mortality, with nearly 14 percent of patients not surviving despite therapy. This highlights the need for early diagnosis, rapid initiation of treatment, and careful follow-up to improve outcomes in affected patients. As TB remains a major global health issue, raising awareness of rare presentations and complications is essential to ensure timely intervention and effective management strategies.

2. CASE REPORT

2.1 Case Presentation

A 72-year-old man came to causality with chief complaints of easy fatigability for 3 months, associated with loss of appetite and loss of weight 7 kgs in 3 months. History of intermittent fever present, not associated with chills and rigors since 3 weeks and relieved by anti-pyretics. The patient also has complaints of the right hypochondriac region on and off for 3 months. No other specific complaints. The patient is a known case of systemic hypertension, diabetes mellitus and is on regular medication. The patient also has a known case of p-ANCA-associated vasculitis and completed a course of treatment 3 years back. On examination, the patient is conscious, oriented, febrile (100.2 F), and Icteric present. On abdominal examination, tenderness is present in the right hypochondrium. Respiratory system - normal vesicular breath sounds heard. On cardiovascular examination, normal heart sounds. CNS- no focal neurological deficit.

2.2 Diagnosis

Laboratory investigations revealed an elevated bilirubin level of 3.2 mg/dL (normal range: <1.2 mg/dL), indicative of potential hepatobiliary involvement. However, other routine tests, including complete blood count (CBC), renal function tests (RFT), electrocardiogram (ECG), and chest X-ray, were within normal limits, ruling out other common systemic causes. The patient was also seronegative for HIV and HBsAg, excluding viral infections as contributing factors. Contrast-enhanced computed tomography (CECT) of the abdomen showed significant findings, including gallbladder wall thickening, cholelithiasis, subserosal edema, and dilation of both the gallbladder and common bile duct (CBD), suggesting obstruction and inflammation. Based on these findings, the patient was started on intravenous (IV) antibiotics for presumed biliary sepsis, and an endoscopic retrograde cholangiopancreatography (ERCP) was performed to drain the gallbladder stones and relieve the obstruction. Despite these interventions, the patient continued to experience persistent fever, easy fatigability, and other systemic symptoms, necessitating further evaluation for an underlying condition contributing to the unrelenting clinical presentation. These findings emphasized the need to explore additional causes for the unresolved symptoms beyond the biliary pathology.

2.3 Treatment

The patient was started on IV antibiotics and other supportive medication after urine and blood cultures had been sent. Culture turned out to be negative. In view of persistent fever despite escalating antibiotics, the patient was evaluated for pyrexia of unknown origin. Mantoux test was done and found to be positive (19 mm). Sputum was induced with 3% saline nebulization, and sputum for AFB was found to be negative. CT chest showed multiple miliary nodules in bilateral lung fields. Whole-body PET CT was taken to rule out malignancy, showing no evidence of any primary malignancy. FDG uptake by the military nodules was found to be less than 2.5, suggesting infective nodules. The patient was diagnosed with Military Tuberculosis and started on Anti-tuberculosis therapy HRZE [Isoniazid+ Rifampicin+ Pyrazinamide+ ethambutol] according to his body weight. The patient well-tolerated the ATT regimen.

2.4 Follow Up

On follow-up after one month of treatment, the patient was symptomatically better with no complaints of fever or fatigability, weight gain of 2 kgs over the past 1 month, and appetite improved.

2.5 Prognosis

Diagnosing Miliary Tb and initiating treatment within one year of onset have a very good prognosis.

3. DISCUSSION

Among all cases of Tuberculosis, Miliary TB accounts for less than two percent of cases, and in case of extra-pulmonary cases - it can be up to 20 percent. Presently, Miliary Tuberculosis affects most commonly either adolescents of age group 13-20 years or elderly people above 60 years of age [6,7]. This patient falls in the second category. While compared with females, the male is predominantly affected by Miliary tuberculosis [8,9]. The pathogenesis behind miliary tuberculosis is the massive lympho-haematogenous spread of Mycobacterium tuberculosis from the foci of infection and it also causes embolization to vascular beds in multiple organs [10]. The conditions which predispose to Miliary TB are HIV infections, alcoholism, diabetes mellitus, chronic renal failure, haemodialysis, on immunosuppressant therapy, underlying malignancy, organ transplantation. The common symptoms of miliary TB are fever, anorexia, weight loss, fatigue, cough with sputum, seizure, nausea, abdominal pain, and diarrhea [11-13]. The following signs should be looked for in miliary TB - Pallor, cyanosis, icteric, lymphadenopathy, hepatomegaly, splenomegaly, ascites, and erythematous macules may be present in some cases [14-16]. Though Miliary tuberculosis presents with the above signs and symptoms, there are certain atypical clinical manifestations. They are cryptic miliary tuberculosis, pyrexia of unknown origin, acute respiratory distress syndrome, acute empyema, septic shock, thyrotoxicosis, cholestatic jaundice, deep vein thrombosis, syndrome of inappropriate antidiuretic hormone secretion [17-19]. In miliary TB, patients improved with anti-tuberculosis treatment alone, and complications are self-limited if the patient is diagnosed and treated appropriately.

4. CONCLUSION

The diagnosis of Miliary TB remains elusive since the presentation is non-specific, leading to a low threshold for suspecting it. Unfortunately, usage of immunosuppressive drugs/ HIV drugs results in a decreased positivity of sputum smear and an increase in extrapulmonary manifestations; diagnosis becomes a burden and relies completely on the clinical hunch and experience, and sometimes a trial of therapy is carried out in the absence of a proof of the disease. Hence, a more sensitive diagnostic test is needed for early diagnosis and prompt management.

5. AUTHOR'S CONTRIBUTION STATEMENT

P.Ram Prasaanth is a major contributor in reviewing the literature and writing the manuscript. N.N. Anand is a major contributor in reviewing the literature and writing the discussion. A. Karthick Ramalingam is a contributor to the diagnosis and management. Anandh Mohan contributed to the case description and clinical course. All authors approved the final manuscript.

6. CONFLICT OF INTEREST

Conflict of interest declared none.

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