

Case Report

Unusual case of tuberculosis

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ABSTRACT

Though commonly encountered, extrapulmonary tuberculosis (TB) can sometimes present with variable clinical picture intricating the diagnosis. The nonspecific symptoms include pyrexia of unknown origin, hepatosplenomegaly, lymphadenopathy, meningitis, and, rarely, variety of hematological abnormalities, namely, anemia, pancytopenia, and leukemoid reaction. When it presents with bone marrow (BM) involvement, prognosis is usually poor. We, hereby, report a case of unusual TB presentation with a 4 month history of fever associated with fatigability, and diarrhea. During the hospital stay and follow up, the patient showed a spectrum of interesting hematological findings, including pancytopenia on peripheral smear, caseating granulomas consistent with TB on bone marrow examination. The patient showed a good clinical as well as hematological response to anti-tuberculosis treatment. This paper highlights the significance of a hematological picture in the final confirmation of TB, which may otherwise be passed off as nutritional or other unrelated causes.

Keywords: PUO, Pancytopenia, Tuberculosis, Bone-marrow

INTRODUCTION

Tuberculosis (TB) is a contagious infection that can present with a variable clinical picture, hence, making the diagnosis difficult. Hematological abnormalities associated with extrapulmonary TB include anemia of different types, leukemoid reaction, and rarely pancytopenia. Bone marrow biopsy has been widely used as one of the diagnostic tools when blood counts show a picture of pancytopenia.¹⁻³ Though considered a treatable condition, bone marrow tuberculosis has been reportedly associated with fatal outcome.²⁻⁵

We describe the case of an immunocompetent patient who presented with fever of unknown origin and hematological derangements. The purpose of this paper is to draw attention to the importance of correlating the uncommon presentation of a commonly encountered condition and highlighting the fact that the prognosis of

bone marrow TB depends largely on thorough intervention, timely diagnosis, and rapid initiation of treatment.

CASE REPORT

25 year old man, resident of Navimumbai, came to hospital with history of fever since 3 months and diarrhea of 3 months, weight loss and loss of appetite since 3 months.

The fever was moderate to high grade intermittent in the evening. The diarrhea was loose watery 5 to 7 times per day non foul smelling or blood stained. Patient also complained of significant weight loss in last 3 months. During the hospital stay his diarrhea had stopped.

For his chronic diarrhea he was completely worked up and had undergone colonoscopy and even a biopsy of IC

junction which was inconclusive as it showed blunting of villi and nonspecific ileitis.

Significant past history included pulmonary tuberculosis with tuberculous lymphadenopathy for which he was treated for 6 months 3 years back.

On examination he was thinly built, pulse was 80/min, BP – 110/80 mmHg, RR was 16/min, and afebrile, he was pale but there was no icterus or lymphadenopathy.

His chest examination was clear and per abdomen showed mild splenomegaly, rest all system examination were normal.

His investigations showed a Hb of 8 normocytic normochromic, ESR was 102, RFT and LFT was normal and serum electrolytes were normal, he tested negative for HIV, stool examination was normal, urine examination was normal. Chest x ray was normal.

An abdominal ultrasound revealed splenomegaly. 2Decho showed normal heart with no valvular involvement or pericardial effusion. Serum ANA was negative, thyroid profile was normal, repeated blood cultures did not show any bacterial growth.

During his course of hospitalization he continued spiking fever so he was further investigated and a CT thorax plus abdomen was done which were normal.

After this he was posted for a bronchoscopy and BAL smear showed acid fast bacillus sample were also sent for MGIT culture and Gene-Xpert.

Patient was started on weight base AKT for the same CAT 2.

On follow up of the patient the patient complained of continued fever and after 25 days of treatment the patient came again to hospital.

This time the patient was breathless since 2 days, spiking high-grade fever with chills and rigors since 7 days and having dry cough since 7 days.

On examination he was tachypneic and dyspneic his pulse was 112/min, BP – 90/70 mmHg, RR – 28 min and high-grade fever. He was pale but there was no icterus, lymphadenopathy, and cyanosis.

His chest examination revealed decrease air entry in the infrascapular on the right side with crepitation, ronchi and bronchial breath sounds. Rest of the chest was unremarkable, per abdomen showed splenomegaly, other system examination were unremarkable.

His investigations showed severe anemia with Hb of 6 (normocytic normochromic) with thrombocytopenia and leucopenia, retic count was normal, iron studies were normal except for an elevated serum ferritin levels, ESR

and CRP was raised, peripheral smear showed normocytic normochromic anemia. RFT, LFT and Electrolytes were all normal.

Chest X ray showed obliteration of costophrenic and cardiophrenic angle on the right side with diffuse opacity with air bronchogram. ECG was normal.

Sputum was induced and sent for MGIT culture and Gene-Xpert. Routine examination did not show AFB and no growth.

Blood cultures showed no growth.

A repeat 2Decho showed normal cardiac valves and no pericardial effusion.

Abdominal ultrasound was normal.

Ultrasound of chest showed moderate pleural effusion on the right side.

Pleural fluid showed increase TLC – 3000 with predominantly 80% lymphocytes, ADA was 7.

Pleural fluid was sent for MGIT culture and Gene-Xpert. A repeat CT thorax was done which showed after.

DISCUSSION

Tuberculosis is one of the oldest and most commonly encountered diseases.¹ Although there is a significant steady decline in the incidence of active pulmonary tuberculosis due to early diagnosis and prompt treatment, the incidence of extra-pulmonary TB has remained constant particularly due to a delay in recognizing the condition when the presenting clinical scenario consists mostly of nonspecific extra-pulmonary symptoms.^{1,4}

Extra-pulmonary TB is considered a treatable disease with good outcome, requiring strict compliance.^{4,6,7} When it presents with bone marrow involvement, the outcome depends largely on timely diagnosis and early initiation of treatment.^{5,6}

The baseline workup towards the definite diagnosis of TB is usually a noninvasive approach and has significant yield.⁶ Imaging studies did not prove very helpful in our case as his chest X-ray did not show the characteristic military pattern, and subcentimeter lymph nodes seen on chest CT were inaccessible for biopsy. The tuberculin skin test was negative, but skin tests are unreliable as these are usually negative in patients with extrapulmonary TB.⁸

Extrapulmonary TB can present with variable hematologic abnormalities including anemia, leucopenia, leukocytosis, thrombocytopenia, thrombocytosis and monocytosis, and rarely pancytopenia.^{1,2,8} In our case, laboratory investigations revealed hematological and

biochemical abnormalities that included pancytopenia and raised ferritin level about 50 times above the normal upper limit. Several factors are considered to cause pancytopenia in disseminated or extra-pulmonary tuberculosis including hypersplenism,¹ histiocytic hyperplasia,¹ maturational arrest,¹ or infiltration of the bone marrow by caseating or noncaseating granulomas causing reversible or irreversible fibrosis.^{1,7} In the literature, there is no systematic pattern of diagnostic approach, and several diagnostic tests including invasive procedures have been used to confirm the diagnosis.⁶ In our case, examination of the bone marrow was requested when the patient developed pancytopenia. The findings were consistent with bone marrow involvement of tuberculosis.

The incidence of bone marrow granuloma ranges from 0.38% to 2.2%.^{3,5} In contrast to good prognosis of pulmonary TB, the literature review of various similar reported cases of bone marrow TB has revealed high mortality in the range of fifty to almost hundred percent. Certain factors are thought to contribute to the variable outcome such as disease severity, other underlying pathologies leading to immune-compromised state, immunosuppressive therapies, and delay in initiation of appropriate treatment.^{1,9} Another contributing factor to poor outcome is macrophage-activating syndrome (MAS), which is a nonspecific clinical syndrome comprising of pancytopenia, hypertriglyceridemia, and hyperferritinemia² as was the case in our patient. A retrospective chart review of bone marrow TB was done during the period from 1990 to 2002 at King Faisal Specialist Hospital and Research Center, Riyadh, which showed a mortality rate of 50%.¹⁰ The high mortality in that study was attributed to the delay in presentation.¹⁰

CONCLUSION

Although certain poor prognostic factors such as MAS, chronicity, and caseating tubercular granulomas in the bone marrow were present, our patient showed good subjective response with subsidence of symptoms within few weeks after following the initiation of the treatment. The favorable outcome in our patient is thought to be due to an early diagnosis, rapid start of treatment, good compliance to anti-TB medication, and thorough follow up.

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