An Unusual Presentation of Tuberculosis - -A Case Report

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***Abstract*—BACKGROUND: Tuberculosis is the leading cause of infectious disease –related mortality worldwide, with india reporting the greatest number of cases. 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.**

I. INTRODUCTION

Tuberculosis is a contagious infection that can present with a variable clinical picture, hence, making the diagnosis difficult [1]. Hematological abnormalities associated with extrapulmonary TB include anemia of different types, leukemoid reaction, and rarely pancytopenia [1]. 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.

II. CASE REPORT

A 65 year old male, chronic smoker presented with 1 month history of low grade fever, flu like symptoms, and loss of appetite.He was previously treated for PTB for 6 months as a newly diagnosed case under revised national tuberculosis control programme (RNTCP) guidelines. On examination, he was conscious, oriented and having a high-grade fever of 100F with relative bradycardia and heart rate around 72 beats per minute

- Systemic examination:
- R/S: Normal vesicular breath sounds, no added sounds
- CVS: S1, S2 heard, no murmurs heard
- P/A: soft, non-tender, no organomegaly
- CNS: higher mental functions intact, no FND

- On evaluation
- CBP-Hb -6.2
- RBC-1.92
- TLC-2490
- Platelets-15000
- Pcv-18.2
- Hepatitis B surface antigen (HBsAg), hepatitis C virus antibody (anti-HCV), and HIV antigen/antibody were all negative.
- urine cultures did not show any growth. the chest x ray was normal.
- Serum LDH and ferritin were elevated at 786u/l and 8800ng/ml respectively.
- USG showed moderate splenomegaly with a size of 15cm and mild hepatomegaly.
- 2D ECHO was normal
- Peripheral smear showed microcytic hypochromin anemia with anisopoikilocytosis and pancytopenia.No hemoparasites noted.
- Bone marrow biopsy revealed hypocellular marrow with focal areas of caseous necrosis and granulomas, along with numerous acid-fast bacilli on ZN staining suggestive of tuberculosis of the bone marrow.
- In view of febrile neutropenia, he was initiated on empirical antibiotics
- The patient was initiated on 4 drug anti tubercular treatment (ATT) and given pulse steroid therapy

for 3 days. he began to improve clinically, with the cessation of fever spikes. the patient was discharged with advice to continue ATT for a total duration of 18 months.

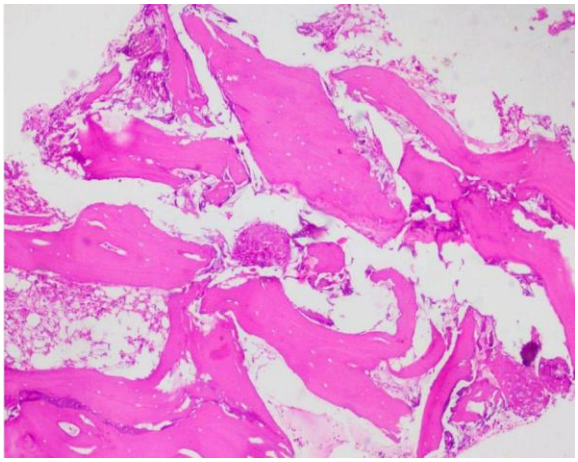

Figure 1: Hematoxylin-eosin preparation showing hypocellular marrow with focal areas of caseous necrosis and granulomas.

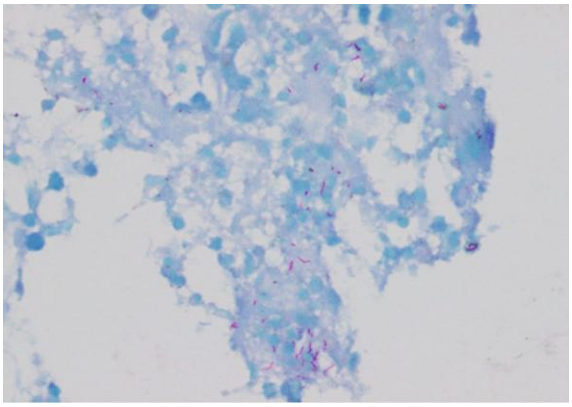

Figure 2: Numerous acid-fast bacilli seen on Ziehl Nielsen staining.

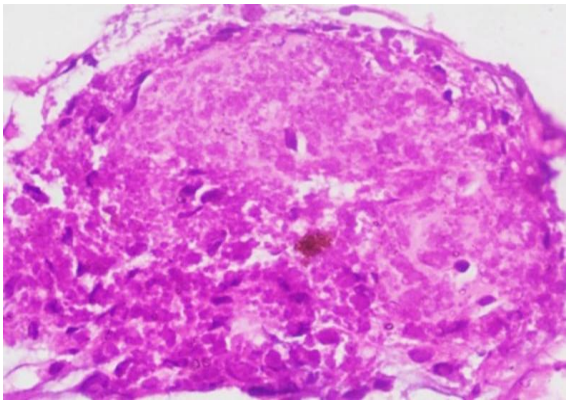

Figure 3: High caseating granuloma from sameslide

III. DISCUSSION

Tuberculosis is one of the oldest and most commonly encountered diseasea[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 extrapulmonary TB has remained constant particularly due to a delay in recognizing the condition when the presenting clinical scenario consists mostly of nonspecific extrapulmonary symptoms[1,4]. Extrapulmonary 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].

Extrapulmonary TB can present with variable hematological abnormalities including anemia,leucopenia ,leukocytosis,thrombocytopenia,thrombocytosis and monocytosis and rarely pancytopenia [1,2,8]. In our case,laboratory investigations revealed hematological abnormalities like pancytopenia.several factors are considered to cause pancytopenia in disseminated or extrapulmonary tuberculosis including hypersplenism,histiocytic hyperplesia,maturational arrest or infiltration of bone marrow by caseating or noncaseating granulomas causing reversible or irreversible fibrosis[1]

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 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 immunocompromised state, immunosuppressive therapies, and delay in initiation of appropriate treatment [1, 9]

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].

Although certain poor prognostic factors such as 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 followup.

IV. CONSENT

The consent was taken and signed by respective patient.

V. CONFLICTS OF INTEREST

The authors have no conflicts of interest.

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