

CASE REPORT

MILIARY TUBERCULOSIS PRESENTING AS PANCYTOPENIA

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ABSTRACT: Miliary tuberculosis results from hematogenous dissemination of tubercle bacilli. It can present in acute, subacute or chronic form. There are many haematological states associated with tuberculosis especially military TB. Haematological abnormalities like anaemia, leucopenia, monocytosis and thrombocytopenia due to tuberculosis are common, but pancytopenia is rare. Pancytopenia can occur due to various reasons like hypersplenism, histiocytic hyperplasia, bone marrow infiltration by granuloma through interferons etc.

Tuberculosis is still a major public health problem in developing countries (1). Acute generalized miliary TB is a condition that results from the sudden and often overwhelming hematogenous dissemination of tubercle bacilli from an established focus to many organs of the body. The large number of small, acute tubercles that develops in these organs have been said to resemble millet seeds in size and appearance, hence stems the adjective "miliary" (2).

The term miliary was coined in 1700 by John Jacobus Manget, who likened the appearance of the involved lung, with its surface covered with firm white nodules to millet seeds. The clinical presentation of TB is highly variable, manifestations can be acute but more likely subacute or chronic. Acute disease may be fulminant presenting as syndrome of septic shock and acute respiratory distress syndrome (3).

The subacute or chronic presentation of miliary TB are more common than acute. These patients may present with fever of unknown origin or dysfunction of one or more organ. Apart from these, there are many haematological states associated with tuberculosis especially military TB. The majority of patients have little disturbance in their hematology other than normochromic or hypochromic anemia, normocytic anaemia of chronic disease (4). Hematological abnormalities like anaemia, leucopenia, leucocytosis, monocytosis and thrombocytopenia due to tuberculosis are common, but bleeding as a presenting manifestation due to tuberculosis is rare (5). There are occasional reports of pancytopenia in miliary TB (6).

CASE REPORT 1: 63 yr old male presented with complaint of fever since 3 months, wt loss since 3 months, breathlessness since 2 months and fatigability since 2 months. On examination BP=110/70 was recorded in right arm supine position, pulse=110/min, good volume. There was pallor, no icterus, cyanosis, clubbing or lymphadenopathy. Systemic examination revealed just palpable soft liver, spleen was not palpable, and there was no ascites. Other findings included soft systolic murmur in the pulmonary area. Chest X-ray showed features of miliary TB. Urgent investigations were carried out. Investigations revealed Hb- 3.2, TLC-1400, DLCn70/l20m/2/e3, MCV-70.6, MCH-17.8, MCHC-25.2, ESR-118. PBF showed mild hypochromia, microcytes, and macrocytes. Liver and kidney function tests, serum electrolytes, blood sugar and urine examination was within normal limits. Abdominal USG was normal. Bone marrow examination was done to look for cause of pancytopenia. It showed megaloblastic changes. A diagnosis of disseminated TB was made and the

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patient was prescribed four antitubercular drugs. Patient was given two blood transfusions. The patient started improving and the counts became normal in three weeks.

CASE REPORT 2: 20 yr old female presented with fever since 1 month, which was intermittent, associated with chills and rigor, not associated with night sweats. On examination BP=110/70 mm Hg was recorded in right arm supine position, Pulse=100/min, anemia was present however there was no icterus, cyanosis, clubbing, lymphadenopathy. Systemic examination revealed no abnormality. Chest x ray had miliary shadows. On investigating the patient, reports attained were Hb=7.8, TLC=1200, DLC= N-27, L-70, M-1, E-2, platelet=30,000, PCV=20.5, ESR-96, MCV=94.3, MCHC=38. PBF showed pancytopenia. Renal and liver function tests and electrolytes were found to be normal. Abdominal USG had no significant findings. Bone marrow aspiration was done and the aspirate was suggestive of megaloblastic changes. The patient was started on anti-tubercular drugs. Patient showed considerable improvement in next 2 weeks of treatment. Her blood counts started improving. Reports after 2 weeks Hb=9.4, TLC=10,000, DLC=N-70, L-25, M-3, L-2 and platelet=1.2 lac. Patient remained afebrile and remained asymptomatic after that.

CASE REPORT 3: A 45 yr old female, resident of Punjab came with complaints of fever since 1 month, nasal bleed since 1 week, generalized weakness since 1 week . Fever was mild associated with chills and rigors, night sweats and relieved on taking medication. The patient also complained of breathlessness which was insidious in onset and progressed rapidly, however there was no history of orthopnea or PND. On examination BP=90/60 was recorded in right upper limb, pulse=120/min, regular. Pallor was present, however there was no icterus, cyanosis, clubbing , lymphadenopathy or oedema. Routine investigations were carried out Hb=6.8, TLC= 1,000, DLC= N-0, L-5, M-0, E-0 and platelets were 9,000, PTI-93 .3%. PBF showed normocytes, microcytes and macrocytes. Renal and liver function tests were found to be normal. Tests for malaria, dengue and enteric fever were negative. Chest X-ray showed miliary mottling. Bone marrow aspiration and biopsy was performed. It showed megaloblastic anaemia. Polymerase chain reaction for TB was sent. Meanwhile anti-tubercular drugs were started. Polymerase chain reaction was also found to be positive Patient's count started improving and at the end of 3 weeks, Her counts were near normal and the symptoms started improving.

DISCUSSION: Anaemia is the most common haematological disorder caused by TB but other abnormalities occur such as leucopenia, leukaemoid reaction, myelofibrotic changes, the haemophagocytic syndrome, polycythemia, thrombocytosis, thrombocytopenia, monocytosis. Tuberculosis can present in a number of ways. One of the rare presentation of miliary TB is pancytopenia. Numerous hypothesis have been put forward to explain the occurrence of pancytopenia in miliary TB such as hypersplenism, histocytic hyperplasia and phagocytosis, bone marrow infiltration by tubercular granuloma or occasionally maturation arrest (7, 8). Tubercular granuloma may cause pancytopenia by replacement of marrow cells or suppression through release of interferons and lymphotoxins (9). Thrombocytopenia can occur due to deposition of mycobacterial antigen on platelet surface. Polymerase chain reaction of bone marrow helps in rapid diagnosis and eliminates the need of long period of culture for AFB.(10) There have been case reports where a trial

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of antitubercular drugs has been helpful (11) so trial of anti-tubercular drugs can be a reasonable alternative in majority of such cases as proved in all the above three cases.

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