A rare presentation of Miliary Tuberculosis with Hypereosinophilia

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ABSTRACT

Tuberculosis remains one of the most important causes of death from an infectious disease. Miliary tuberculosis (TB) is potentially fatal form of TB that results from massive lymphohematogenous dissemination of Mycobacterium Tuberculosis bacilli. There are non specific clinical symptoms, and the chest radiograph does not reveal classical miliary changes. Classic miliary TB is defined as millet like (mean, 2mm; range, 1-5mm) seeding of TB bacilli in the lung. High Resolution Computed Tomography (HRCT) is relatively more sensitive and shows randomly distributed miliary nodules. Here we present a case of miliary tuberculosis which is associated with hypereosinophilia.

Keywords: Miliary tuberculosis, Hypereosinophilia, HRCT

INTRODUCTION

The term miliary tuberculosis is coined by John Jacob manget[1,2,3]. Up to 25% of patients with miliary TB may have meningeal involvement. Males appear to be more frequently affected by miliary TB in paediatric as well as adult series. Mortality from this disease has remained high inspite of effective therapy available. The disease is characterized by high mortality, reported to be between 18% and 30%. The diagnosis is frequently missed and more invasive investigations are often required. India bears the highest burden of TB (1.96 million cases annually)[4]. Therefore a high clinical suspicion is important for early diagnosis and better outcomes.

CASE REPORT

A 23years old male patient came to emergency room with complaints of high grade fever, associated with chills since one month, more in the evenings. Not relieved by any medication. History of productive cough, yellowish colour, small in quantity, non foul smelling. History of loss of appetite, recent weight loss and burning micturition were present. No history of rash. No history of passage of seed like structures in the stool. Not a known case of Diabetes, Hypertension, Tuberculosis, Asthma, Epilepsy, Coronary Artery Disease.

On examination, patient conscious, thin built, moderately nourished, afebrile, pulse rate-62/min, Blood Pressure-110/80mm of Hg, Respiratory system- bilateral air entry present, no added sounds, other system examination normal.

Complete blood picture: haemoglobin-14gm%, total white blood cells-18,600cells/mm^3, eosinophils-58%. Urine examination-clear, blood urea-19, serum creatinine-0.8, random blood sugar-84mg/dl, electrolytes-normal, liver function tests-normal, WIDAL- Negative, smear for microfilaria-negative. Absolute eosinophil count- 9633cells/mm^3.chest X-ray-miliary mottling (Figure1) seen in both the lung fields. Mantoux- negative. Prothrombin time-14sec, INR-1.

HRCT chest shows diffusely scattered discrete 1-2mm nodules in random distribution noted in both lungs. Multiple small confluent opacities distributed randomly in both the lung fields, suggestive of Miliary tuberculosis (Figure 2&3).

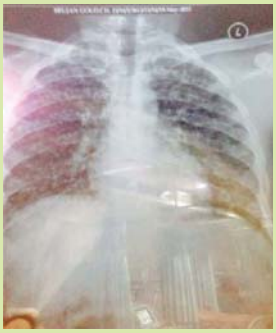

Fig 1: Shows miliary mottling of both the lung fields.

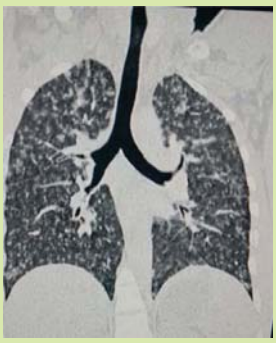

Figure 2: Showing multiple small opacities

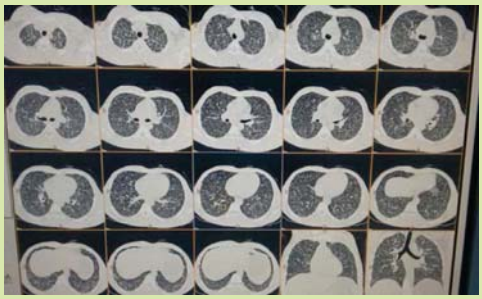

Fig 3: Showing multiple small confluent opacities of 1-2mm size distributed randomly in both lung fields.

Bronchial Fluid Analysis showed- Polymorphs-20%, lymphocytes-80%, total cell count-200cells/mm^3, also seen are degenerated epithelial cells. Bronchial washing bacteriologically sterile under aerobic incubation. Bronchial washing for KOH show no fungal elements, gram stain & Zeihl Neelsen stain were negative. Bronchial washing: moderately cellular smears showing normal bronchial columnar epithelial cells along with lymphocytes, goblet cells and pigmented macrophages. Background shows cluster of eosinophils.

Sputum for Acid Fast Bacilli-negative. Stool for ova, cyst & trophozoites- not seen. Total IgE levels-960IU/ml, Complement C3-1.55gm/l, High sensitive C-reactive Protein- 6mg/dl (>3-high risk), Anti Nuclear Antibodies and Rheumatoid factor were negative, Anti Ds DNA-negative. Angiotensin Converting Enzyme-52U/L(8-65 U/L) Gamma interferon quantiferon-negative.

During the course in the hospital he was treated with antihelminthic measures (Tab. Hetrazan 100mg TID), Tab. Ivermectin (6mg) +Mebendazole(400mg) once in a week for 3weeks) for 28days. But there was no improvement in symptoms. Then he was started on Anti Tuberculosis Treatment (ATT) . He was assessed after one month.

There is significant reduction in the symptoms, Chest X ray showed improvement-resolution of mottling [Figure 4], eosinophils came to 14%, absolute eosinophil count reduced to 840 cells/mm^3, ESR reduced to 6mm. He was continued ATT for 6months and he is doing well.

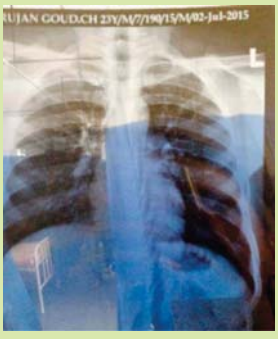

Figure 4: Showing resolution of miliary mottling

DISCUSSION

Clinical manifestations of miliary tuberculosis are nonspecific and wide ranging, depends on the predominant site of involvement. Fever, night sweats, anorexia, weakness and weight loss are presenting symptoms in the majority of cases. Occurrence of daily morning temperature spikes is reported to be characteristic of miliary TB[5]. Patients have cough and other respiratory symptoms due to pulmonary involvement. Physical findings include hepatomegaly, splenomegaly and lymphadenopathy. Eye examination may reveal choroidal tubercles, which are pathognomic of miliary TB, in up to 30% of cases. Various hematologic abnormalities may be seen, including anaemia with leukopenia, lymphopenia, neutrophilic leukocytosis and leukemoid reactions and polycythemia. Disseminated intravascular coagulation has been reported. Meningismus occurs in fewer than 10% of cases. Sputum smear microscopy is negative in most cases.

Bronchoalveolar lavage and transbronchial biopsy are more likely to provide bacteriologic confirmation and granulomas are evident in liver or bone-marrow biopsy specimens from many patients. If it goes unrecognized, miliary TB is lethal; with proper early treatment, however, it is amenable to cure. The following criteria have been proposed for the diagnosis of miliary TB[6]: (1) clinical presentation consistent with the diagnosis of TB- like pyrexia with evening rise of temperature, night sweats, anorexia and weight loss of greater than 6weeks in duration – responding to antituberculosis treatment; (2) typical miliary pattern on chest radiograph; (3) bilateral, diffuse reticulonodular lung lesions on a background of miliary shadows demonstrable either on chest radiograph or HRCT scan and (4) microbiological or histopathological evidence of TB. Non parasitic causes of pulmonary eosinophilia include miliary tuberculosis, Wegner granulomatosis, sarcoidosis and drug reactions, tropical pulmonary eosinophilia etc. There are some diseases like JOB's syndrome in which there is hypereosinophilia, eczema, recurrent skin and pulmonary infections (like miliary tuberculosis) apart from other findings[7].

CONCLUSION

Hypereosinophilia in miliary TB is due to allergic phenomenon, which usually does not respond to anti parasitic drugs. After excluding the other possible cause of hypereosinophilia, patient has been started on ATT. For which he responded well and got relieved of his symptoms and eosinophil count came down. Patient is doing well.

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