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Case Report

Delayed diagnosis of disseminated tuberculosis in pregnancy: a case report

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ABSTRACT

Miliary tuberculosis (TB) is a lethal form of TB, if left untreated. Miliary TB accounts for <2% of all cases of TB in immunocompetent individuals. Intracranial tuberculoma is a rare manifestation of *Mycobacterium tuberculosis* (MTB), seen in only 1% of TB patients. It can occur as single or multiple lesions, most commonly located in the frontal and parietal lobes. Clinical features mimic that of any space-occupying lesion in the brain. In pregnant women, diagnosis of TB may be delayed by the non-specific nature of early symptoms and because they are often attributed to pregnancy. Here we report one such case where the diagnosis of TB was delayed due to the non-specific nature of her symptoms in ante-natal period.

Keywords: Tuberculoma, Miliary TB, Ante-natal

INTRODUCTION

Tuberculosis (TB) is one of the leading causes of preventable morbidity and mortality worldwide. The disease primarily involves the lungs, and at times hematogenous spread results in the development of extrapulmonary TB (EPTB). Disseminated TB refers to concurrent involvement of at least two non-contiguous organ sites of the body, or involvement of the blood or bone marrow by TB. Miliary TB is a pathological name describing millet seed-sized (1-2 mm) granulomas in various organs affected by tubercle bacilli.[2] It occurs due to lymphohematogenous dissemination from a *Mycobacterium tuberculosis*-laden focus. In 1700, John Jacob Manget coined the term "miliary TB" (derived from the Latin word "miliarius," meaning related to millet seed) to denote this lethal form of disseminated TB.[3-5] It is diagnosed by the presence of a diffuse miliary mottling on chest X-ray or high-resolution computed tomography (HRCT) scan, sputum culture and AFB, sputum for GeneXpert. CNS TB is rare and often due to hematogenous spread from the lung and most devastating forms of human mycobacterial infection.[6] CNS TB accounts for 1% of all TB cases and 5% of extrapulmonary TB cases.[7] Diagnosis of tuberculoma can often be overlooked. If treatment is delayed especially, CNS TB has a worse outcome than pulmonary TB.[8]

CASE REPORT

A 21-year-old female, with no known comorbidities presented with complaints of single episode of abnormal body movements and weakness of left upper limb, 2 weeks after caesarean section. Past history revealed recurrent episodes of evening rise of temperature, occasional episodes of headache and loss of weight from 6th month of antenatal period. She did not consider it significant and hence did not inform her gynaecologist. The patient's mother was diagnosed with pulmonary TB 2 years back and was lost to follow up.

Her general physical examination showed signs of pallor. A neurological examination indicated a decrease in power of left upper limb (grade 4). No other focal neurological deficits were found. Respiratory system examination was normal.

Peripheral blood counts showed a Hb level of 10 g/dl, total leucocyte count was 15730 cells/mm^3 and ESR was 102 mm/hr. Mantoux test and sputum AFB smear negative.

Chest X-ray showed miliary mottling. Sputum for AFB by GeneXpert was positive and MTB was detected.

MRI of the brain was done and showed well defined, intra axial, ring enhancing lesion with significant perilesional edema in bilateral cerebral hemispheres, cerebellum and cervical cord, largest of which measured 10×8 mm in right frontal lobe with probable differential diagnosis of TB and neurocysticercosis.

The patient started on anti-tuberculous regimen consisting of rifampicin, isoniazid, ethambutol and pyrazinamide. She also given anti-epileptics and steroids starting at a dose of 40 mg and then tapering it down over a period of 6 weeks. The patient has completed 12 months of treatment.

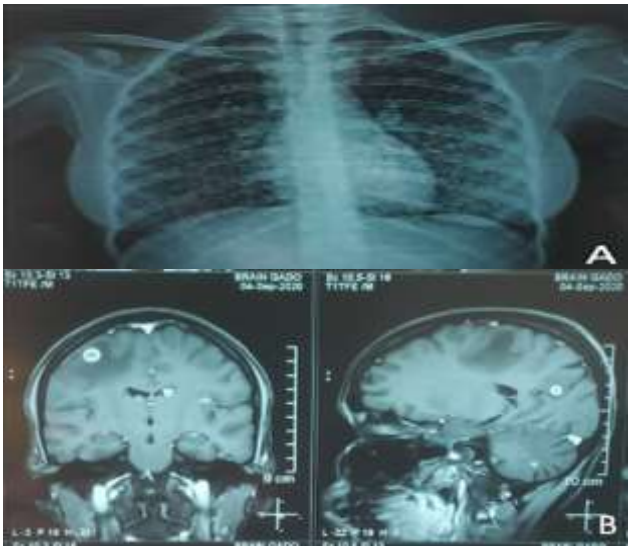

Figure 1 (A and B): Chest X-ray of patient before treatment showing military mottling. MRI brain showing well defined ring enhancing lesions.

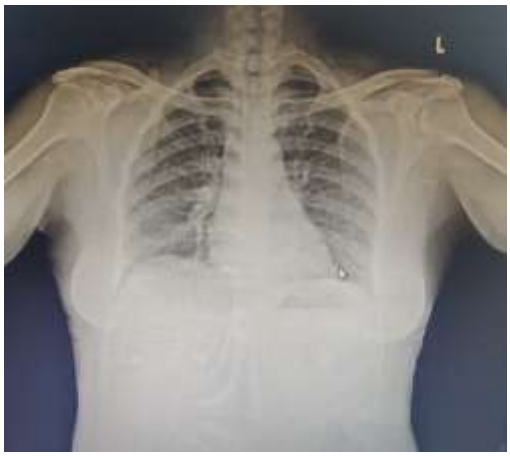

Figure 2: Chest X-ray taken post treatment showing radiological resolution.

DISCUSSION

Tuberculoma brain is a rare complication of TB. Overall, TB of the central nervous system (CNS) accounts for approximately 1% of all the diseases caused by *Mycobacterium TB*.[9,10] It occurs due to hematogenous spread most often due to pulmonary origin. Typically, it occurs in immunocompromised patients.

Diagnosis of tuberculoma in brain is a challenge, occurring either as solitary or multiple rings enhancing lesion with perilesional edema on magnetic resonance imaging of brain, which can be mimicked by neurocysticercosis, coccidiomycosis, toxoplasmosis, metastasis etc.

Examination of cerebrospinal fluid, biopsy and culture of the tuberculoma are diagnostic but demanding. X-ray chest and CT chest might demonstrate the presence of tuberculous etiology. Rarely it may not demonstrate the presence of tuberculous lesion in which case bronchoalveolar lavage and culture must be done for diagnosis, along with the clinical symptoms.

In this case, X-ray chest showed evidence of miliary lesion which offered a clue for diagnosis although miliary mottling can occur in a variety of other conditions like histoplasmosis, blastomycosis, coccidiomycosis, sarcoidosis or malignancies.

Mantoux test and sputum for acid fast bacilli was negative. In miliary TB this can occur because there is a higher proportion of tuberculin anergy and sputum for AFB maybe negative because miliary TB is paucibacillary. In such situations, sputum for GeneXpert, bronchoalveolar lavage for GeneXpert and culture may aid diagnosis.

In this case, sputum for GeneXpert was positive and MTB was detected, avoiding BAL and culture and diagnosis of miliary TB with tuberculoma brain was established. TB is believed to get flared during pregnancy due to stress and poor nutritional status. Contact history might have been the reason for development of the lesion in this case.

Patient was started on anti-tubercular treatment with fixed drug combination according to body weight. She was also given steroids at a high dose first and then tapered down over a period of six weeks. On follow up after 1 month, patient showed clinical improvement with no future episodes of seizures and there was an improvement in the weakness of the left upper limb and power returned to the 5/5.

She was advised to continue breast feeding with safety precautions and the child was started on isoniazid chemoprophylaxis for a period of 6 months after screening with chest X-ray since the child had received BCG vaccination.

Patient has completed 12 months of treatment and is now symptomatically better.

CONCLUSION

Patients with pyrexia of unknown origin and loss of weight during antenatal period should be screened to the rule out TB. Patients should be motivated to give sputum for AFB, GeneXpert and culture along with Mantoux test and other blood tests. Pregnant patients can undergo chest X-ray screening with abdominal shield for early diagnosis of TB thereby preventing morbidity and mortality.

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