

MILIARY TUBERCULOSIS AND TUBERCULOMA OF BRAIN PRESENTING LIKE MENINGITIS

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ABSTRACT

Tuberculoma of brain is one of the manifestations of central nervous system (CNS) tuberculosis. It usually behaves like space occupying lesion and presents with focal neurological symptom or seizure. Sign of meningism is not common in tuberculoma. Simultaneous presence of miliary lung mottling and CNS tuberculoma is uncommon. Our patient presented with features of meningitis with normal CSF study. Miliary mottling was found in chest x ray and finally diagnosed as having tuberculoma of brain by MRI study.

Key Words: Tuberculoma; Miliary Mottling; Meningism

Introduction

Tuberculoma of brain occupies a place in the spectrum of neurotuberculosis. They usually present with seizures, focal neurological deficits or signs and symptoms of raised intra-cranial tension such as headache, vomiting and papilledema. Tuberculoma, presenting with features of meningism is not very common. It is also uncommon to find simultaneous presence of miliary lung mottling and CNS tuberculoma. The case described herein presented with clinical features of meningitis with neuroimaging evidence of tuberculoma of brain. Her Chest x ray revealed miliary mottling though the CSF study was essentially normal.

Case Report

A 16 years old female presented with alteration in sensorium for two days preceded by a history of fever for seven days. She had a normal birth history, normal developmental milestones, no past history of tuberculosis, and no history of seizure or any similar illness in the past. On examination, her higher mental functions were impaired, she was dehydrated, tachypnoeic, afebrile, pulse rate was 110 /minute, and blood pressure was 90/70mm of Hg. She had neck rigidity with positive Kernig's and Brudzinski's sign. Examination of other systems did not reveal any abnormality. Her haemoglobin was 12gm/dl; total leucocyte count was 10000 /cumm with predominant polymorphonuclear leucocytosis. Her serum urea and creatinine values were 284 mg/dl and 2.4 mg/dl respectively. She was given IV fluids for the treatment of

pre-renal failure. CSF examination showed, cell count - 5 cells/cumm, all lymphocytes; protein -38 mg/dl; sugar - 43 mg/dl; AFB and Gram stain were negative.



Figure-1: X-ray chest showing miliary mottling

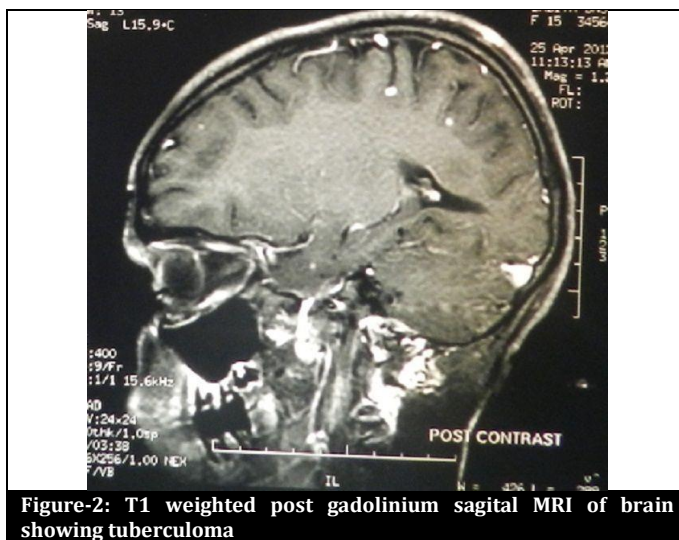


Figure-2: T1 weighted post gadolinium sagittal MRI of brain showing tuberculoma

CSF was also sent for viral serology which came out to be negative. On the third day of admission, after normalization of urea and creatinine level, contrast enhanced CT scan of brain did not show any abnormality. Chest X-ray showed miliary shadows on both lungs (Figure 1). Sputum for AFB, Montoux test and ICTC were negative. Choroid tubercle was not present. Ultrasonography of abdomen was normal. Anti-tuberculosis treatment was started on the same day along with steroids. A repeat CSF study failed to show any abnormality. MRI of brain showed multiple ring enhancing pial based lesions highly suggestive of tuberculoma (Figure 2). The patient responded well to steroid and anti-tuberculosis drug and was discharged in a normal condition with an advice to continue the medications and to follow up.

Discussion

Brain tuberculoma is one of the neurological manifestation of tuberculosis, usually occur in immunocompromised individuals due to haematogenous spread from a primary focus, mainly lung.^[1] Tumour necrosis factor alpha has been considered as an important cytokine in the neuropathogenesis of M. tuberculosis.^[2,3] Locally produced TNF- α in experimental bacterial meningitis leads to altered blood-brain barrier permeability and cerebrospinal fluid (CSF) leucocytosis. It facilitates the progression of TBM in a murine model. CNS tuberculoma usually presents with ophthalmologic symptoms, papillary oedema, intracranial hypertension, hemiplegia, hemiparesis, monoplegia, aphasia, cerebellar symptoms, cranial nerves lesions, epilepsy.^[4] Tuberculoma, presenting with features of meningism like neck rigidity, positive Kernig's sign and Brudzinski's sign is not very common, but it was the presenting feature in our patient. Previously Ceylan E, et al. reported a case of a 12 year old girl who presented with head ache and convulsion and finally diagnosed as a case of

tuberculoma of brain and miliary tuberculosis.^[5] This is very similar to the case described here. As seen in our patient, CSF may not show typical features of elevated CSF protein, decreased sugar level and lymphocytic pleocytosis in severe tuberculosis of brain or spinal cord. The absence of classic CSF findings should not misguide the treating physician and if there is high index of suspicion ATD should be started in such setting.^[6] In our patient neuroimaging also failed to show any evidence of meningitis. Only a chest X-ray with miliary mottling gave us the first clue to suspect tuberculosis as the possible etiological agent. Montoux test is frequently negative in miliary tuberculosis, whereas it is usually positive in tuberculoma of brain. It was negative in our patient.

Conclusion

CNS tuberculoma and miliary mottling are common in immunosuppressed patients but no evidence of immunodeficiency could be documented in this case. Here we are reporting an immunocompetent patient with tuberculoma of brain and miliary tuberculosis, presented with features of meningitis.

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