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Disseminated Tuberculomas with Infective Ventriculits- A Case Report

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I. Introduction

Tuberculosis (TB) is a infectious disease caused by Mycobacterium Tuberculosis.The different forms of central nervous system (CNS) infection due to *Mycobacterium tuberculosis* include meningitis, tuberculoma, and spinal arachnoiditis.Among patients with tuberculosis, approximately 1 to 5 percent are complicated by CNS TB. Therefore, in regions where the prevalence of TB is high and the prevalence of post-primary dissemination is common among children and young adults, all three forms of CNS TB (tuberculous meningitis, intracranial tuberculoma, and spinal tuberculous arachnoiditis) are encountered relatively frequently.

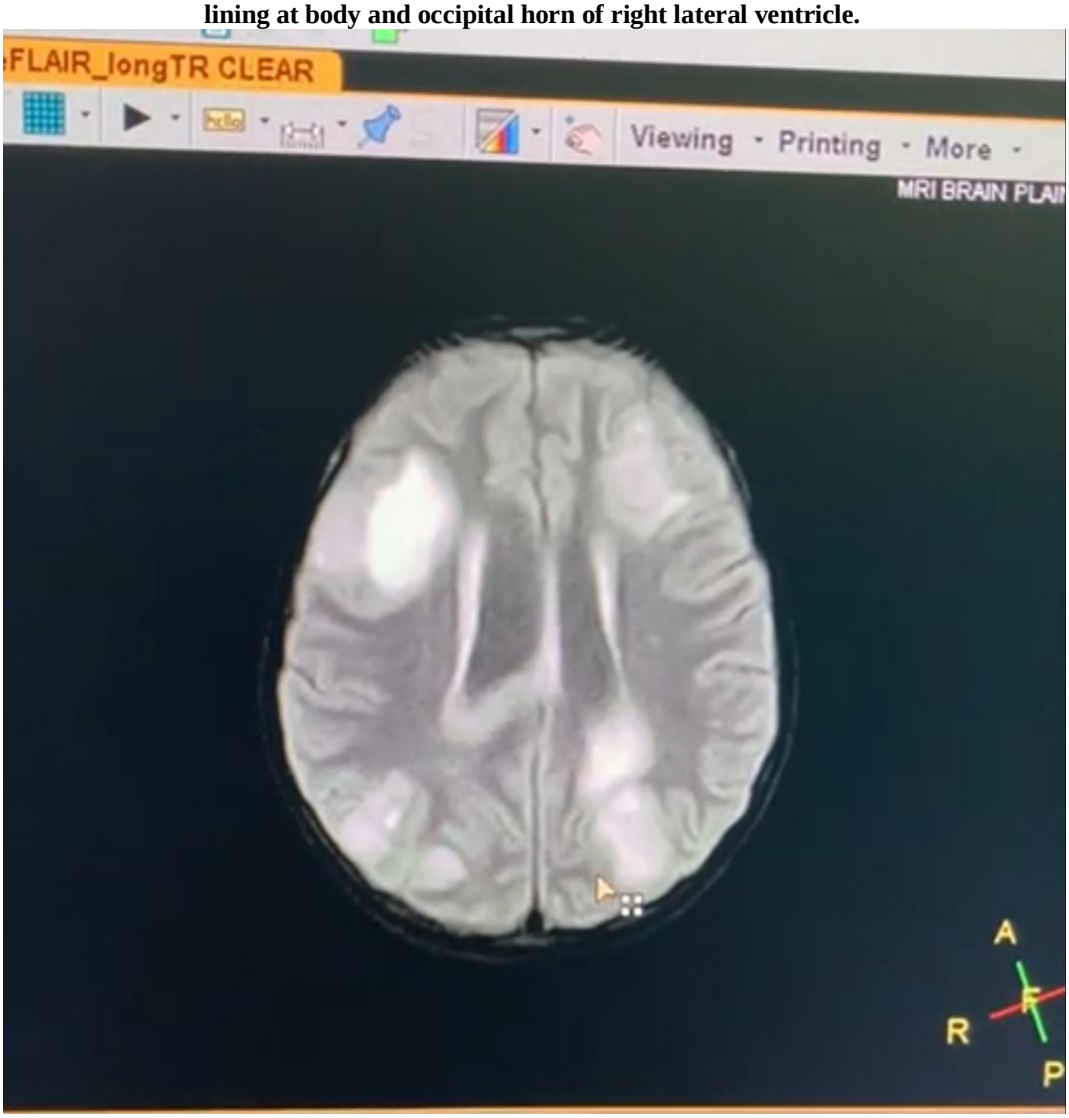
II. Case Presentation

In 2020 a 13 yr old girl with seizures,altered sensorium and drowsiness had come to RIMS KADAPA.She had HIV since last 3 years and on irregular medications.She was studying in High school.Her both parents were HIV and on medications.She had history of decreased appetite since last 1 week.

Laboratory investigations were done and MRI was done for this patient.Her chest x ray was done which was normal.MRI was done T1 post contrast showing multiple rounded well defined areas of restricted difffussion noted scattered throughout bilateral cerebral and cerebellar hemispheres.These are showing central T@ hyperintensity with peripheral T2 hypointense rim.Largest lesion measures approx 2*3 cm.Mild perilesional edema noted.Post contrast study shows peripheral rim enhancement of the lesions with central necrotic areas.

FIgure 1. **The magnetic resonance image of the brain showing multiple rounded well defined areas of restricted diffusion noted scattered in cerebral and cerebellar hemispheres with mild perilesional edema.**

FIgure 2. Brain MRI Brain FLAIR :Mild altered signal intensity with edema noted along ventricular lining at body and occipital horn of right lateral ventricle.



III. Discussion

Tuberculoma — A tuberculoma is a conglomerate granulomatous focus that develops from coalescing tubercles acquired during disseminated bacillemia. Tuberculomas occur most commonly in the brain; they may also occur in the spinal cord.

Tuberculomas are often clinically silent and may reach considerable size in the absence of meningeal inflammation]. In the setting of TB meningitis, subclinical tuberculomas (single or multiple) may be observed on radiographic imaging.

Alternatively, tuberculoma may present as a clinically evident mass lesion of the brain in the absence of TB meningitis. This presentation occurs most commonly in endemic areas and typically consists of a child or young adult with headache, seizure, progressive hemiplegia, and/or signs of elevated intracranial pressure .

Tuberculomas may develop during adequate antituberculous therapy; this may be a result of the immune response against dying *M. tuberculosis* organisms. Radiographically, tuberculomas are discrete, ring-enhancing lesions of the brain surrounded by perilesional edema; they may be single or multiple.

On contrast computed tomography imaging, radiographic findings of early-stage tuberculoma consist of low density or isodense lesions, often with edema out of proportion to mass effect and with little encapsulation Later-stage tuberculomas are well encapsulated, isodense or hyperdense, and have peripheral ring enhancement.The diagnosis of tuberculoma should be suspected in patients with mass lesion of the brain and relevant epidemiologic factors (eg, history of prior TB infection or disease, known or possible TB exposure, and/or past or present residence in or travel to an area where TB is endemic.Patients with TB should be treated with clinical case management and directly observed therapy (DOT). it is the most effective way to maximize adherence and is recommended by the World Health Organization (WHO).

In general, treatment of CNS TB consists of an initial intensive phase (4 drugs administered for 2 months) followed by a prolonged continuation phase (usually 2 drugs administered for an additional 7 to 10 months), for a total treatment duration of 9 to 12 months.In children, the intensive phase four-drug regimen consists of isoniazid, rifampin, pyrazinamide, and either ethionamide or streptomycin administered daily for two months.In the setting of infection known or presumed to be caused by susceptible strains, the continuation phase consists of isoniazid and rifampin (given daily), continued for 7 to 10 month.

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