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## **European Stroke 2020: A Challenging Diagnosis of Brain Tuberculoma**

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Introduction: Central Nervous System tuberculoma accounts for almost 1% of all tuberculosis (TB) presentations. The incidence of brain tuberculoma is increasing in developed countries due to AIDS and immigration from TB endemic countries. Symptoms and radiologic findings of CNS TB can be nonspecific and a case of brain tuberculoma in a patient who was thought to have a neuro-sarcoidosis due to biopsy showing noncaseating-granuloma.

## **Case-report:**

A 79-year-old African American male patient with a history of prostate cancer presented with progressive weakness, headache, and confusion. Free and total PSA levels were within normal limits. Brain MRI showed a 4.1x3.3x4.1 cm left frontal lesion at the surface of the left lateral ventricle with vasogenic edema and midline shift. The stereotactic biopsy of the lesion was inconclusive with showing the possibility of a noncaseating granuloma. This result was similar to a right para-adrenal mass that was biopsied a year prior. The pathologic diagnosis was in favor of sarcoidosis and metastatic prostate cancer was ruled out. The patient had immigrated from Liberia and denied any constitutional symptoms. Interferon gamma release assay was positive, and chest CT showed pleural calcifications but without evidence of active TB. Acid-Fast Bacilli (AFB) smear of blood was negative. Bone marrow AFB culture was negative. Rheumatologic and infectious workup of blood, serum and cerebrospinal fluid was unremarkable. Stereotactic brain biopsy was inconclusive with showing astrocytosis, so he subsequently underwent left-sided frontal open brain biopsy which was compatible with granulomatous inflammation. Fungus tissue culture, sputum and blood cultures were negative. He was empirically started on anti-TB medications and dexamethasone treatment. There was no significant clinical improvement after two weeks of anti-TB treatment., so considering the possible diagnosis of neurosarcoidosis, received intravenous he methylprednisolone. Later, the culture of the brain biopsy grew AFB. We diagnosed him with tuberculoma of the brain. After a month of treatment, head CT showed near resolution of the mid-line shift and decrease in the left frontal and bilateral parietal lobes-edema.

(CNS) Discussion: In our case, the diagnosis was challenging because of non-caseating granuloma on biopsy and lack of demonstrable AFB in multiple specimens. Up to 14% of brain tuberculomas can present with non-caseating granulomas, and further, up to 50% of culture positive TB specimens were smear negative initially. This suggests lead to misdiagnosis or mistreatment. Here we describe that the index of suspicion in a high risk patient should remain high even in the face of multiple negative results. Considering the catastrophic course of brain tuberculoma, physicians should also consider empiric anti-TB treatment in high-risk patients.