

CASE REPORT

Tuberculoma In A Healthcare Worker

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INTRODUCTION

Tuberculosis (TB) is an endemic and a public health concern around the world.¹ It commonly affects the lungs, however it can affect other organs, which known as extrapulmonary tuberculosis. Extrapulmonary TB occurs in around 10-15% of all TB cases.² Central nervous system (CNS) TB is one of the severe types of extrapulmonary TB, accounts for around 1% of TB cases.² It resulted from Mycobacterium tuberculosis (MTB) spread via hematogenous to intracranial. Tuberculoma is around 0.2% of all biopsies brain masses.²

CASE REPORT

We are reporting a case of tuberculoma in a healthcare worker. A 30 years-old immunocompetent lady, who is a healthcare worker in medical department, presented to us with 2 days history of diplopia and headache, associated with fever for one week. Otherwise, she denies any prolonged cough or constitutional symptom. On examination, she has an isolated left sixth cranial nerve (CN) palsy, otherwise other central nervous system (CNS) examination is normal, no other remarkable systemic signs. A plain non-contrasted computer tomography (CT) of brain was done initially, no significant abnormalities was demonstrated. Lumbar puncture was performed for diagnostic purpose. Her opening pressure was high, however cerebrospinal fluid (CSF) investigations showed aseptic pictures, no significant findings. Connective tissue disease screen and MTB screening were negative including Mantoux test. Her chest x-ray was clear as well. She was subsequently proceed with magnetic resonance imaging (MRI) of the brain in another hospital and MRI showed multiple enhancing foci with right temporal lobe rich focus (images 1-3). CT of the thorax, abdomen and pelvis (TAP) showed no evidence of infection

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or malignancy. She was then diagnosed with tuberculoma due to highly suspicion based on collective of clinical history as patient is an at-risk population and neuroimaging findings. Therefore, anti-TB treatment was started. During her follow up, she shows good responses to the treatment with resolved isolated CN 6 palsy.

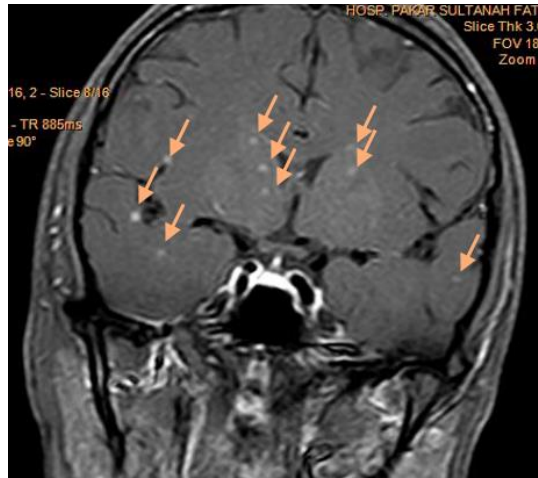


Image 1: T1 image shows hypointense lesions (arrows)

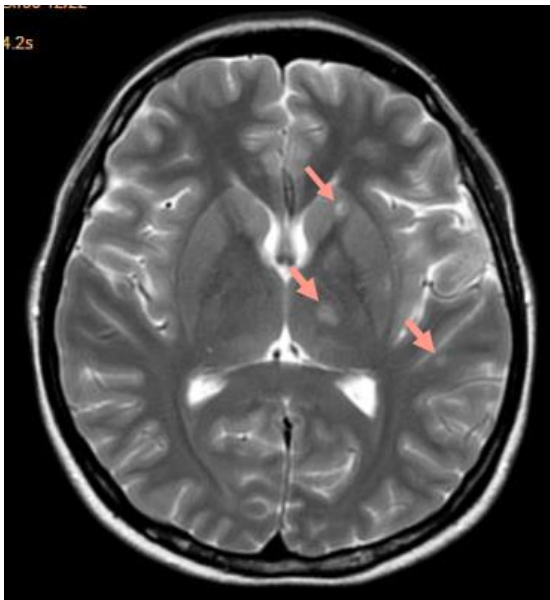


Image 2: T2 image shows hyperintense lesions (arrows)

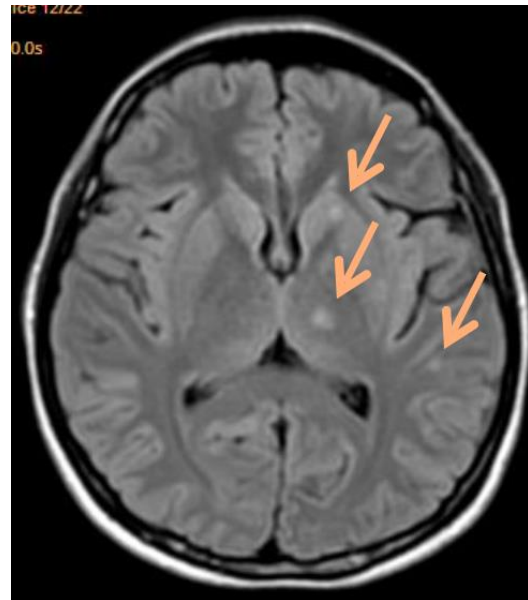


Image 3: FLAIR image

DISCUSSION

In developing countries, 5-30% of space occupying lesion of CNS is tuberculoma. Tuberculoma is a well-defined granulomatous space occupying lesion caused by *Mycobacterium tuberculosis*. Commonly it is spread hematogenously, however, it can also be direct extension from local infection such as tuberculous otomastoiditis.³ Tuberculoma can be present clinically silent or clinically evident mass lesion of the brain, such as headache, seizure, hemiplegia or signs and symptoms of increase intracranial pressure.⁴

Sixth cranial nerve is the commonly affected cranial nerve as it has a long intracranial peripheral course. The pathology can affect anywhere along its pathway. The causes of sixth cranial nerve palsy include vascular, degenerative, infection, inflammation, neoplastic or traumatic cause. Therefore, extensive investigations are needed for diagnosis.⁵

In tuberculoma, MRI is the modality of choice. In CT brain, tuberculoma shows 'target sign', which is a central focus of calcification with a ring of peripheral enhancement.⁶ However this can be demonstrated in many other CNS lesions such as cryptococcoma, cerebral abscess, brain metastatic disease and neurosarcoidosis. MRI scan is more specific and sensitive in assessing tuberculoma. A tuberculoma starts to develop with a tuberculous granuloma with small tuberculous foci, which named as 'rich foci'. It will then progress into the 'target sign'.⁶ In tuberculoma, it has a fairly solid caseous necrosis at the central with background of granulomatous reaction, however liquefactive necrosis centrally also may occur.⁶

In this case, a diagnosis of cerebral tuberculoma was made based on clinical suspicious due to her exposure to TB patient during work with focal neurological deficit and neuroimaging findings. However, we can't achieve an early diagnosis and management due to limitation in our facility in a district hospital. For tuberculoma, gold standard for diagnosis is brain mass biopsy. In this patient, brain mass biopsy is not performed due to the highly suspicion with tuberculoma and patient responded well with treatment and risk of brain biopsy.

CONCLUSION

To establish a diagnosis of tuberculoma can be challenging especially patient presented without pulmonary involvement. A high index of suspicion is needed in reaching the diagnosis. In patient who is having brain mass lesion with relevant epidemiology such as from a TB endemic area or history of TB exposure, tuberculoma need to be a differential diagnosis.⁵

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