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Mysterious Headache: A Case Report

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Abstract

A 30-year-old woman who was experiencing recurrent headaches, blurred vision, vomiting, and sporadic fever bouts for a year presented to the RIMS emergency. The patients had a history of pulmonary tuberculosis 5 years back and had taken ATT for that. On systemic examination her PR = 88/min, BP = 110/70 mm Hg, GCS = E4V5M6, CNS = Neck Rigidity +, Right Eye Abduction Absent, Fundus = normal, Motor, Sensory, Cerebellar Examination = normal. Respiratory system, CVG, GIT examination results were within normal range. Her Haemoglobin was 7.9 gm/dL, total Leucocyte Count was 11,200 cells/mm, ESR was 55 mm/hr, Random blood was sugar 119 mg/dL, Serum creatinine was 0.9 mg/dL, AST was 22 U/L, ALT was 26 U/L, Serum Iron was 26.4 micro gm/dL, HIV test was Negative, CSF Analysis result showed WBC – 135 cells/mm3 (N40 L60), Protein – 83.6, mg/dL, Sugar – 53 mg/dL, and ADA 7.0 U/L and Anti-cysticercal Antibody was negative.

Key Word: *Isolated brainstem tuberculomas, Tuberculous Rhombencephalitis, cerebellum, hindbrain, brain tuberculomas.*

Introduction

Tuberculous Rhombencephalitis is a form of CNS tuberculosis that affects the hindbrain (cerebellum and hindbrain). Usually manifested in the form of tuberculomas. Brainstem tuberculomas are an uncommon entity and comprise only 5% of CNS tuberculomas. **[**1**]**

The term "Rhombencephalitis" was first used in 1951 by Bickerstaff and Cloake. It is described as an inflammatory condition that affects the cerebellum and brainstem in the hindbrain. There are many different etiologies for it, including demyelinating diseases like multiple sclerosis, autoimmune diseases like Bechet's disease and systemic lupus erythematosus, infectious diseases like listeriosis, tuberculosis, mycobacterium avium complex, Brucella, Borrelia, Pneumococcal infections, Cytomegalovirus, Epstein-Barr virus, Enterovirus, West Nile fever. **[**2,3,4,5,6,7,8**]**. But majority of cases has unknown etiology. However, the cause of most occurrences is uncertain. **[**2**]** The present case was a rare case isolated brainstem tuberculomas. The patient had provided written informed consent for the publication of the case details including figures.

Case Report

A 30-year-old female presented with history of headache, blurring of vision, vomiting and intermittent episodes of fever for 1 year. The patient was previously treated for Pulmonary Tuberculosis, 5 years back. The following details were obtained on examination:

PR – 88/min, BP – 110/70 mm Hg, GCS E4V5M6; CNS: Neck Rigidity +; Right Eye Abduction Absent; Fundus normal; Motor, Sensory, Cerebellar examination normal; RS: CVS, GI systems were found to be within normal limits. Lab findings are presented in table no.1. Coronal T1W image showed multiple rings enhancing lesions in pons and cerebellum (figure.2) and sagittal T1W image showed multiple rings enhancing lesions in cerebellum, pons and medulla (figure.3). Figure. 1 shows the differential diagnosis for the present case.

Table No. 1: Showing the lab test results.

INVESTIGATIONS	RESULT	REFERENCE RANGE
Haemoglobin	7.9 gm/dL	11.0 – 16.0 gm/dL
Total Leucocyte Count	11,200 cells/mm3	4,000 – 11,000 cells/mm3
ESR	55 mm/hr	0 -20 mm/hr
Random blood sugar	119 mg/dL	80 – 140 mg/dL
Serum creatinine	0.9 mg/dL	0.6 – 1.1 mg/dL
AST	22 U/L	5 – 40 U/L
ALT	26 U/L	5 – 40 U/L
Serum Iron	26.4 micro gm/dL	60 – 150 micro
HIV	Negative	
CSF Analysis	*WBC – 135 cells/mm3 (N40 L60)* *Protein – 83.6 mg/dL* *Sugar – 53 mg/dL* *ADA 7.0 U/L*	
Anti-cysticercal Antibody	Negative	

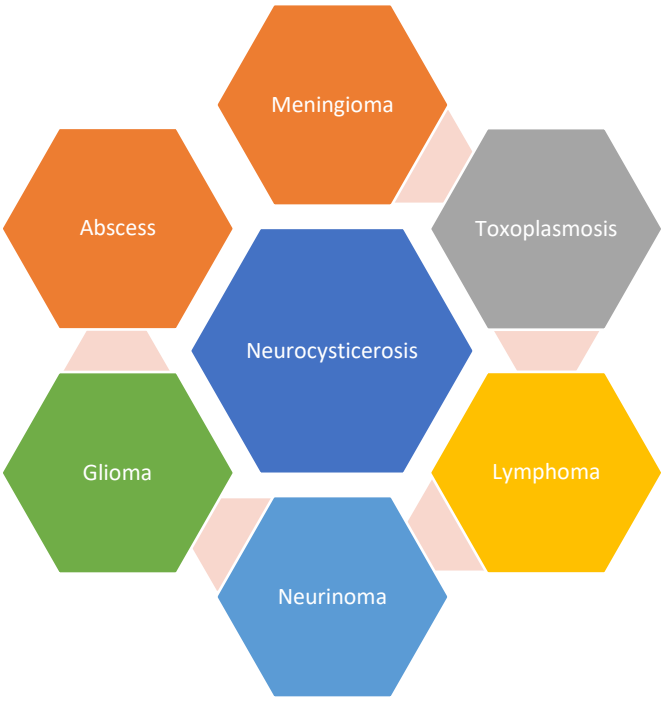

Figure 1: Showing differential diagnosis

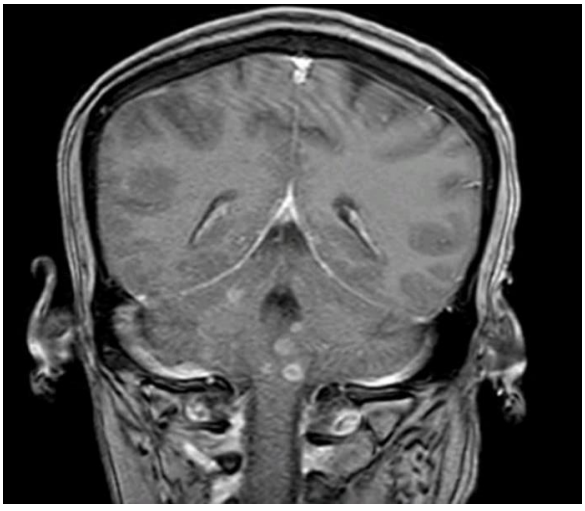

Figure 2: Coronal T1W image showing multiple rings enhancing lesions in pons and cerebellum.

Figure 3: Sagittal T1W image showed multiple rings enhancing lesions in cerebellum, pons and medulla

Discussion

Different types of mycobacteria, typically mycobacterium tuberculosis in humans, produce the multisystemic infectious illness known as tuberculosis (TB). [9]

The meninges, brain, spinal cord, cranial and peripheral nerves, ears, and eyes are all susceptible to meningotuberculosis of the nervous system. The bacteria, which is mostly found in the body, spreads and causes brain tuberculosis. Among infectious diseases, tuberculosis is still the most common reason for death. A timely diagnosis of active tuberculosis is essential for its treatment because of the present migration patterns, which have made the disease a worldwide health concern. In 1993, the World Health Organization (WHO) proclaimed tuberculosis to be an international emergency. Brain abscesses are tuberculomas that develop into pus-filled cavities and indicate poor defense mechanisms. They are rare and may require surgical excision. [10] Tuberculomas constitute 33% of intracranial space-occupying lesions in patients in developing countries. [11] Calcification may be present within the contrast enhanced ring, creating a target sign which is probably a sign of reactivation. 12 Brain tuberculomas is rare and its diagnosis would be difficult and impossible because of its variety of presentation, therefore clinical findings and special tests are needed. Due to the rarity of brain tuberculomas and the variety of ways they manifest, it is necessary to employ clinical observations and specialised tests to make a diagnosis. Since CT was revealed to have a sensitivity of 100% and specificity of 85.7 percent, it suggested a need for additional investigation with MRI as the preferred approach or histological diagnosis. 13 Multiple ring-enhancing lesions may be seen on the CT scan in the current example, however results based only on the scan are speculative. When there are several brain tuberculomas, a brain biopsy is the most reliable diagnostic procedure, and this is what the case's surgical findings revealed should be the ultimate diagnosis.

Findings such as a history of fever, a high ESR, a positive tuberculin test, and a positive response to anti-tuberculosis medication should support the diagnosis. 14 According to reports, MRI is more effective than CT for diagnosing brain tuberculomas. Therefore, suspected TB sufferers should undergo the diagnostic procedures. In conclusion, CT scan and MRI supplied crucial information that helps the identification of brain tuberculomas. [13]

A case was reported where A 15-year-old girl was referred to the emergency with altered consciousness, drowsiness, abnormalities in gait motor, and sensation of the left side extremities (without symptoms of pulmonary infection). In the past six months, there had been a history of overall weakness, which had progressed inside to a neurological deficiency. She was unable to move her right side of the body, but she was able to intermittently react to inquiries and follow instructions. When questioned by a doctor, she could respond. She had a sense of location, time, and people. There was a

neck issue and left-side paresthesia. Sensory and motor systems in the brain as well as the meninges showed no evidence of discomfort. Sensory and motor systems in the brain as well as the meninges showed no evidence of discomfort. Brain X-ray results were normal. **[**15**]** One another case was reported of a female patient, age 17, married and right-handed, and was hospitalised to a neurology emergency unit with a sudden onset severe headache that was only partially responsive to mild analgesics. There was no photophobia or phonophobia present; the headache was pulsatile and limited to the left eye and forehead. She stated in the history that she had undergone a gynaecological evaluation two months prior due to fever, sweating, malaise, abdominal pain, and vaginal bleeding. At that time, she was diagnosed with genital tuberculosis, and isoniazid and rifampicin were started, which significantly reduced her symptoms. She came from a low socioeconomic background, and it was discovered that she had only received part of her childhood vaccinations. Electrolyte values, erythrocyte sedimentation rate, C-reactive protein, and liver and kidney function tests were all within normal ranges. Brucella antibodies, VDRL, and viral hepatitis markers were all negative. CT scans of the abdomen, thorax, and chest did not reveal any lesions. No lesion was found on cranial CT, but a hyperintense single mass lesion with peripheral edoema and absorbing contrast medium was found at the pontine level of the brain stem on cranial MR with contrast (Picture 1,2). Cerebrospinal fluid (CSF) was obtained following spinal tap. CSF had a higher pressure and was clear and colourless. No cells were found. The CSF protein level was 114 mg/dL and the glucose level was 22 mg/dL (the concurrent blood glucose level was 85 mg/dL). Diagnosis of tuberculoma is difficult and very important for appropriate approach to treatment as can also be seen by cases mentioned above. The present case has also found a unique presentation of tuberculomas.**[**16**]**

The present case was an isolated case of brainstem tuberculomas. This case provides a unique diagnostic challenge as the presenting features can easily be misinterpreted to be related to meningitis with right VIth cranial nerve palsy as a false localizing sign. Due to its location, posterior fossa tuberculomas can often be difficult to diagnose and pose a greater risk to the patient's life. The patient was treated with intravenous dexamethadone and ATT (HR2E) regimen. The patient showed dramatic improvement within one week of treatment and was discharged on 12^{th} day of her treatment. The patient was discharged on ATT and oral steroid in tapering dose for 1 month. At one month follow up, the patient was asymptomatic, was responding to treatment and has no side effect. Early recognition and initiation of appropriate treatment can lead to excellent outcomes as highlighted in the present case.

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