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Isolated 3rd Nerve Palsy Presenting in a Background of Multiple Cerebellar Tuberculoma with Tubercular Meningitis

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Abstract

Tuberculous meningitis (TB meningitis) is a subacute or chronic meningitis with diverse manifestations. Isolated oculomotor nerve palsy and with multiple cerebellar tuberculomas as initial manifestation is rare and uncommon.

We report a rare case of oculomotor nerve palsy associated with multiple cerebellar and cerebral tuberculous granuloma associated with mild meningoencephalitis

A 25-year-old male was brought to the emergency department in a mild confusional state with short 2 days history of fever. He also gave a history on one episode of convulsion.

Clinical examination revealed isolated left-sided 3rd nerve palsy with complete ptosis diplopia and anisocoria with mild meningism.

Subsequently His reports-GAD-CONTRAST MRI WITH SPECTROSCOPY with MRI-Spectroscopic peaks of lipids strongly indicated tubercular etiology.

spinal fluid was appropriately tubercular in nature

He was immediately started on 4 anti-tuberculous drugs regimes and anti-epileptics

He became normally oriented with resolution of 3rd nerve palsy and seizure free within 3-4 weeks of therapy.

Patients with tuberculosis meningitis presents with abrupt onset oculomotor nerve palsy, rapid diagnosis should be undertaken and proper treatment initiated, as outcome and prognosis is time dependent.

Introduction

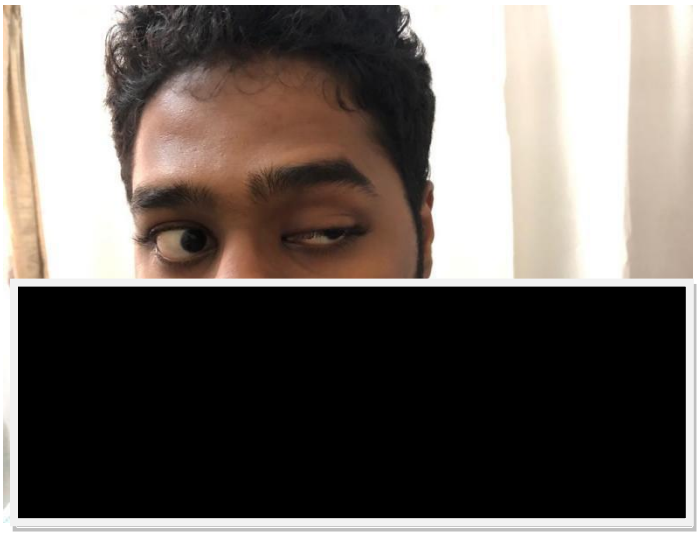
Tuberculous meningitis is a chronic disease, and cranial nerve palsies are common manifestations. Neuro-ophthalmic involvement, a part of its presentation spectrum, is important, and numerous reported neuro-ophthalmologic complications are combinations of oculomotor palsies, pupil abnormalities, disc changes suggestive of papillitis, papilledema, or optic atrophy and choroidal tubercles[(1)]. It is always necessary to take tuberculous meningitis into consideration when an abrupt deterioration of a neuro-ophthalmic nature is noted, because early diagnosis and treatment are important.

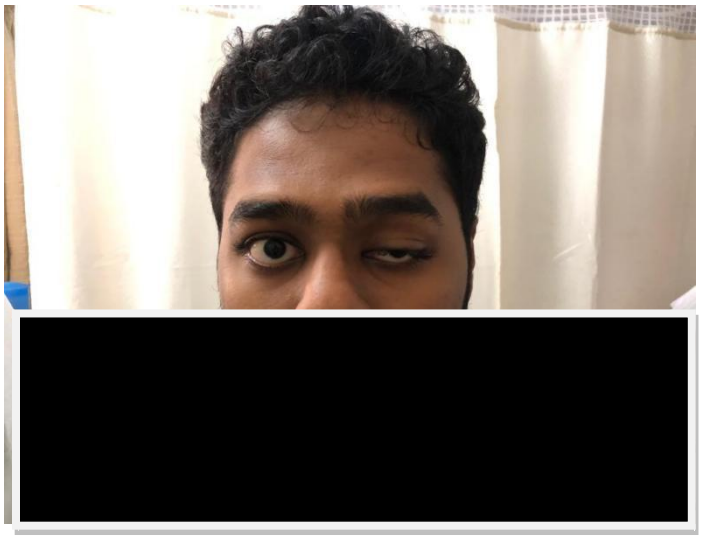
Case Report

A 25-year-old male, with no known comorbidities, was brought to the Emergency of

our hospital in a mild confusional state for 2 days. On presentation he was obtunded, confused and unable to recognize people, objects or awareness of his surroundings along with word-finding difficulty. Clinical examination revealed an isolated left-sided 3rd nerve palsy with complete ptosis diplopia and anisocoria with mild meningism.

A provisional diagnosis of meningitis was made and he was initially started on intravenous antiviral, fourth generation cyclosporine and vancomycin. CSF analysis results along EEG and MRI- contrast of brain with spectroscopy gave a firm diagnosis of MULTIPLE CEREBELLAR TUBERCULOMA and cortex ASSOCIATED WITH TUBERCULAR MENINGOENCEPHALITIS.





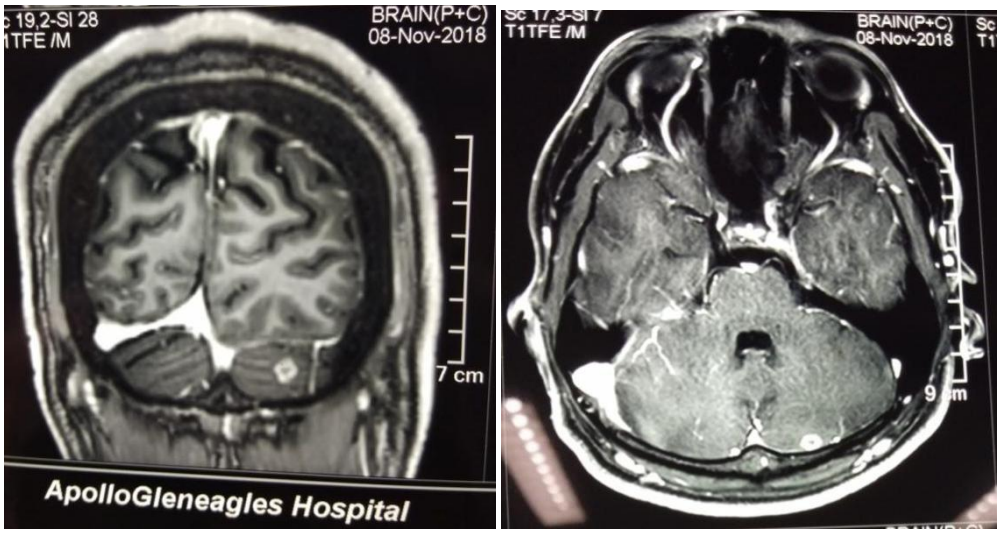
Complete Left occulomotor nerve palsy

Laboratory investigations:	
MRI of the brain with gadolinium contrast	multiple ring enhancing lesions in the left cerebellar hemisphere, left occipital lobe and left paratrigonal white matter, along with leptomeningeal enhancement. - possibility of Tuberculous meningitis with multiple tuberculomas
CSF analysis Glucose Protein WBC Neutrophils Lymphocytes RBC MTB DNA detection with Rifampicin susceptibility Gene Xpert Acid Fast Stain Gram stain	 39 mg/dL 275 mg/dL 20 00 100 Not found Not detected AFB not found No Gram negative or Gram positive bacteria seen in the smear.
EEG	The background activity is formed by high amplitude mixed theta/delta waves. - suggestive of diffuse encephalopathic pattern -
Comprehensive CSF panel	Nothing was detected.
Herpes Simplex Antiboides IgG (1+2) Herpes Simplex Antibodies IgM (1+2)	Negative Negative
Dengue NS1Antigen	Negative
Dengue Serology IgM Dengue Serology IgG	Non-reactive Non-reactive
EBV Viral capsid Ag IgM EBV Viral capsid Ag IgG	Negative Reactive

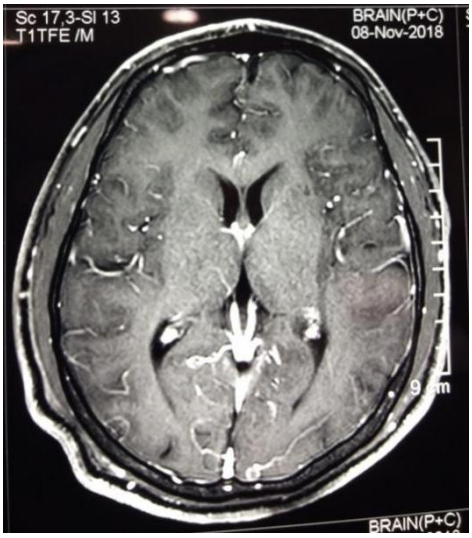
Mantoux test- negative and Chest X-ray – Normal

Cysticercal serology – negative

MR spectroscopy (MRS)-Spectroscopic peaks representing lipids and glutamate/glutamine (Glx) showed a peak that was well defined



MRI brain with Gadolinium contrast showing ring enhancing lesion in the left cerebellum



MRI brain with Gadolinium contrast showing ring enhancing lesion in left occipital pole

Conclusion

When patients with features of meningitis/ meningism presents with an abrupt onset of oculomotor nerve palsy, a strong possibility of tuberculosis should be considered and proper treatment initiated quickly as prognosis is critically dependent on the timing of adequate treatment.

In our opinion although healthy people may acquire this pathology but it's usually those who are severely immune-incompetent who are more vulnerable.

MRI-CSF study along with MR spectroscopy (MRS)-and EEG still remain important tools for quick diagnosis especially in endemic areas.

Discussion

Isolated central nervous system (CNS) tuberculoma is a rare disease associated with high morbidity and mortality. Tuberculomas is also a rare presentation of active TB and accounts for about 1% of cases CNS tuberculoma accounts for 5–10% of intracranial space occupying lesions in the developing world. The incidence is varying between 2.3% to 5%

Tuberculomas (MRI) were classically described as round masses well circumscribed, compressing surrounding brain tissue with edema between 2 cm and 10 cm in diameter. Remarkably there were minimal surrounding edema in our case - rings or nodular-enhancing lesions with only mild oedema and mass effect. This patient's lesion failed to appear on a CT scan. Tuberculous meningitis is a feared manifestation of tuberculous infection, because it is often difficult to diagnosis, requires a long course of therapy, and is associated with significant morbidity and mortality. Its most common signs and symptoms include fever, headache, changes in mentation, and meningismus in most patients. Other signs include focal neurologic deficits, such as, cranial nerve palsies, paresis, seizures, and diminished cognition. Ophthalmic pathologies have also been reported, and its complications include; conjunctivitis, third or sixth nerve palsies, choroidal tuberculoma, homonymous hemianopia, and nystagmus. Involvement of the oculomotor nerve can occur due to basal meningitis due to the long course of this nerve in the base of brain, due to vasculitis in the arteries supplying the midbrain region, or due to a tuberculoma situated in the midbrain readily apparent on MRI scan with contrast media.

The disease is categorized by- fever, malaise, headache without cranial nerve impairment; single cranial nerve impairment due to basilar disease, the presence of paresis and focal seizures along with an encephalopathic features and marked neurologic impairment, including multiple cranial nerve palsies, hemiparesis, or paraplegia - this disease stage has a high rate of neurologic sequelae or death despite therapy. Moreover, third nerve and optic nerve involvement are also significantly associated with tuberculous meningoencephalitis stage. Generally, tuberculous meningoencephalitis is associated with neuro-ophthalmic features, and is more common in the elderly. In the present case, due to a stuporous mental status, the patient was diagnosed as having stage 3 disease. Ptosis and external ocular movement limitation due to oculomotor nerve impairment also occurred in this patient. The majority of patients with ocular tuberculosis require systemic therapy. However, neurologic sequelae may remain despite proper therapy

especially in cases of stage 3 tuberculous meningitis. Thus, the prognosis of tuberculous meningitis is related to the timing of the initiation of appropriate therapy. Delays in diagnosis and treatment result in poor prognoses and severe neurological sequelae.

References

1. BMJ Case Rep. 2013; 2013: bcr2013009965.Fariba Binesh,1 Shokouh Taghipour Zahir,1 and
2. No Shinkei Geka. 2005 Sep;33(9):919-23- [A case of cerebellar tuberculoma]- Tanioka D1, Abe T, Ikeda H, Kushima M.
3. Infectious Diseases in Clinical Practice: January 2011 - Volume 19 - Issue 1 - p 72-74Agrawal, Amit MCh1; Kakani, An and MCh1; Mahajan, Satish N. MD2; Vagha, Sunita J. MD3; Acharya, Sourya MD2
4. Isolated cerebellar tuberculoma mimicking posterior cranial fossa tumour-Fariba Binesh1, Shokouh
5. Taghipour Zahir Taghi Neuroradiol J. 2015 Jun; 28(3): 294–302-Humberto Morales, corresponding author1 David Alfaro,2 Carlos Martinot,2 Nicolas Fayed,3 and Mary Gaskill-Shipley
6. Centers for Disease Control and Prevention Extrapulmonary tuberculosis cases and percentages by site of disease: reporting areas. Atlanta, GA: CDC, 2005
7. Rate of resolution of histologically verified intracranial tuberculomas-Villoria MF, de la Torre J, Fortea F, Munoz L, Hernandez T, et al. (1992)
8. Ophthalmological aspects of tuberculous meningitis, Desai HG, Anklesaria ED; J Indian Med Assoc.1967 Nov 1; 49(9):429-32.
9. Poonnoose SI, Rajshekhar V Johnson RT, Griffin JW, McArthur JC. Current therapy in neurologic disease. 7th ed. Philadelphia: mosby; 2005. pp. 158–160.
10. Neurological complications of tuberculosis: some unusual manifestations. Kocen RS, Parsons M; Q J Med. 1970 Jan; 39(153):17-30.