Isolated Oculomotor Nerve Palsy – A Rare Initial Manifestation of Tuberculous Meningitis

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Abstract
Tuberculous meningitis (TBM) is a sub-acute / chronic meningitis known for its diverse manifestations which may lead to delayed diagnosis. An isolated oculomotor nerve palsy as an initial presentation of TB meningitis is quite rare. One such case has presented here; A 18 year female presented to us with ptosis of the left eye. Complete neurological examination revealed it to be a case of isolated 3rd cranial nerve palsy. Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) brain revealed no significant abnormality. Cerebrospinal fluid (CSF) analysis was done and diagnosis of Tuberculous Meningitis was confirmed. This case report focuses on the fact that tuberculous meningitis should be included in the differential diagnosis of isolated oculomotor nerve palsy.

Introduction
Tuberculous meningitis is common infection of the central nervous system particularly in developing countries like India where Tuberculosis is so rampant. Early diagnosis and treatment are very vital key factors as any delay in management can be potentially hazardous in the form of neurological sequelae and even death. This disease entity has very variable modes of presentation ranging from simple headache to frank altered sensorium. Isolated oculomotor nerve palsy is such a rare presentation of tuberculous meningitis. This uncommon presentation should be kept in mind whenever such case is encountered by clinicians.

Case Report
A 20 year old female came to our hospital with gradual onset progressive drooping of eyelid of the left eye for last 20 days (Figure 1). She also complained of binocular diplopia. She observed that diplopia increased on right gaze. She did not have headache, fever, nausea, vomiting, seizure, altered sensorium and orbital pain. She denied any prior illness like diabetes mellitus, hypertension and thyroid disease. Her vitals were normal. Neurological examination of the patient revealed presence of isolated left third nerve palsy (ptosis, pupillary dilatation, absence of light reflex, loss of extraocular movements attributed to third cranial nerve). Rest of the examination was within normal limit.

Routine laboratory investigations including complete blood counts, liver and renal function tests were within normal limit. Thyroid function tests, C-reactive protein and Anti-nuclear antibodies were within normal range. Chest X-ray and ultrasonography abdomen were normal. MRI brain revealed slight ventriculomegaly. Lumbar puncture was performed because of presence of this slight ventriculomegaly. Examination of cerebrospinal fluid (CSF) showed cell count of 104/mm³ (lymphocytes 78%, neutrophils 18%, monocytes 4%), protein 115 mg/dl and sugar level of 30 mg/dl. Gram negative and Ziehl Neelsen staining for Acid fast bacilli were negative. Polymerase chain reaction for tuberculosis came to be positive.

Based on the above mentioned CSF findings, patient was put on anti tubercular therapy (rifampicin, isoniazid, ethambutol and pyrazinamide) in appropriate doses. Adjunctive steroid was also given in standard dose. After two weeks of therapy ptosis improved. A second CSF study was performed on 21st day of therapy which revealed improvement in parameters (Table 1).

Discussion
Whenever a case of an isolated oculomotor nerve palsy is encountered, a careful search for the common causes should be sought which include brain stem infarct, multiple sclerosis, tumours, aneurysms, cerebral herniation, cavernous sinus thrombosis, carotid cavernous fistula, diabetes mellitus, Tolosa hunt syndrome, myasthenia...
However detailed history, neurological examination and relevant neuroimaging studies can exclude most of them. TB meningitis often presents as headache, fever, stiff-neck, mental changes, motor weakness and cranial nerve palsies. The findings of unilateral isolated 3rd cranial nerve palsy is quite rare (2.2%). CSF analysis is the cornerstone in making the diagnosis. AFB staining is usually negative however CSF culture remains the gold standard. Real time automated nucleic acid amplification techniques (XPERT MTB / RIF assay) are also diagnostic options. Imaging studies (CT / MRI) should be done to rule out other etiologies and also to look for any complications (hydrocephalus).

The prognosis of TB meningitis depends on the rapidity with which ATT (anti tubercular therapy) is initiated. Delay in institution of therapy result in neurological sequelae. Therefore empirical ATT may be instituted when TBM is of high clinical suspicion.

This case report highlights that TB meningitis should be included in differential diagnosis of isolated unilateral third cranial nerve palsy.

References