# A very young patient with Tubercular Meningitis and its complications

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**Abstract**

A case report on a successful management of an eight months old boy with Tubercular Meningitis with Multiple Tuberculoma in Brain with Obstructive Hydrocephalus with Left sided Lower motor neuron type Facial Palsy with Right Sided Hemiparesis.

Tuberculous meningitis (TBM) is Mycobacterium tuberculosis infection of the Brain Meninges.[1,2] In TBM inflammation occur mainly in the base of the brain and when the inflammation affect the brain stem subarachnoid area, cranial nerve roots then symptoms may occur like space-occupying lesions.[3,4] TBM is more common in children than in adults, especially children aged 0-5 years.[5] In children central nervous system tuberculosis usually presents as tubercular meningitis, post-tubercular meningitis hydrocephalus, and rarely a space-occupying lesions known as tuberculomas.[6] TBM accounts for 2–5% of all active cases of Mycobacterium tuberculosis.[7] Pulmonary infection coexists in 25–83% of TBM.[8-10] Predominately primary CNS infection is found in children and leptomeningeal infection presents as meningitis, cranial nerve (CN) palsies (most commonly CN 2, 3, 4, and 7), and communicating hydrocephalus.[11]

DOI: https://doi.org/10.3329/nimcj.v10i2.45437
Northern International Medical College Journal Vol. 10 No. 2 January 2019, Page 400-401

## Case Report

Surjo, an eight months old boy, only issue of his nonconsanguineous parents, well immunized till date was admitted in to Dhaka Shishu Hospital with the complaints of

- Inability to move the right sided limbs for one and half months
- Deviation of the angle of the mouth towards the right for same duration
- Development of a nodular swelling on the right side of the neck for same duration.

According to the statement of mother the child had previous history of high-grade intermittent fever about two months back and single episode of generalized tonic clonic seizure, lasted for 3-4 minutes on the 2nd day of fever. For that, he was admitted into local Chandpur Sadar Hospital and was diagnosed as a case of meningitis, and was treated there for ten days with Injection Ceftriaxone.

There is no history of similar types of illness in the family or in the locality; he had no history of contact with TB patients.

Mother was on irregular antenatal checkup. His birth history was uneventful. He was on exclusive breast feeding up to six month of age. Then after formula milk was added 3 times a day (60 ml water + 2-scoop milk powder) with a caloric value of 120 kcal/day.

His milestone of development was age appropriate prior to this illness.

His father is a barber; there are 4 family members, live in a kachcha house, drinks tube well water and uses sanitary latrine. His father's monthly income is 10,000 takas per month.

On examination the child was conscious and alert but irritable, mildly pale, afebrile, anicteric; having wide open fontanel, measuring about 7cmx6cm, bulged and tensed.

Features of left sided facial nerve palsy present in the form of absence of forehead wrinkling, inability to eye closure and loss of nasolabial fold on the left side and deviation of the angle of the mouth to the right side with no swallowing difficulty or drooling.

BCG mark present. Regarding vitals-pulse: 96/min, R/R: 40/min, Temp.-98.4$^0$F and BP-80/60mm of Hg. He was moderately wasted and

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stunted with single supraclavicular lymphadenopathy. Crepitation present over the right lung field.

He had right sided hemiparesis, hypertonia, hyperreflexia and some involuntary movement was present on the right side of the body. His spine was normal and Fundoscopy showed mildly pale fundus.

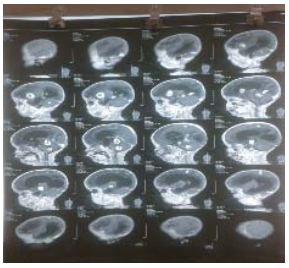
We provisionally diagnose the patient as Meningitis with sequelae with lymphadenopathy with Secondary malnutrition. Differentially we thought of this was a case of

- ICSOL (? Malignancy) with metastasis with lymphadenopathy with Secondary malnutrition
- Tuberculous meningitis with lymphadenopathy with Secondary Malnutrition

## Investigations

- X ray chest showed - Homogeneous opacity occupying the right upper and mid-zones

- MRI of brain showed multiple rim enhancing SOL in both halves of cerebral and cerebellar hemisphere (?Tuberculoma) with Tri-ventricular Obstructive Hydrocephalus.



Saggital section

Coronal section

- Gastric Lavage for Gene Xpert for MTB was Positive.
- Cirvical Lymph node Biopsy: Caseation Necrosis, suggestive of Tuberculosis.
- USG of the Brain: Cortical atrophy at the frontal region, Ventricular Index is 54% which is severe in form, non-communicating type venticulomegaly and obstruction at Aqueduct of Sylvyus.

Therefore the **final diagnosis** was Multiple Tuberculoma in brain with Obstructive Hydrocephalus with Left sided Lower motor neuron type Facial Palsy with Right Sided Hemiparesis with Secondary Malnutrition.

Then the following treatment was given

1. Inj. Ceftriaxone- 500 mg I/V once daily + Inj. Gentamycin 15 mg I/V twice daily for 7 days
2. **Anti-TB drugs** (Intensive Phase -2 Months- 3FDC (fixed dose combination) 1 tab +Tab Ethambutol, daily then Continuation Phase -10 Months- 2 FDC 1 tab daily)and
3. **Tab Prednisolone-** 2mg/kg/day for 4 weeks, then tapering over 2 weeks
4. **Ventriculoperitoneal shunt** surgery.

Then patient was kept under follow up Monthly for initial 3 months, then at 6 months and at the end of Anti-TB drugs.

Regarding the prognosis of this patient during our 2nd follow up we found that he was improving with our treatment.He was recovered from facial palsy with the early stage of treatment. Therefore, we are very much hopeful for his further improvement at the end of the treatment course.

Surjo, before and after starting Anti-TB Drug and Shunt surgery

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