



A Case Of Intramedullary Spinal Tuberculoma Presenting as Acute Transverse Myelitis

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Abstract :

The literature contains only few reports of spinal cord tuberculosis. Even more unusual is a typical localized transverse myelitis of tuberculous causation. Tuberculous transverse myelitis is thought to be due to abnormal activation of the immune system against the spinal cord. Other suspected mechanisms are the direct invasion by the bacillus and the toxic effect of antituberculous drugs. Here we present a case history of a 13 years old boy who presented with acute transverse myelitis due to an intramedullary spinal tuberculoma and had marked clinical improvement and neurologic recovery after treatment with anti tuberculosis treatment.

Keyword : Transverse myelitis, Tuberculosis, Tuberculoma, Methylprednisolone, Anti-tuberculous therapy

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ABSTRACT

The literature contains only few reports of spinal cord tuberculosis. Even more unusual is a typical localized transverse myelitis of tuberculous causation. Tuberculous transverse myelitis is thought to be due to abnormal activation of the immune system against the spinal cord. Other suspected mechanisms are the direct invasion by the bacillus and the toxic effect of antituberculous drugs.⁽¹⁾ Here we present a case history of a 13 years old boy who presented with acute transverse myelitis due to an intramedullary spinal tuberculoma and had marked clinical improvement and neurologic recovery after treatment with anti tuberculosis treatment. **Key words** – Transverse myelitis, Tuberculosis, Tuberculoma, Methylprednisolone, Anti-tuberculous therapy

INTRODUCTION

Acute transverse myelitis is an inflammatory disorder of the spinal cord, characterized by acute or subacute onset of paraparesis, bilateral sensory deficit, and impaired sphincter

function. Also characteristic are a spinal segmental sensory level and the lack of clinical or laboratory evidence of spinal cord compression. *Mycobacterium tuberculosis* is a very rare cause of transverse myelitis. An abnormal activation of the immune system against the spinal cord is thought to be the main etiologic mechanism. Other suspected mechanisms are the direct invasion by the bacillus and the toxic effect of anti-tuberculous drugs.⁽¹⁾

Diagnosis is achieved through the patient's medical history and the analysis of cerebrospinal fluid, magnetic resonance imaging of the spinal cord, and bacteriological confirmation of tuberculous infection. Usually these patients are not amenable to routine pulse steroid therapy but show very good response to Anti-tuberculous therapy.⁽²⁾

This is a case of a 13 years old boy who got admitted with features of acute transverse myelitis which turned out to be due to an intramedullary spinal cord tuberculoma.

was 82/min, respiratory rate was 16/min and single breath count was 19. Central nervous system examination revealed that higher mental functions were normal and all the cranial nerves were intact. Motor system examination showed that upper limbs were normal. Lower limbs showed no obvious wasting but with hypotonia and power on the right leg was 0/5 and left leg was 1/5. Deep tendon reflexes were absent in both lower limbs and plantar reflex on both sides showed no response. Beevor's sign was positive. All sensations were diminished below T10 level and bladder was incontinent. There were no cerebellar, extrapyramidal or meningeal signs. Fundus examination was normal. Other systemic examinations were within normal limits. Routine blood investigations were within normal limits except for ESR showing 36mm/hr. MRI was taken on the day of admission which came with a picture suggestive of Acute Transverse myelitis at D10-D12 level. The patient was started on intravenous Methylprednisolone 1gram/day.

CASE REPORT

A 13 year old boy got admitted with acute onset, non-progressive weakness of both lower limbs, associated with diminished sensations below waist, with the history of urinary incontinence of 3 days duration. Patient had no history suggestive of upper limb or cranial nerve involvement. No history of fever, vomiting, loose stools or cough with sputum. No history of trauma, seizures, headache, loss of consciousness or backache. No history suggestive of similar episodes in the past, contact with Tuberculosis, recent vaccination, drug intake or dog-bite. On examination the patient was conscious, co-operative, ill-nourished, afebrile and there were no neurocutaneous markers. Blood pressure was 102/74 mm of Hg, pulse rate



Figure-1 MRI Spine showing Transverse myelitis at D10-D12 level

Patient showed no signs of clinical improvement even after 4 days. Then we proceeded with MRI contrast study of spinal cord which showed well defined intramedullary ring enhancing lesions at D10 & D12 levels suggestive of either tuberculosis or neurocysticercosis.

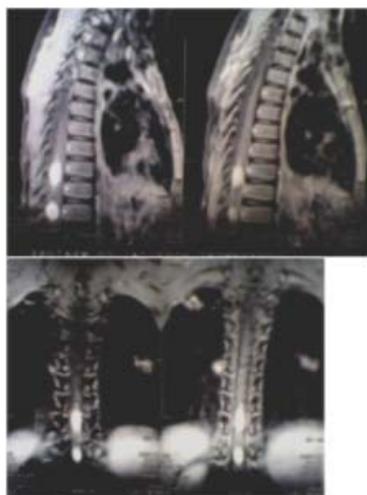


Figure-2 MRI contrast showing well defined intramedullary ring enhancing lesions at D10 & D12 level

A close diagnosis slightly in favour of neurocysticercosis was made, since sputum AFB was negative and chest X-ray was normal. Patient was started on albendazole along with steroids. The patient did not show any clinical improvement on treatment with Albendazole for 1 week. Meanwhile a CT brain was taken to rule out intracranial lesions which showed multiple space occupying ring enhancing lesions.



Figure-3 Multiple intracranial space occupying ring enhancing lesions

Serum cysticercal antibody was negative. A mantoux test was done which turned out to be positive (10.4 mm). CSF analysis showed increased proteins (110 mg/dL) with mild leucocytosis (13 cells/ μ L). It prompted us to review our diagnosis as intramedullary spinal tuberculoma presenting as acutetransverse myelitis. Patient was started on category 1 ATT and patient began showing gradual signs of recovery. After 3rd dose of ATT, lower limb weakness started improving and patient was able to walk and bladder was continent at the time of discharge. Patient was under regular follow-up and a repeat MRI spine with contrast was taken after 6 months of anti-tuberculous treatment. It showed complete resolution of tuberculoma at D12 level and partial resolution at D10 level.



Figure-4 MRI Spine taken after 6 months of ATT showing complete resolution of tuberculoma at D12 level and partial resolution at D10 level

DISCUSSION

Intramedullary spinal tuberculomas (IMT) are rare even in geographical areas where tuberculosis is endemic. The first report of IMT was by Albercrombie in 1828.

A total of 148 cases were reported in two reviews. Two cases of IMT were reported in patients with AIDS⁽³⁾. Most of the patients with IMT were in younger age group, the average in one series being 23 years.

Intramedullary spinal tuberculosis is almost always secondary to pulmonary tuberculosis but some cases may present only with isolated extrapulmonary forms. Concurrent occurrence of intracranial tuberculomas along with intramedullary spinal tuberculoma, though possible, is rare. MRI especially with Gd-DTPA has been significantly helpful in the diagnosis of IMT⁽⁴⁾. Tuberculoma usually regresses after specific antituberculous treatment. If diagnosed early and treated, surgical interventions can be avoided.⁽⁵⁾

Incomplete transverse myelitis (ITM) of unknown origin is associated with high rates of morbidity and mortality. One prospective, open-label study was undertaken to determine whether antituberculous treatment (ATT) might help patients with ITM whose condition continues

to deteriorate despite receiving IV methylprednisolone treatment. The study consisted of 67 patients with steroid-refractory ITM in whom *Mycobacterium tuberculosis* (MTB) was suspected clinically and in whom other known causes of myelopathy were excluded. The study occurred from January 2003 to June 2010. Patients underwent trial chemotherapy with ATT. Efficacy was assessed by the American Spinal Injury Association (ASIA) scoring system, the Barthel Index (BI) and the Hauser Ambulation Index (AI) at baseline, 12 months, and 24 months, using magnetic resonance imaging (MRI). Of the 67 patients enrolled, 51 were assessed and 16 withdrew. At 24 months, 49 patients experienced benefits as indicated by significantly increased ASIA and BI scores. The Hauser AI index also improved with markedly decreased abnormal signals in spinal cord MRI over time. The results from this prospective study provide beneficial clinical and MRI data on the efficacy of ATT in ITM patients and suggests mycobacteria may be an important and neglected cause of myelitis.⁽²⁾

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