

Spinal Intramedullary Tubercular Abscess

¹Saravanan Natesan, ²R Raghavendran, ³Vidya Narasimman, ⁴Deiveegan Kunjithapatham

ABSTRACT

Spinal intramedullary tubercular abscess is very rare. We present a 3-year-old boy, with subacute paraparesis and incontinence for 1 day. His MR imaging showed a contrast ring enhancing intramedullary lesion at D10-D12 with central T1-hypointense, T2-hyperintense core and cord expansion. He underwent laminectomy, evacuation of abscess, with antituberculous drugs and steroids postoperatively. There was pus evacuated intraoperatively showing positive acid fast bacilli, and the wall biopsy showed inflammatory cell infiltrate and no giant cell or granuloma formation. Child improved well and discharged well. This is a very rare case of intramedullary spinal tubercular abscess satisfying all of Whitner's criteria.

Keywords: Intramedullary abscess, Spinal, Tuberculous abscess, TB spine.

How to cite this article: Natesan S, Raghavendran R, Narasimman V, Kunjithapatham D. Spinal Intramedullary Tubercular Abscess. *J Spinal Surg* 2014;1(1):39-40.

Source of support: Nil

Conflict of interest: None

INTRODUCTION

Intramedullary spinal tubercular abscess is very rare. A total of 77 cases have been reported, since the original case documentation by Hart. Various organisms have been isolated but *Mycobacterium tuberculosis* (TB) has been demonstrated in only four cases till date worldwide.¹⁻⁴ We present a rare case of spinal intramedullary tubercular abscess in a young boy who had a subacute paraparesis following fever and showed features of intramedullary tubercular abscess satisfying all of Whitner's criteria.⁵

CASE REPORT

A 3 years old boy was admitted with fever for 20 days, and a vague poorly localized pain in both legs for 5 days, progressed to flaccid weakness of both lower limbs for 3 days. He had urinary incontinence and dribbling for 1 day before admission. There was no history of trauma, no loss of weight or appetite.

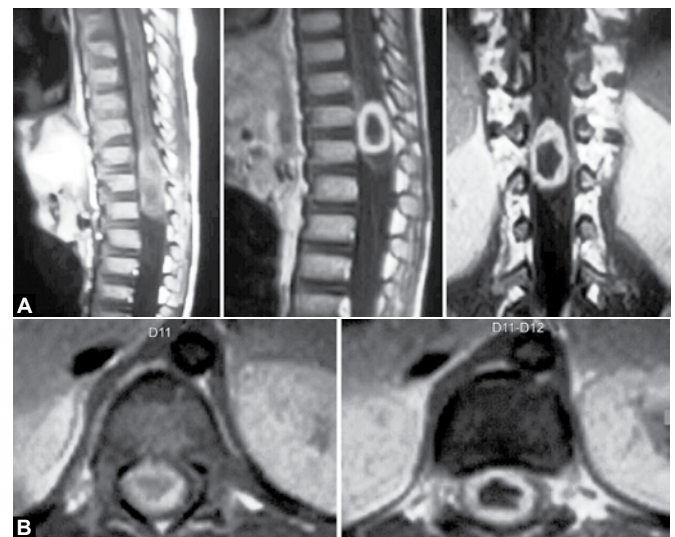
The general physical examination was normal. Neurologically, he had spastic paraparesis with weakness of 3/5 on right and 2/5 on left with extensor plantar and brisk reflexes bilaterally, sensory numbness below L1 and he was catheterized for dribbling of urine. There was no spinal tenderness and rest of physical examination showed no abnormality.

The blood investigations were normal. Chest X-ray was negative for pulmonary lesion. Mantoux was equivocal (6 × 9 mm). HIV Elisa was negative. The Magnetic resonance imaging (MRI) spine showed a contrast ring enhancing intramedullary space occupying lesion at D10-D12 with central T1-hypointense, T2-hyperintense core with cord expansion and a central syrinx above. Provisional diagnosis of intramedullary abscess was made (Figs 1A and B).

He underwent D10-D12 laminectomy and after dural opening, a median myelotomy done. Thick creamy pus came out which was aspirated sent for analysis. There was no granulation or caseation. Biopsy was taken from the abscess wall.

The pus showed *Mycobacterium tuberculosis* on AFB staining, and culture was negative for pyogenic organisms. The abscess wall confirmed necrotic foci with plenty of dense acute inflammatory cell infiltrates including neutrophils, lymphocytes, but no granuloma formation was seen (Figs 2 to 4).

Postoperatively treated with antituberculous drugs and steroids, his power showed a good improvement with good



Figs 1A and B: MR images showing ring enhancing intramedullary lesion

¹Resident, ^{2,3}Assistant Professor, ⁴Professor

¹⁻⁴Department of Neurosurgery, Institute of Neurology, Madras Medical College, Chennai, Tamil Nadu, India

Corresponding Author: Saravanan Natesan, Resident, S2 75 Aravind Taikripa Apts., 2nd Main Road, Sadhasivam Nagar Madipakkam, Chennai-600091, Tamil Nadu, India, Phone: 9894308646, e-mail: saravanan.neurosurgeon@gmail.com



Fig. 2: Evacuation of pus intraoperatively

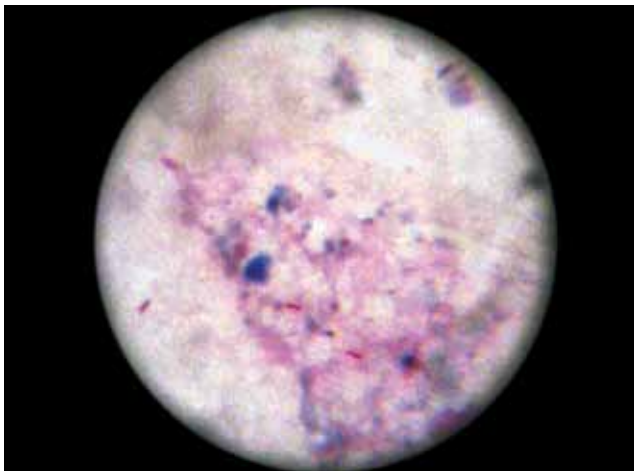


Fig. 3: Pus with Ziehl-Neelsen stain showing AFB positive bacilli

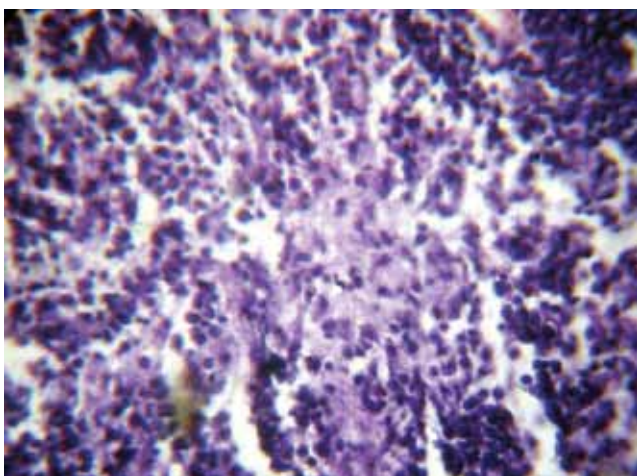


Fig. 4: Biopsy showing necrotic foci with inflammatory cell infiltrates including neutrophils, lymphocytes, plasma cells but no granuloma

bladder control. In follow-up for 4 months, he showed improvement to near normal motor power and sensory improvement.

DISCUSSION

Spinal intramedullary abscess is defined as an encapsulated collection of pus, containing tubercular bacilli without evidence of tubercular granulomatous reaction.^{6,7}

Whitner (1978)⁵ has proposed a set of criteria which all should be satisfied to define it a tubercular abscess as follows:

- Evidence of a true abscess formation, as confirmed during surgery or autopsy.
- Histological proof of presence of inflammatory cells in the abscess wall and absence of granuloma.
- Demonstration of AFB in the pus or abscess wall.

Tubercular abscess walls are usually devoid of epithelioid and giant cells which are characteristic of tuberculoma but, if present, they are not in the form of organized follicles. Tubercular abscess should be differentiated from cystic tuberculoma and, in the latter, the pus cyst contains yellowish fluid, and cyst wall has typical tuberculous pathology.^{7,8}

Spinal TB abscess are mostly secondary to pulmonary or systemic forms, especially in immune-suppressed individuals and present as very rare cases. They present with less toxic manifestations, but mostly with subacute compressive neurologic manifestations. An MRI is the investigation of choice. Surgery becomes necessary to relieve the pressure symptoms. Anti-tubercular treatment (ATT) and steroids are treatment of choice.

REFERENCES

1. Tacconi L, et al. Intramedullary spinal abscess: a case report. *Neurosurgery* 1995;37:817-819.
2. Ditullio MV. Intramedullary spinal abscess: a case report. *Surg Neurol* 1997;7:351-354.
3. Devi BI, Chandra S, Mongia S, Chandramouli BA, Sastry KVR, Shankar SK. Spinal intramedullary tuberculoma and abscess: a rare cause of paraparesis. *Neurology India* 2002;50(4):494-496.
4. Hoda MF, Prasad R, Singh VP, Maurya P, Singh K, Sharma V. Spinal intramedullary Tb abscess. *Indian J Tuberculosis* 2005;52: 211-214.
5. Whitner DR. Tuberculous brain abscess. Report of a case and review of the literature. *Arch Neurol* 1978;35:148.
6. Kumar R, Pandey CK, Bose N, Sahay S. Tuberculous brain abscess: clinical presentation, pathophysiology and treatment in children. *Child's Nerv Syst* 2002;18:118-123.
7. Babu ML, Shavinder MCh. Tubercular brain abscess. *Tubercular Abscess: A Diagnostic Challenge*. *JK Practitioner* 2002;9(4): 262-263.
8. Sinh G, Pandeya SK, Dastur DK. Pathogenesis of the unusual intracranial tuberculomas and tuberculous space occupying lesions. *J Neurosurg* 1968;29:149.