International Journal of Contemporary Pediatrics
Chaudhary S et al. Int J Contemp Pediatr. 2018 May;5(3):1134-1136
http://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291

DOI: http://dx.doi.org/10.18203/2349-3291.ijcp20181557

Case Report

A rare case of tuberculous spinal arachnoiditis

Suman Chaudhary, Ankit Chaurasia, Gunjan Kela Mehrotra*, Kewalkishore Arora, Yogesh Patel

Department of Paediatrics, SAMC and PGI, Indore, Madhya Pradesh, India

Received: 04 March 2018
Accepted: 28 March 2018

***Correspondence:**
Dr. Gunjan Kela Mehrotra,
E-mail: drgunjankela@yahoo.com

ABSTRACT

Central nervous system tuberculosis represents approximately 10% of extra pulmonary tuberculosis. However, spinal tuberculous arachnoiditis is a rare complication of CNS tuberculosis that can result in severe peripheral neurological deficit. We are reporting a case of 7-year-old male child of disseminated tuberculosis (pulmonary and spinal arachnoiditis) with nutritional anemia. We aim to illustrate the difficulties in the diagnosis and management of this potentially curable disease by reviewing the literature.

Keywords: Arachnoiditis, Spinal, Tuberculous

INTRODUCTION

Central nervous system tuberculosis represents approximately 10% of extra pulmonary tuberculosis.[1] However, spinal tuberculous arachnoiditis is a rare complication of CNS tuberculosis that can result in severe peripheral neurological deficit. Further tuberculous arachnoiditis and radiculomyelitis are the important causes of infectious spinal arachnoiditis.[2] The thoracic spinal cord is the most frequently involved site, followed by lumbar and cervical spinal cord.[3] We are reporting a case of 7-year old male child of disseminated tuberculosis (pulmonary and spinal arachnoiditis) with nutritional anaemia. We aim to illustrate the difficulties in the diagnosis and management of this potentially curable disease by reviewing the literature.

CASE REPORT

History and examination

A 7 year 3-month-old right handed male child presented to us with pain in the lower back which was sharp and progressively increasing and radiating to lower limb for 5 months with history of progressive leg weakness not associated with sensory disturbances, urinary hesitancy and urgency. Child had history of poor appetite and loss of weight noticed for 5-6 months. He became bedbound after the condition. There was an insignificant history of fall at 2 years of age.

On examination, Pallor was present. Kyphosis was noted and spinal tenderness at the level of T4-T5 with bilateral crepitation in chest. In CNS, higher mental functions were within normal limits. Tone in the leg was increased bilaterally, he had pyramidal weakness of the legs 3-4/5 on left, 3-4/5 on right with brisk reflexes and extensor plantar on both side with no other significant findings.

Investigations

Routine blood test showed anaemia with raised ESR. HIV serology was negative. Chest X-ray showed multiple heterogenous opacities in both lungs.

Sputum for AFB and CBNAAT were negative. Mantoux test was non-reactive. MRI - dorsolumbar spine of whole spine screening suggestive of clumping of intrathecal

nerve roots, to the periphery of the thecal sac from lower L4 level to S2 level suggesting Arachnoiditis (? tubercular).

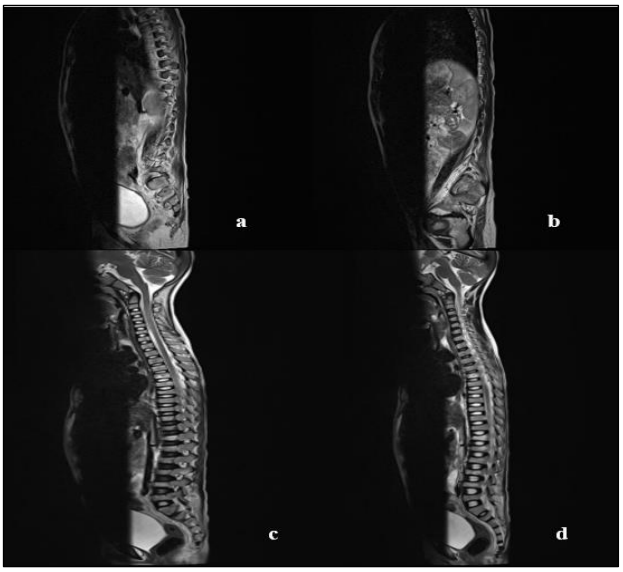

Figure 1: MRI spine.

Figure 1 is the T1 weighted sagittal image of whole spine screening suggestive of clumping of intrathecal nerve roots, to the periphery of the thecal sac from lower L4 level to S2 level suggesting Arachnoiditis (? tubercular). Incidentally detected filum terminale lipoma seen. Max thickness 2mm. There is evidence of generalised excess of fat seen in the extradural space, from L4 to S4 level, causing moderate narrowing of the thecal sac suggesting Epidural lipomatosis.

Filum terminale lipoma was also incidentally detected with maximum thickness 2 mm. There is evidence of generalised excess fat seen in the extradural space, from L4 to S4 level, causing moderate narrowing of the thecal sac suggesting epidural lipomatosis.

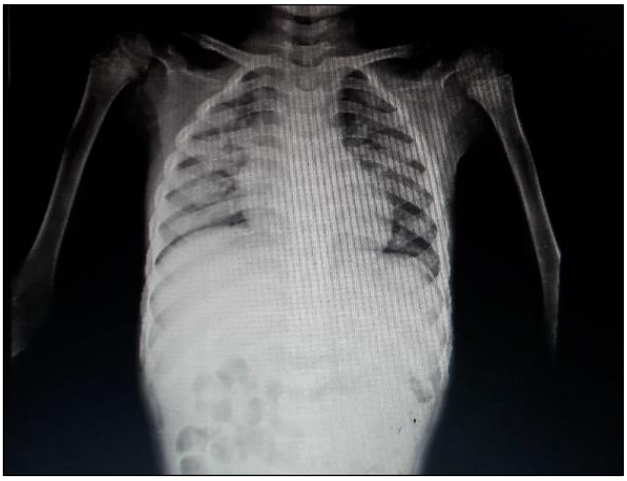

Figure 2: Multiple heterogenous opacities in both lungs.

Diagnosis

Disseminated tuberculosis (pulmonary and spinal arachnoiditis) with nutritional anaemia.

Figure 3: Improvement of neurological signs and symptoms.

Management

Child was treated with anti-tubercular therapy for 9 months, nutritional rehabilitation and physiotherapy. His neurological signs and symptoms were improved after treatment over next 48 hours. Over subsequent follow ups the child had almost normal gait with no residual impairment.

DISCUSSION

Tubercular infection of spine occurs in the form of tuberculous spondylitis, intradural tuberculosis, and tubercular myelitis in the decreasing frequency. Intradural tuberculosis has been variously termed as intradural extramedullary tuberculosis, spinal arachnoiditis and chronic adhesive arachnoiditis. It has been suggested that all these atypical forms of tuberculosis should be designated as tubercular radiculomyelopathy (TBRM).[4] There is unanimous agreement that spinal TB radiculomyelitis is a secondary TB lesion, although it may rarely occur primarily.[5] Secondary radiculomyelitis may

appear during the acute stage of the primary lesion or in variable periods after the onset of disease.[6]

TBRM passes through 3 stages.[7]

- Radiculitis: Inflammation of pia arachnoid with associated hyperaemia and swelling of roots
- Arachnoiditis: Progressive fibroblast proliferation and collagen deposition leading to nerve root adhesions to each other and pia arachnoid
- Adhesive arachnoiditis: Dense collagen deposition with encapsulation of atrophied nerve roots.

Spinal tubercular arachnoiditis is an inflammatory condition that involves the arachnoid lining along the spinal tract. This condition was previously termed adhesive arachnoiditis.[1] The literature shows that this clinical entity is uncommon in the developed countries, but is still commonly reported in south-east Asia, the Indian subcontinent, and South America and Africa.[8]

Treatment of spinal tuberculous arachnoiditis may be medical or surgical, mainstay of treatment is mainly medical. Surgery should be considered only when histopathological examination confirmation is required or there is evidence of spinal cord compression with neurological deficit or spinal instability.

Antitubercular therapy with a combination of drugs should be started once the diagnosis is established for 9-12 months.[9] High-dose corticosteroid is another efficient adjuvant medical treatment, either given orally or, rarely, via the intrathecal route.[10,11]

CONCLUSION

A possibility of tuberculous arachnoiditis should be suspected despite the absence of primary focus anywhere in the body, particularly in tuberculous endemic regions. Spinal tuberculous arachnoiditis could result in serious and permanent neurological deficit if it is left untreated. A high index of suspicion is important for early diagnosis.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Solanki GA. Spinal arachnoiditis, In James D, editor. Palmer manual of neurosurgery. London: Churchill Livingstone; 1996:769-774.
2. Medonca RA. Spinal infection and inflammatory disorders. In: Atlas SW, editor. MRI of the Brain and Spine. 3rd ed. Philadelphia: Lippincott Williams and Wilkins Publishers; 2002:1855-1969.
3. Poon TL, WS Ho, Pang KY, Wong CK. Tuberculous meningitis with spinal tuberculous arachnoiditis. Hong Kong Med J. 2003;9:59-61.
4. Wadia NH, Dastur DK. Spinal meningitides with radiculo-myelopathy: clinical and radiological features. J Neurol Sci. 1969;8:239-60.
5. Arseni G, Samitca DC. Intraspinal tuberculous granuloma. Brain. 1960;83:285-92.
6. Kozlowski K. Late spinal blocks after tuberculous meningitis. Am J Roentgenol Radium Therapy Nuclear Med. 1963;90:1220-6.
7. Vidyasagar C, Murthy HK. Spinal tuberculosis with neurological deficits. Natl Med J India. 1996;9:257.
8. Sridhar K, Ramamurthi B. Granulomatous fungal and parasitic infections of the spine. In: Menezes AH, Sonntag VK, editors. Priciples of spinal surgery, Vol 2. New York: McGraw-hill, Health professions Division; 1996:428-436.
9. Freilich D, Swash M. Diagnosis and management of tuberculous paraplegia with special reference to tuberculous radiculomyelitis. J Neurol Neurosurg Psychiatry. 1979;42:12-8.
10. Hernandez-Albujar S, Arribas JR, Royo A, Gonzalez-Garcia JJ, Pena JM, Vazquez JJ. Tuberculous radiculomyelitis complicating tuberculous meningitis. Clin Infect Dis. 2000;30:915-21.
11. Zuger A, Lowy FD. Tuberculosis. In: Scheld MW, Whitley RJ, Durack DT, editors. Infections of the central nervous system. 2nd ed. Philadelphia: Lippincott-Raven Publishers; 1997:428-36.

Cite this article as: Chaudhary S, Chaurasia A, Mehrotra GK, Arora K, Patel Y. A rare case of tuberculous spinal arachnoiditis. Int J Contemp Pediatr 2018;5:1134-6.