



SPINAL KOCH'S (POTT'S SPINE) UNUSUAL PRESENTATION IN A 8 YEAR OLD

Neurosurgery

Dr. Vishal Rokade MS, Neurosurgery DNB

Dr. Vashista Kothapalli* Resident, General Surgery *Corresponding Author

ABSTRACT

Extrapulmonary tuberculosis (TB) is not a rare condition.

Bone and joint involvement constitute 10% of extrapulmonary TB cases in which the spine is the most frequently affected site.

Pott's disease (PD) or spinal tuberculosis is not a rare condition which accounts for less than 1% of total tuberculosis (TB) cases.

It is the most common granulomatous disease of the spine, which is characterized by being chronic and slowly progressive. Affected patients typically present with back pain and other generalized symptoms such as malaise, frequent episodes of fever, weight loss.

Imaging studies such as CT (computed axial tomography), MRI (magnetic resonance imaging) are important aids in the diagnosis of Potts spine.

Pott's disease requires surgical treatment when

1- There is loss of sagittal alignment of the spine.

2- There is spread of an abscess in paraspinal tissues and the spinal canal with compression of the spinal cord or nerve root.

3- In cases of failed chemotherapy.

4- Progressive neurological deficit, despite ATT use.

There is a paucity of reports on spinal tuberculosis in children.

We report a case of a 8-year-old child, a diagnosed case of Potts spine on Anti Tubercular treatment presenting with difficulty in walking, inability to stand and back pain.

The disease progressed in spite of Anti Tubercular Treatment causing neurological deficits.

We want to stress on timely intervention for better outcome.

KEYWORDS

INTRODUCTION-----

Pott's disease or Koch's spine or spinal tuberculosis accounts for less than 1% of total tuberculosis cases.

It occurs primarily/secondarily to extra-spinal source of infection via the hematogenous route.

The spinal canal can be invaded by granulomatous tissue or abscess due to the direct spread of infection from the vertebral lesion, resulting in narrowing of the spinal cord, cord compression, and further developing neurologic complications such as paresis, paraplegia.

The thoracolumbar vertebra is the most common site of infection in Pott's disease, other sites in the spine can also be affected.

Back pain and deformity are the most prevalent presenting complaints. Systemic features such as fever and weight loss may present in Pott's disease.

Pott's disease is diagnosed on basis of clinical history, tuberculin skin test (Mantoux test), sputum acid-fast bacillus (AFB) testing, polymerase chain reaction (PCR) for *Mycobacterium tuberculosis* (MT), or interferon-gamma release assays.

Magnetic resonance imaging (MRI) is capable of probable diagnosis at an earlier stage and is the method of choice.

Microbiologic evaluation of respiratory specimens, as well as bone tissue or abscess samples, cultured and stained for acid-fast bacilli, will confirm diagnosis. Pharmacotherapy must be combined with surgery in patients with spinal cord or nerve root compression. Since last 60 years, there were remarkable evolution in management of spinal tuberculosis by early diagnosis and under the cover of the potent antitubercular chemotherapy.

There is a deficit of reports on the management of spinal tuberculosis in children.

The incidences of spinal tuberculosis in children as reported by MRC (British) are as follows - 58% of all diagnosed spine tuberculosis patients in Korea, 1/3 of diagnosed patients in Chennai, India, and 26% of diagnosed patients in Hong Kong.^{1,2}

Children with spine tuberculosis are brought to the hospital in clinically advanced stage by their parents.

Anatomically and physiologically, there are a lot of differences between children & adults.

Bones in children grow longitudinally and appositionally, and model during growth.

The destruction of bone in children is rapid and severe by the infection than that of the adults.

However, bone lesions in children heal and model much faster than those of the adults. The growth cartilage in children is relatively well preserved in the tuberculous lesions and it is radically excised during radical resection of the lesion.^{3,4}

Tuberculous spinal deformity in children can be corrected spontaneously during growth when the end-plate and apophyseal ring cartilage are preserved,^{4,9}.

Surgical management depends on the following two principles: debridement with spinal cord decompression and stabilization.

CASE REPORT-----

A 8 year old male child, issue of a non consanguineous marriage was brought with complaints of difficulty in walking and standing since 6 weeks.

He also complained of low back pain since 2 months.

He is a diagnosed case of Potts spine and is on anti tubercular drugs since August 2017 - Tab Rifampicin (@11 mg/kg/day), Tab Isoniazide (@15 mg/kg/day), Tab Combutol (@20mg/kg/day), Tab Pyrizinamide (@37.5mg/kg/day).

On presentation, patient was unable to stand without support.

Both lower limbs power was 1/5.

Both upper limbs power was 5/5.

Haemogram was suggestive of Microcytic hypochromic blood picture.

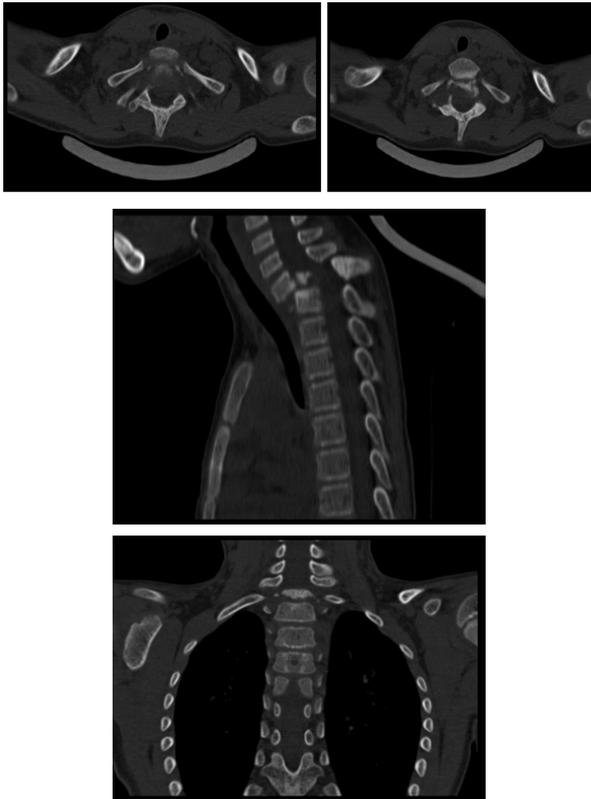
CT SCAN WHOLE SPINE was suggestive of

- Grade 3 Spondylolisthesis of C7 Vertebra over D1 Vertebra.
- Spondylitis with destruction of D1 Vertebra with focal involvement of C7 Vertebra.
- Tubercular Spondylitis of LV2, LV3 with para-vertebral collection.

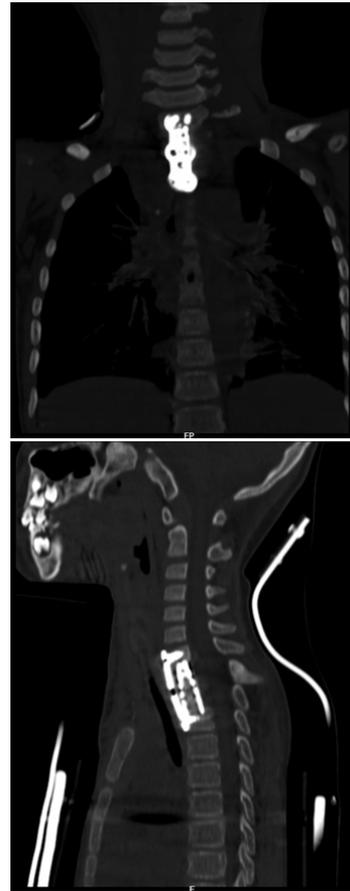
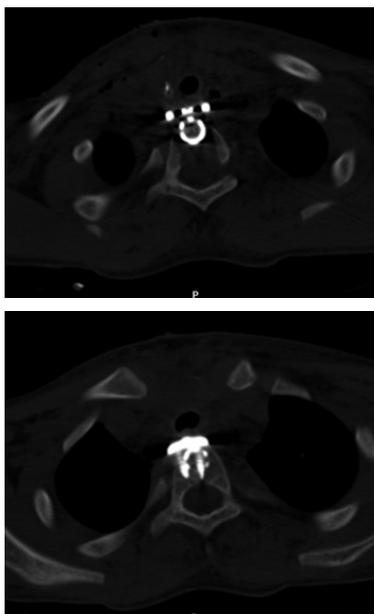
Child was given cervical traction preoperatively. Listhesis was reduced from grade 3 to grade 2 in 7 days with gradual increase in weight.

He was operated for D1-D2 Cordectomy and C7-D3 cervical fusion. Intraoperative findings were destroyed D1 vertebra, retropulsed on cord and Grade 4 anterior listhesis of C7 over D1.

Postoperative period was uneventful. On follow up, Child was able to walk with support. PRE OPERATIVE CT IMAGING



POST OPERATIVE CT IMAGING



CONCLUSION- The persisting issues related with spinal tuberculosis in children have been the delayed diagnosis and management because of delayed presentation for the treatment.

However, the recent improved nationwide health system and individual awareness of the disease our country made a significant change in the management.

Timely surgical intervention will help in preventing further deterioration and complications.

REFERENCES-

1. Kaila R, Malhi AM, Mahmood B, Saifuddin A. The incidence of multiple level noncontiguous vertebral tuberculosis detected using whole spine MRI. *J Spinal Disord Tech.*2007;20:78–81. [PubMed]
2. Upadhyay SS, Sell P, Saji MJ, Sell B, Yau AC, Leong JCY. 17-year prospective study of surgical management of spinal tuberculosis in children. *Hong Kong operation compared with debridement surgery for short-and long-term outcome of deformity. Spine (Phila Pa 1976)* 1993;18:1704–11. [PubMed]
3. Moon MS. Tuberculosis of spine—contemporary thoughts on current issues and perspective views. *Current Orthop.*2007;21:364–79.
4. Huang QS, Zheng CK, Hu YZ, Yin XI, Xu HZ, Zhang GY, et al. One-stage surgical management for children with spinal tuberculosis by anterior decompression and posterior instrumentation. *Int Orthop.*2009;33:1385–90. [PMC free article] [PubMed]