



VERTEBRAL TUBERCULOSIS FOLLOWED BY TRAUMATIC SPINE FRACTURE IN A CHILD -RARE CASE REPORT

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ABSTRACT

Background Vertebral tuberculosis following a spinal trauma is a rare identity presenting as extra-pulmonary TB associated with high degree of morbidity in a growing children. The objective of this report is to describe a paediatric case of traumatic spine fracture on the lower thoracic spine with tuberculosis disease. And thus show the importance of identifying the disease as soon as possible, because it is a rare and severe condition that can leave to serious sequelae. **Case summary** A adolescent boy presents to the orthopaedic OPD with the complaints of unable to walk, evening raise of temperature, loss of weight, deformity of spine since 3 months. Upon detail history, 3 months back child had a traumatic event following which he developed weakness of both the lower limbs. In the subsequent time he started developing evening rise of temperature, lethargy and loss of weight. His mother observed postural alteration, with constant pain in the middle back region with a deformity formation, unable to walk, inability to flex the lumbodorsal spine and pain on touching surrounding skin area. Clinical examination revealed that the child was pale, emaciated and afebrile with weight of 25 kgs. A tender gibbus was present over the dorso-lumbar region. Sensation of perianal region was intact with spasticity of both lower limbs. The bladder and bowel function were spared. No other external signs of inflammation were detected. The rest of the physical examination was non-contributory. No prior history of contact with the tuberculosis patient. Mantoux test and Sputum examination was done. Radiologic evaluation done in the form of radiograph and magnetic resonance imaging. **Conclusion** Spinal tuberculosis is haematogenous in origin, and usually follows pulmonary tuberculosis. The two conditions may occur concomitantly, as is commonly seen in young children. Spinal tuberculosis is usually associated with a poor nutritional status and a depleted immune response. In our patient the source of infection might have been from a latent focus in the hilar nodes of the lung, although the patient denied any previous history of tuberculosis. Possibly after severe trauma the patient's immunity was lowered this has led to spread of the tuberculosis infection and the vertebral fracture hematoma could have provided a nidus for infection.

KEYWORDS : Tuberculosis, Traumatic spine fracture, children

INTRODUCTION

The spine is the most common site of tuberculosis in the skeletal system.[1] The incidence of tuberculosis (TB) is increasing in both developing and developed worlds, and children, in particular, represent a high-risk group for acquiring the disease.[2]The destruction of bone and the resultant deformity not only present a problem of altered biomechanics as in rest of skeleton, spinal tuberculosis is further complicated by the presence of neural structures in the vicinity.[3] Vertebral tuberculosis following a spinal trauma is a rare identity presenting as extra-pulmonary TB associated with high degree of morbidity in a growing child.

Case History

A 13year old school going boy presents to the orthopaedic out patient department in Adichunchanagiri institute of medical sciences, mandya on stretcher with the chief complaints of unable to walk, evening raise of temperature, loss of weight, deformity of spine since 3months.child was accompanied by his mother.

Upon elaboration of history, 3 months back child had a history of fall from the tree while playing associated with sudden onset, intense local, progressive back pain, non-radiating in nature following which he developed weakness of both the lower limbs. the child was taken to a local doctor for native treatment.

In the subsequent time he started developing evening rise of temperature, lethargy and loss of appetite and weight. His mother observed that child is having postural alteration, constant pain in the lower back region,deformity of the spine,

unable to walk and restriction of spine movements. There was a past history of chronic cough and being treated with the medications. Child had no prior history of contact with the tuberculosis patient.



Figure no.1 shows Gibbus deformity of spine (marked with arrow)

Examination

Child was pale, emaciated and febrile with weight of 25 kgs. Upon inspection there was a loss of normal lumbar lordosis due to paraspinal muscle spasm. A tender gibbus was present over the dorso-lumbar region. There was no swelling noted in the groin or the lumbar triangle of petit. No sinus, scar, matted lymph nodes noted.

Upon palpation temperature was locally raised over the gibbus. Deep spinal tenderness was elicited over the D9 to L2 region. movements of the thoracic and the lumbar spine was

severely restricted. There was no wasting of thigh and calf muscles.

Neurological examination revealed increased tone of the muscles in the lower limb with brisk tendon reflexes. Babinski's sign was positive. Power of lower limb muscles were checked according to Medical Research Council Grading of motor power. Majority of lower limb muscles had a power of 1/5 to 2/5. No Sensory loss of perianal region noted. Bladder and bowel function were spared. The rest of the physical examination was non-contributory.

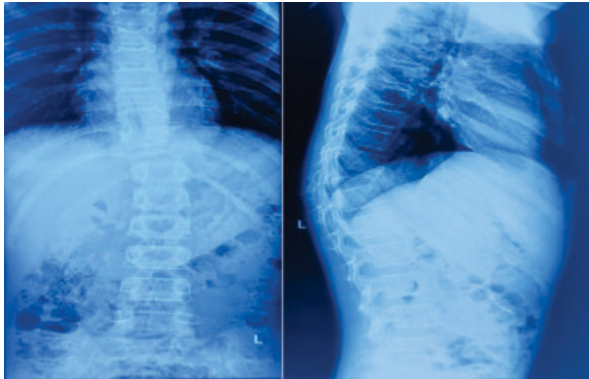


Figure No.2 AP and LATERAL radiograph of dorso-lumbar spine shows compression fracture of thoracic 11 vertebra with lateral translation and kyphotic deformity.

Diagnosis

Mantoux test was strong positive (15mm). Erythrocyte sedimentation rate and C reactive protein was raised in blood reports. Histopathological examination of sputum was positive for acid fast bacilli.

Xray shows thoracic 11th vertebra compression fracture with preserved disc space. kyphotic deformity of around 30 to 40 degree was calculated on lateral spine radiograph.

MRI demonstrated thoracic 11th vertebra compression fracture with para-vertebral hyperintense collection, compression of spinal column, preserved intervertebral disc.

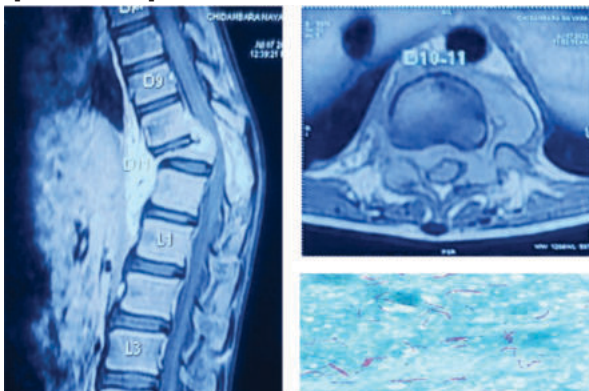


Figure No.3 Sagittal and axial MRI cuts showing D11 compression fracture with para-vertebral hyperintense collection and compression of the spinal cord. Right corner image shows pink purple acid-fast bacillus from sputum examination.

DISCUSSION

Spinal tuberculosis is hematogenous in origin, and usually follows pulmonary tuberculosis. The two conditions may occur concomitantly, as is commonly seen in young children, or spinal tuberculosis may develop many years after pulmonary tuberculosis. Extension of the disease into the paravertebral or extra-Dural space may occur.[4] Spinal tuberculosis is usually associated with a poor nutritional status and a

depleted immune response. Rajasekaran has described four simple radiological signs which reliably identify children who are at risk of severe deformity.[5] These signs are (a) "Separation of the facet joints" (b) "Retropulsion" (c) "Lateral translation and (d) "Toppling". The presence of three or more of these signs is predictor of bucking collapse in children with final deformity more than 60 degrees. Patient was managed primarily with anti-tubercular drugs. Since more than 2 spine at risk signs were present, patient underwent debridement and posterior instrumentation for correction of deformity.

CONCLUSION

In our patient the source of infection might have been from a latent focus in the hilar nodes of the lung, although the patient denied any previous history of tuberculosis. Possibly after severe trauma the patient's immunity was lowered this has led to spread of the tuberculosis infection and the vertebral fracture hematoma could have provided a nidus for infection. An alternative scenario is that the thoracic vertebra was already involved before the fracture, although the initial radiographs revealed no evidence of tuberculosis.

Declaration of Patient Consent:

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands his name and initials will not be published, and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

REFFERANCES

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