

CASE REPORT

A Case Report on Delayed Diagnosis of Pott's ParaplegiaASM Qamrul Hasan¹, Nazrul Islam², Arif Ahmed³, Sarwar Hussain Chowdhury⁴**Introduction:**

Vertebral tuberculosis (TB) is the commonest form of skeletal TB and it constitutes about 50 percent of all cases of tuberculosis of bones and joints. Back pain is an important symptom. Vertebral collapse from TB may be misinterpreted as 'compression fractures' especially in elderly persons. Magnetic resonance imaging scan (MRI) is an excellent procedure for the diagnosis of TB spine. However, microbiological diagnosis is essential. *Mycobacterium tuberculosis* may be cultured from other sites, otherwise a biopsy of the spinal lesion should be done for pathological diagnosis, culture and AFB stain. Clinicians should consider Pott's disease in the differential diagnosis of patients with back pain and destructive vertebral lesions. Proper diagnosis and anti-tubercular treatment with surgery (if needed) is essential for a favorable outcome.

Tuberculosis of spine is not uncommon in developing countries like Bangladesh. Extrapulmonary TB may involve any organ system and signs are non-specific. The

presenting symptom of Spinal TB (Pott's disease) is usually back pain. When roentgenogram of the spine shows vertebral collapse, it may be mistaken for compression fracture, thus delaying the true diagnosis of Pott's disease. A patient who had spinal TB and was initially treated as compression fracture is reported here. The patient had suffered from back pain for a long time but this symptom had been truly ignored and not suspected to be TB spine. Although in this case the diagnosis was delayed and complicated with paraplegia with autonomic involvement, the outcome was favorable due to proper decompression, stabilization and anti-tubercular therapy.

Case report:

A 40 years old woman was admitted in orthopedics department of Holy Family Red Crescent Medical College Hospital with the complaints of low grade fever and progressive back pain for the last eight months along with weakness followed by inability to move both the lower limbs (paraplegia) and loss of sensation below the umbilicus. She was initially diagnosed as a case of compression fracture of the vertebral body. After admission she developed incontinence of urine indicating autonomic involvement and neurosurgical opinion was sought. Patient was normotensive and non-diabetic and she had no history of trauma. On examination, she was febrile and had paraplegia suggestive of upper motor

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neuron lesion. Her muscle power of both lower limbs were 0/5, sensory level was D₁₀. She had tenderness over lower dorsal spine and gibbus was present. She had no lymphadenopathy or organomegaly.

Complete blood count, serum electrolytes, BUN, creatinine and albumin were normal. The alkaline phosphatase was 36 IU/L. Erythrocyte sedimentation rate (ESR) was 55 mm in the first hour. Urine analysis was normal. Immunoassay revealed mild increase in IgG and normal IgA. PPD skin test was negative. Blood culture had no growth. Sputum was negative for

both acid-fast bacilli (AFB) and malignant cells. X-ray chest was normal but X-ray dorsal spines revealed disc space obliterated in D₈ - D₉ with compression fracture of vertebral body (Fig.- 1).

Roentgenogram of the thoracic spines shows mild kyphosis of the thoracic spine with collapse of the lower-thoracic vertebral bodies with marked erosive changes involving the anterior and inferior portions (Fig.-1). MRI of dorsal of spine revealed compression fracture of vertebral bodies D₈ and D₉ with para-vertebral collection causing severe compression over the spinal cord (Fig.- 2).



1(a)



1(b)

Figure- 1: X-ray dorsal spine in both views; (a) Antero-posterior (b) Lateral



2(a)



2(b)

Figure-2: Sagittal and coronal section of MRI of Dorsal Spines; (a) Sagittal (b) Coronal



Figure-3: Per-operative picture shows posterior decompression and stabilization.

Hence the clinical diagnosis made was paraplegia with autonomic involvement due to compression fracture. Posterior decompression and stabilization by pedicle screws with rods was done (Fig.-3).

Biopsy showed cascating granulomas with multinucleated giant cells (Langhans type). Pus stained for AFB was positive. Antitubercular treatment was started preoperatively with isoniazid (INH), pyrazinamide, ethambutal and rifampicin. The patient was discharged and advised to continue the treatment for 18 months. The patient was responding well and her motor power in both the lower limbs improved postoperatively (motor power 1/5 in the first post-operative day. Her power in limbs gradually improved and prior to discharge motor power had reached 3/5, with correction of autonomic involvement. Patient's improvement was significant to the extent that seven months later the patient had walked to the hospital for follow up (Fig.-4).

Discussion:

Spinal TB accounts for 50% of the cases of skeletal, 15% of the cases of extrapulmonary and 2% of all cases of TB^{1,2,3}. The lower



Figure-4: Complete recovery from paraplegia during post-operative follow up.

thoracic and thoracolumbar spines are the most common areas involved, comprising 48% to 67% of all lesions^{4,5,6}.

The tubercle bacillus begins its destructive process in cancellous bone and eventually extends to the cortex. The infection gradually spreads to adjacent vertebrae via the disc space. In advanced stages of the disease, progressive vertebral collapse occurs, resulting in kyphosis and gibbus formation.

In spinal TB, onset of symptoms is usually insidious and disease progression is slow. The usual presentation consists of pain overlying the affected vertebrae, low-grade fever, chills, weight loss, and nonspecific constitutional symptoms of varying duration. Varying degrees of weakness, nerve-root compression and sensory involvement can occur. Neurological involvement has varied in different studies from 32% to 76% with notable differences in severity^{7,8,9}. Recognition of spinal TB in developing countries can be difficult due to lack of doctors' suspicion of this possible diagnosis. TB spine may present in a similar fashion to malignant deposits in the spine, which are encountered frequently. The

patient usually presents with back pain, signs like weight loss and raised ESR. This presentation is similar to cases of spinal metastasis.

A positive PPD skin test has been reported in 62 - 100% of TB spine cases^{9,10}. Even though a positive tuberculin skin test supports the diagnosis, a negative test should not be considered as evidence that excludes tuberculous infection. The best diagnostic modality for spinal TB is MRI^{11,12,13,14}. MRI is more sensitive than radiography and more specific than CT scan. As radiological appearances are commonly non-diagnostic and imaging studies are not fully reliable for differentiating spinal TB from other infections or neoplasm, bacteriological and/or histological confirmation must be obtained¹⁵. The diagnosis in this case was made by histology and AFB staining smear obtained from the collected pus. Fine needle aspiration of vertebrae for cytological, histological and bacteriological studies are also recommended. Fine needle aspiration cytology (FNAC) as a diagnostic tool is more accurate, safe, and cost effective because the procedure does not require hospitalization. Histological studies were confirmatory of TB in 59% to 76% of the cases^{5,16}.

Treatment of spinal TB with anti-tuberculosis medication is effective in about 90% of the cases. In some cases treatment may be combined with surgery^{16,17}. Surgery, which was once the mainstay treatment for spinal TB, is required less frequently, even in patients with cord compression. Chemotherapy alone has also been reported as a successful treatment modality¹⁸.

Excellent results with treatment of TB spine can be achieved if early diagnosis is made. Progressive back pain should suggest plain radiography of the spine, and perhaps followed by MRI. Patients usually present with persistent back pain. Spinal radiographic findings are usually misinterpreted as compression fracture and hence the diagnosis of TB spine may be delayed. Differentiating TB spine from osteoporotic compression fracture of the spine (especially in postmenopausal women) and from spinal cord involvement in malignancies is important. Timely treatment of spinal TB can avoid extensive investigations, treatment delays and adverse long-term outcomes, including compression fracture with neurological deficits and surgery.

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