

Multifocal Skeletal Tuberculosis

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Figure 1: Clinical photograph of the patient showing gibbus deformity in the upper thoracic spine and paraspinal abscess.

A 6-YEAR-OLD INDIAN BOY PRESENTED with a month-long insidious onset of pain in his back and left shoulder. He had had a low-grade fever, decreased appetite and weight loss for 2 months. There was no history of trauma, chronic cough, or bowel or bladder complaints. His father was on anti-tuberculous therapy for pulmonary tuberculosis (TB) (sputum positive). On examination, the boy had a gibbus deformity of the thoracic spine [Figure 1]. Tenderness was present over the upper thoracic spine and the left shoulder

joint. Paraspinal spasm and swelling was present. A systemic examination was normal. Investigations revealed haemoglobin of 9.4 gm%; a total leucocyte count of 12,400/cumm (neutrophils 55%, lymphocyte 45%); a platelet count of 2.1 lac/cumm, and an erythrocyte sedimentation rate of 88 mm at 1 hour. A human immunodeficiency virus (HIV) enzyme linked immunosorbent assay (ELISA) test was negative. A Mantoux test was positive (28 mm). A chest X-ray and an ultrasound of the abdomen were normal. Magnetic resonance imaging (MRI)



Figure 2: Coronal T2 weighted image shows complete destruction, with a collapse of the T3 and T4 vertebrae. Marrow oedema is noted from T1 to T5 vertebral levels and also in the left lateral end of clavicle and acromion process.



Figure 3: Coronal T2 weighted image shows bilateral paravertebral abscess.

of the spine revealed multifocal skeletal TB involving the thoracic spine, the lateral end of the left clavicle, and the left acromion process. There was also evidence of prevertebral, paravertebral, and anterior epidural abscesses [Figures 2–4]. Surgical debridement was done and 150 ml of pus was drained. Acid-fast bacilli were demonstrated in the pus by a Ziehl-Neelsen stain. Our patient was diagnosed with multifocal TB and was started on an antituberculous therapy of isoniazid, rifampicin, pyrazinamide, and ethambutol for two months, followed by isoniazid and rifampicin for four months. He was followed up monthly after discharge and at the end of six months showed marked improvement in symptomatology. His appetite and weight had increased, the fever had subsided, and his paraspinal abscess had decreased.

In recent years, widespread immigration, HIV infection, illicit drug use, and the emergence of multi-drug resistant mycobacteria have resulted in a worldwide resurgence of TB.¹ Skeletal TB accounts for less than 10% of all cases of TB. Multifocal TB is rare, occurring in less than 5% of cases even in endemic countries.² Multifocal skeletal TB is defined as osteoarticular lesions that occur simultaneously in two or more locations, with or without pulmonary involvement. It may affect a single bone with multifocal lytic cortical lesions or multiple sites at different bones.³ Multifocal skeletal TB most often involves the axial skeleton (spine)

followed by the major weight bearing joints. It is commonly seen in immunosuppressed patients, and usually associated with pulmonary TB.^{2,4} Our patient was immunocompetent and had normal pulmonary findings. Other atypical features were



Figure 4: Sagittal T2 weighted image showing complete destruction with collapse of T3 and T4 vertebrae with decreased T3 and T4 disc height and the resultant severe gibbus deformity. There is an associated prevertebral and anterior epidural abscess, causing complete obliteration of the anterior and posterior subarachnoid space, and severe cord compression.

the involvement of the lateral end of the clavicle and the acromion process of scapula. TB of the lateral end of the clavicle and shoulder is extremely rare, occurring in less than 1% of cases.^{5,6} To the best of our knowledge, only two cases of TB of the acromion process and less than ten cases of TB of the lateral end of the clavicle have been reported to date.^{5,6} Multifocal skeletal TB must be considered in the differential diagnosis of multiple destructive skeletal lesions. Conventional X-rays often fail to detect early skeletal disease, resulting in a delayed diagnosis. In addition, the radiological picture is variable and the lytic bony lesions may easily be confused with osseous, or inflammatory or neoplastic diseases, either primary or metastatic.^{2,4} Computed tomography (CT) and MRI scans can usefully determine the extent of bone lesion and soft tissue involvement and differentiate between abscess and the granulation of tissue. A radionuclide bone scan is non-specific, may be negative in the early stages of the disease, and does not differentiate between lytic tuberculous lesions or malignancy. The diagnosis is confirmed by biopsy. Uncomplicated tuberculous lesions of the clavicle

and scapula usually resolve with anti-tubercular therapy. Similarly, spinal TB is managed with bracing and anti-TB drugs. Surgery is needed only if there is a neurologic deficit or spinal instability.^{2,4}

References

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