

MULTIFOCAL TUBERCULOSIS OF THE SPINE

Case report

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ABSTRACT :

A 17-year-old boy was admitted to our clinic with back pain. He had no signs and symptoms of spinal cord or root compression. Plain radiographs of vertebral column demonstrated multiple isolated involvement at T1, T4, T8 and T11-T12-L1 levels. The angle between the T10 and L1 in sagittal plane was measured as 37 degrees preoperatively. Chest roentgenogram is completely normal. Computed tomography and magnetic resonance imaging revealed the destructive lesions in both the vertebral body and right pedicle, lamina and transverse process of L1. Histologic examination of biopsy specimens which were taken from L1 showed typical appearance of tuberculosis of bone. The patient is successfully treated by anterior radical debridement and grafting with fibula and rib between the T10 and L1 combined with antituberculous drugs for 12 months period. The kyphosis angle was 24 degrees postoperatively. After a year, grafts were incorporated and there was no further kyphosis at thoracolumbar junction.

Key words: Multifocal, spine, tuberculosis.

INTRODUCTION

The tuberculous infection usually begins in the vertebral body and may extend beneath the anterior longitudinal ligament and thus spread to involve adjacent vertebra (5, 9). Noncontiguous multilevel involvement of vertebral column is very exceptional. The authors report a case of Pott's disease which is unusual in two regards: first the circumferential involvement of the L1 vertebra; and second, the noncontiguous nature of the tuberculous involvement at multiple levels.

CASE REPORT

A 17-year-old boy was admitted to our department with a 2-month history of back pain. Neurological examination revealed completely normal motor and sensorial function. He had no history of underlying disease. Plain roentgenograms of spine showed multiple isolated involvement at the level of T1, T4, T8 and contiguous involvement at T11-T12-L1 levels. The

kyphosis angle was 37 degrees at thoracolumbar region (Figures 1.a, b). Chest roentgenogram was normal. Computed tomography (CT) and magnetic resonance imaging (MRI) revealed destructive lesions of vertebral body at T1, T4 and T8 levels and vertebral arch lesions and contiguous corporeal involvement at L1 level (Figures 2. a, b, c). There is no paravertebral abscess. Laboratory evaluation showed an elevated erythrocyte sedimentation rate and positive tuberculin test. Histological examination of specimens which were taken from L1 by open biopsy demonstrated typical appearance of tuberculosis of bone.

Based on plain roentgenograms, CT, and MRI, thoracic spine was accepted as stable and the intervention to T11-L1 level was planned. Anterior radical debridement and grafting with autogenous fibula and rib between the T10 and L1 was successfully carried out using a thoracophrenolumbotomy approach. The kyphosis angle between T10 and L1 was reduced to 24 degrees (Figures 3. a, b). Histological diagnosis was confirmed with biopsy which were taken from T8 and T11-L1 vertebrae. Antituberculous chemotherapy was administered as a three-drug regimen with rifampicin and isoniazid for following nine months. The patient was mobilized with a brace. After a follow-up

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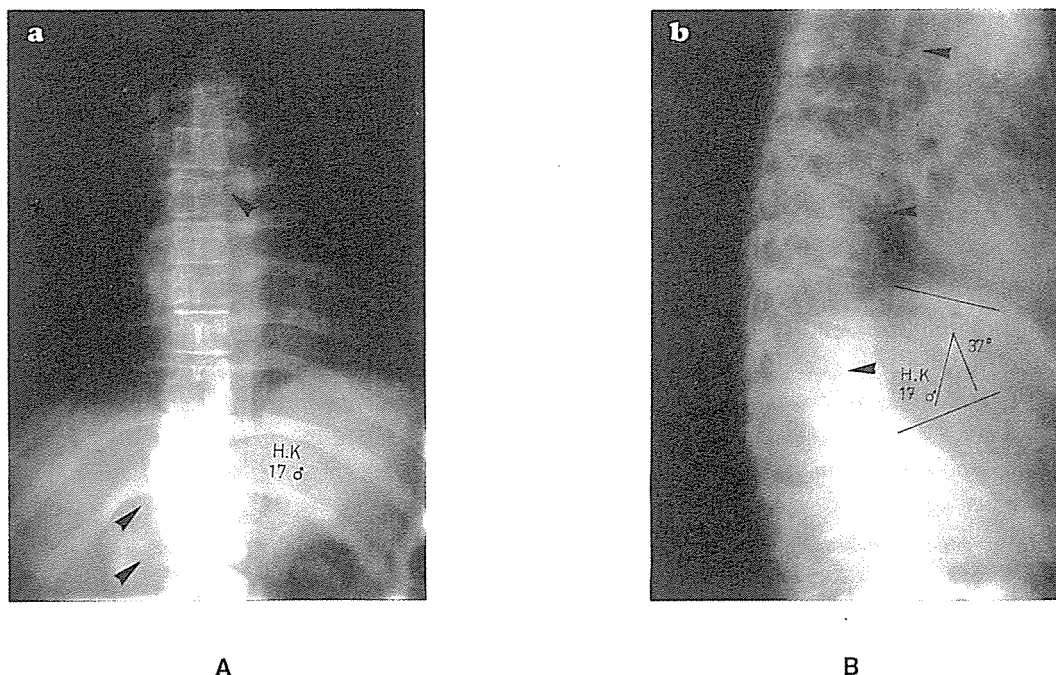


Fig. 1.. (A) Anteroposterior and (B) lateral roentgenograms of the spine show multiple isolated involvement at the level of T1, T4, T8 and contiguous involvement at T11-T12-L1 levels and kyphosis at thoracolumbar region. The kyphosis angle between the T10 and L1 is 37 degrees.

period of 12 months, grafts were incorporated. There was no progression of kyphosis at thoracolumbar junction (Figures 4. a, b).

DISCUSSION

Spondylitis is the most frequently encountered form of musculoskeletal tuberculosis. Tuberculosis of the spine is usually the result of hematogenous seeding of the vertebral body from the primary infectious foci of the pulmonary and genitourinary systems (5, 7). There are three major types of spinal involvement: peridiscal, anterior and central (4). With peridiscal localization the infection takes place at the anteroinferior portion of the vertebral body and destroys the intervertebral disc early in the disease process. Infrequently, the infective process may extend beneath the anterior longitudinal ligament and then spread to involve multiple nonadjacent vertebrae. Skip lesions may be seen in 10% of patients (3).

Tuberculous involvement of the posterior elements of the spine is uncommon and has been reported as occurring in 0.2% to 10% of patients (1, 2, 10). Naim-ur-Rahman (8) reviewed 190 spinal tuberculous cases and found 23 (12%) patients with atypical forms. Kulali et al. (6) reported a case of spinal tuberculosis with circumferential involvement of two noncontiguous isolated vertebral levels. Travlos and Toit (10) and Adendorf et al. (1) emphasized to be aware the possibility of circumferential involvement.

In presented case, the lesions affect multiple levels from T1 to T8 in noncontiguous fashion and simultaneously vertebral corpus and posterior elements at L1 level. Although the posterior wall of the vertebral body and neural arch of the L1 was affected, there was no neurological deficit. During the postoperative period, his general condition improved. After a year, there was no further kyphosis at thoracolumbar region and no complication regarding to bone grafts.



A

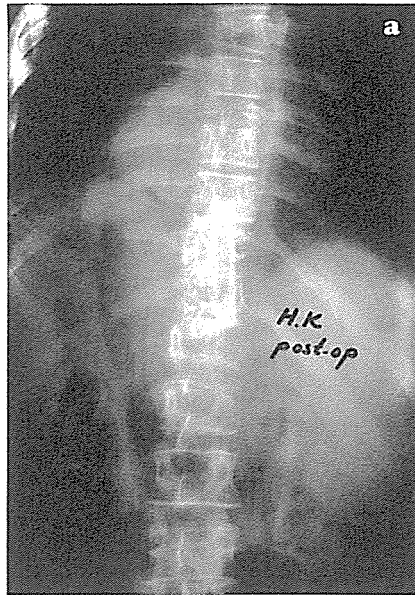


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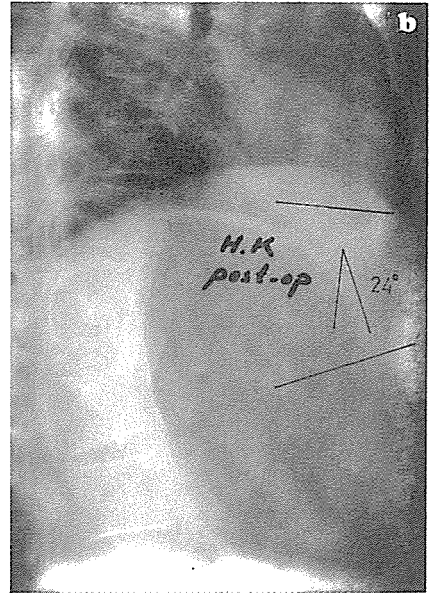


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Figures 2. (A) CT and (B, C) MRI revealed destructive lesions of vertebral corpus at T1, T4 and T8 levels and vertebral arch lesions and contiguous corporeal involvement at L1 level.



A

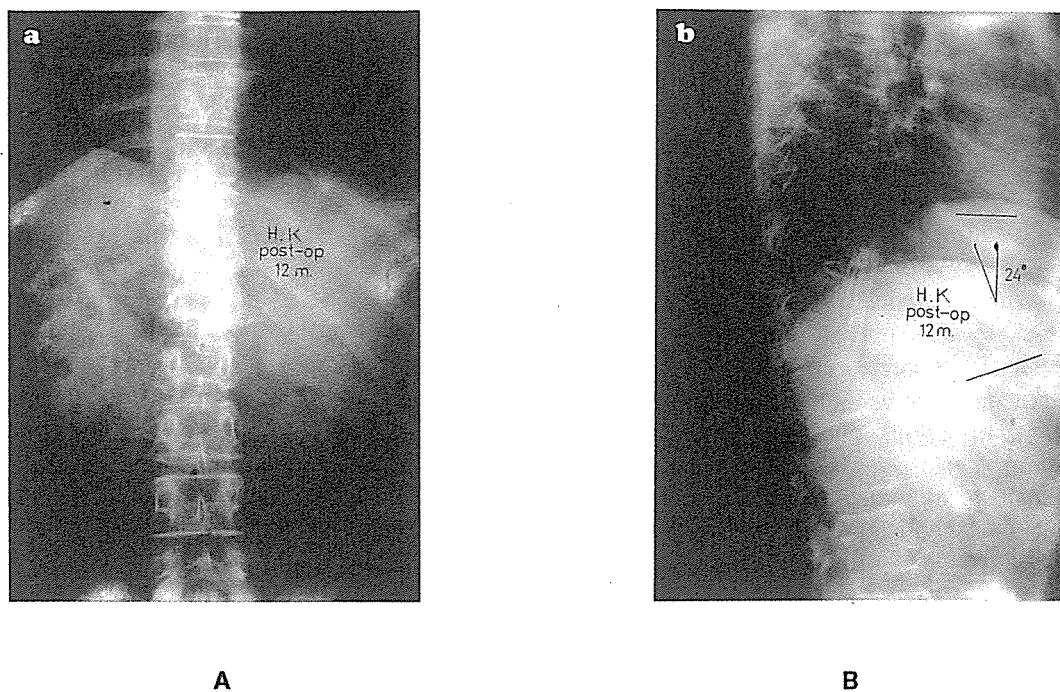


B

Figures 3. (A, B) Anteroposterior and lateral roentgenograms after the operation. Note the interbody grafting from T10 to L1 using autogenous fibula and rib grafts. The kyphosis angle between the T10 and L1 was reduced to 24 degrees.

Although spinal tuberculosis may mimic other pathological conditions such as brucellosis, hydatid disease and tumors affecting the spine, classical Pott's disease with paravertebral abscess is generally diagnosed without any difficulties. When disease is uncommon such as this case, diagnosis of these lesions may not be so easy. Vidyasagar and Murthy (11) re-

ported 35 cases inadvertently treated with laminectomy for an incorrectly presumed diagnosis of metastatic disease in a series of 200 cases of tuberculosis of the spine. Although MRI is helpful to be able to make a presumptive diagnosis, computer-guided fine-needle or open biopsy may be necessary for definitive diagnosis in atypical forms of tuberculous spondylitis.



Figures 4. (A, B) Anteroposterior and lateral roentgenograms demonstrate the incorporation of grafts a year after the operation. There is no further kyphosis at thoracolumbar junction.

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