Lumbosacral spinal tuberculosis: A case report and review of literature

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Spinal tuberculosis accounts for more than 50% of musculoskeletal tuberculosis and mainly involves the dorsal and dorsolumbar regions. Involvement of the lumbosacral region in spinal tuberculosis is rare, with only few reported cases in the literature. The patient may present with pain and minimal neurological deficits. Conservative management is the primary treatment modality with good outcome; surgical intervention is reserved for selected group of patients. In the present article we report an uncommon case of lumbosacral tuberculosis that was treated successfully and review the relevant literature.

Keywords:
lumbosacral spine, lumbosacral tuberculosis, skeletal tuberculosis, spinal tuberculosis

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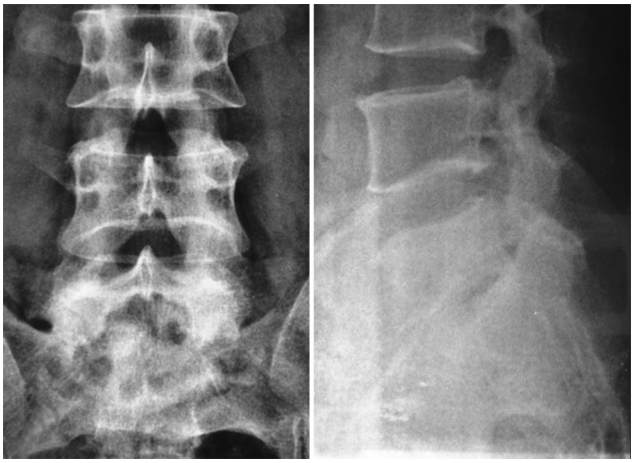
Introduction

Spinal tuberculosis accounts for more than 50% of musculoskeletal tuberculosis and mainly involves the dorsal and dorsolumbar regions [1–7]. Involvement of the lumbosacral region in spinal tuberculosis is rare, with only few reported cases in the literature [4,8–13]. In the present article we report an uncommon case of lumbosacral tuberculosis that was managed successfully and review the relevant literature.

Case report

A 45-year-old man presented with low back pain of 1.5 months duration, which increased in severity over the last 15 days. The pain was radiating to the left lower limb and was associated with tingling and numbness. The patient had a history of low-grade fever, weight loss, and malaise over the last 2 months. There was history of cough with expectoration, and for the same he started antitubercular treatment that he was taking irregularly. On examination, there was mild pallor and no other significant findings. There was localized tenderness over lumbosacral spine. His cardiovascular, respiratory, and abdominal examination was normal. Higher mental functions and cranial nerve examination were normal. There were no meningeal signs. Motor and sensory examination in the upper limbs was normal. Straight leg raising test was positive (30° bilateral). Bulk and tone were normal in the lower limbs. In both of the lower limbs, power was grade 4/5 around the hip joint, ankle joint, and the knee joints. Knee jerk was normally elicitable; however, ankle jerk was absent on both lower limbs. Superficial abdominal reflexes were normally present. Plantar reflexes were absent on both lower limbs. Sensory examination revealed impaired pain and temperature sensation in the L5–S1 distribution in both lower limbs. Blood tests showed low hemoglobin (8.6 g/dl) and elevated erythrocyte sedimentation rate (erythrocyte sedimentation rate 80 mm/1 h). Other laboratory parameters were within normal range. The Mantoux test was positive, but test for HIV was negative. Radiograph of lumbosacral spine anteroposterior and lateral views showed reduced disc space between L5 and S1 with irregular margins (Fig. 1). Radiograph of the chest was normal. MRI of lumbosacral spine T1-weighted and T2-weighted axial and sagittal images showed destruction and signal alteration involving L5 and S1 bodies, altered signal intensity involving L5–S1 disc, and thecal sac compression with associated paravertebral and prevertebral collection extending from L5 to S3 level (Figs. 2 and 3). On the basis of the clinical details and findings a diagnosis of Pott's disease of the

Figure 1



Radiograph of lumbosacral spine anteroposterior and lateral views showed reduced disc space between L5 and S1 with irregular margins.

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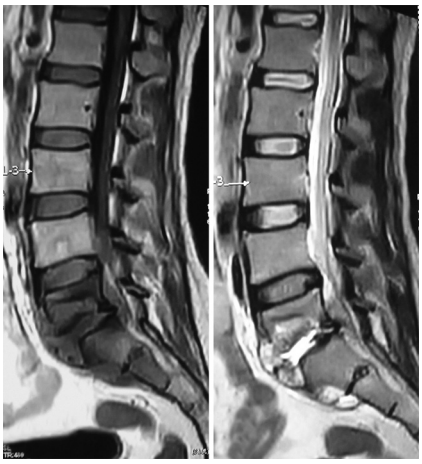
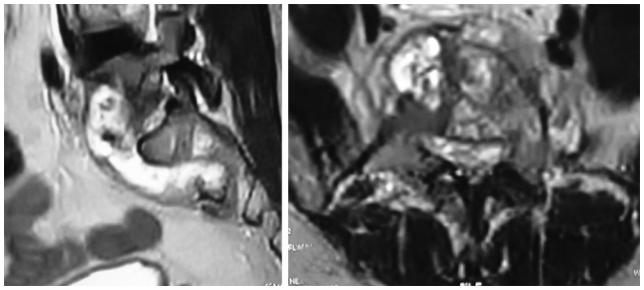
lumbosacral spine was made. The patient continued on antituberculous therapy and underwent surgical decompression, spinal fixation, and evacuation of the abscess. Histopathological examination of the lesion showed granulomas with epithelioid cells and Langhans giant cells suggestive of tuberculosis (Fig. 4). At follow-up, the patient improved completely in his motor and sensory deficits, and the pain was relieved significantly. Approval have been taken verbally from the patients.

Figure 2



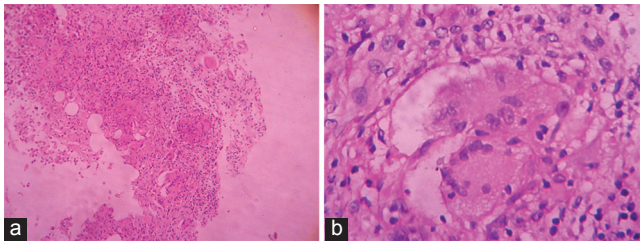
MRI of lumbosacral spine T1-weighted and T2-weighted sagittal images showing destruction and signal alteration involving L5 and S1 bodies, altered signal intensity involving L5–S1 disc, and thecal sac compression with associated paravertebral and prevertebral collection extending from L5 to S3 level.

Figure 3



MRI of lumbosacral spine T1-weighted and T2-weighted axial images showing destruction and signal alteration involving L5 and S1 bodies.

Figure 4



(a) Granulomas with epithelioid cells and Langhans giant cells (H&E, ×100) and (b) granuloma with Langhans giant cells (H&E, ×400).

Discussion

Because of the capacious spinal canal and floating nerve roots (relatively tolerant to compression by an abscess or by granulation tissue) the lumbosacral tuberculosis behaves clinically different compared with tuberculosis in other areas of the spine [12,14]. Common clinical presentation of lumbosacral tuberculosis includes low back pain with or without signs of neurological compression (i.e. altered sensations in the lower limbs, motor weakness with or without bowel/bladder dysfunction) [15–19]. Natural lumbar lordosis prevents anterior disease to cause kyphosis, and an extensive destruction of the vertebral body is required before kyphosis develops [12,14]. Radiological investigations include plain radiographs, computed tomographic scan, and MRI. Plain radiographs show the loss of vertebral height, disc space narrowing, erosions, indistinction of the end plates, abnormal paravertebral masses, and abnormal calcifications in the soft tissue [20]. However, plain radiographs are relatively insensitive particularly for the early detection of tubercular lesions; hence, in these cases is superior as it will provide better details [21,22]. MRI is the investigation of choice for the investigation of these cases, as it shows better details of the pathology and also demonstrates spinal canal compromise [20,23–25]. It has been suggested that a tissue diagnosis may not be needed in all cases of lumbosacral tuberculosis and that paravertebral abscesses may also resolve with chemotherapy [26,27]. In cases where the diagnosis of skeletal tuberculosis can be made with certainty, a conservative management with an adequate course of antituberculosis drugs (four-drug therapy with isoniazid, rifampicin, ethambutol and pyrazinamide) can result in good outcome [14,26,28–34]. In cases where the diagnosis is in doubt, computed tomography-guided fine needle biopsy is an option [12,25], and when there is compression of neural structures or persistent pain and/or instability, surgical intervention (decompression with or without fixation is recommended) in combination with antitubercular chemotherapy is recommended [12,14.]

Conclusion

Lumbosacral involvement in tuberculosis is uncommon. The patient may present with pain and minimal neurological deficits. Conservative management is the primary treatment modality with good outcome;

surgical intervention is reserved for selected group of patients [8,12,14].

Acknowledgements

Conflicts of interest

There are no conflicts of interest.

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