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CASE REPORT

Spinal Tuberculosis Mimicking Metastasis in a Case of Basal Cell Carcinoma

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ABSTRACT

Spinal tuberculosis (TB) is a common problem in developing countries. Among the bone tuberculosis spine is the most common site. If there are atypical spinal lesions associated with a primary lesion elsewhere in the body, this can mislead the diagnosis and management of disease. We report a case of 63-year-male patient presented with sudden onset of weakness in both lower limbs associated with back pain. Magnetic resonance imaging (MRI) of thoracic spine showed multiple noncontiguous lesions involving thoracic vertebral bodies. The patient had a rapidly growing blackish lesion over the left submandibular region. So clinicoradiological diagnosis considered as melanoma with metastasis. The patient underwent emergency laminectomy with gross total resection of epidural lesion. Histopathology confirmed it as tuberculous lesion. Excisional biopsy of submandibular lesion suggestive of basal cell carcinoma. Multiple vertebral lesions can sometimes be misleading if these are associated with primary lesion. In developing countries like India, where TB is prevalent, TB of the spine should be considered as differential diagnosis even if it is associated with a primary lesion as subsequent treatment protocol has significant impact on the outcome.

Keywords: Basal cell carcinoma, Melanoma, Spinal tuberculosis.

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INTRODUCTION

Spinal tuberculosis (TB) is a common problem in developing countries. The most common bone TB site is the spine accounting for about 50% of cases, and, among spinal TB, 3 to 5% affects cervical spine.[1,2] In spinal TB two or more contiguous vertebrae are commonly involved. Noncontiguous multiple vertebral involvement is relatively rare and most of the reported cases have lesions only in two levels. Multiple vertebral involvement is rare, accounting for 7% of spinal TB cases.[3] Current research indicates the incidence of multiple level noncontiguous vertebral TB is 1.1 to 16%.[4] If the patient has a primary lesion in association with atypical spinal tuberculous lesions, diagnosis can be difficult. Here we present a case of basal cell carcinoma involving face mimicking melanoma with atypical spinal lesions mimicking metastasis. In a country like India, where TB is prevalent, possibility of spinal tuberculous lesions should always be considered even if there is a primary malignancy elsewhere in the body.

CASE REPORT

A 63-year-male patient presented in the emergency department with sudden onset of weakness in lower limbs for 1 day and pain in upper back in lying down position for 15 days. He had brownish black lesion over a left submandibular region, which had recently increased in size (Fig. 1). Intermittent discharge noticed from the lesion, however, there was no evidence of regional lymphadenopathy. Neurological examination revealed hypertonia in both lower limbs. Power was a medical research council (MRC) grade 3/5 in both knees and hips, in flexion as well as extension. The knee and ankle reflexes were exaggerated. Plantar response was extensor and superficial reflexes were absent. There was decrease in touch and pain sensation by 25% below the nipple bilaterally. Cerebellar signs were absent. There was local tenderness over the dorsal spine at D3 to D4 and D7

Fig. 1: Left submandibular lesion mimicking melanoma

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to D8 level. Considering lesion over a left submandibular region, which has a recent history of increase in size along with discoloration and discharge, melanoma with spinal metastasis was considered as a primary diagnosis. Magnetic resonance imaging (MRI) of dorsal spine showed altered marrow signals which appear hypointense on both T1 and T2 weighted images and shows intense contrast enhancement are seen involving C6, D3 and D8 vertebra and posterior element of D3. There was extradural compression associated with underlying cord edema at the level of D3 (Figs 2 and 3). Considering primary facial lesion, noncontiguous involvement of vertebral bodies and sparing of intervertebral disk, the metastatic disease was considered as a provisional diagnosis. Computed tomography (CT) dorsolumbar spine showed lytic destruction of the spinous process, both laminae and left pedicle of the D3 vertebra (Fig. 4).

The patient underwent emergency D2, D3 and D4 laminectomy. There was grayish lesion at the level of D3 extending into paraspinal space with erosion of the lamina and spinous process. Part of the lesion extending into the paraspinal region appeared to be more vascular.

Fig. 2: Sagittal MRI spine showing noncontiguous involvement of C6, D3 and D8 vertebra

Adequate decompression of the thoracic spinal cord achieved. Frozen section study of the lesion appeared as chronic granulomatous caseating necrosis without malignant cells. Hence, TB of the spine was considered as a primary diagnosis. Postoperative course was uneventful. The patient received oral anti-tubercular treatment as final histopathology suggestive of tuberculous etiology (Fig. 5). The patient underwent second surgery for left submandibular lesion. Complete excision of lesion achieved with 2 cm margins all around. Histopathology confirmed it as basal cell carcinoma (Fig. 6).

Postoperatively the patient improved neurologically, his power improved to grade 5/5 at 4 weeks follow-up. Sensation below nipple became normal.

DISCUSSION

Tuberculous disease in human beings predominantly affects the Eastern hemisphere of the world. Up to three quarters of the world's population lives in the Eastern hemisphere, and it is here that many live in poorly nourished, overcrowded and in subnormal social conditions. According to the World Health Organization, TB is the number one specific infectious cause of death worldwide.[5] Tuberculosis of the spine is one of the most common spine pathology in India.

Extrapulmonary TB consists of 15 to 20% of the patients if one includes pleural and lymphatic disease, which is most common.[5] Skeletal TB is 10% of this, of which spinal TB accounts for approximately 50%. This gives an incidence of between 1 and 2% for osteoarticular TB and 0.5 to 1% for spinal TB.[6] The thoracic spine is the most common site of tuberculous infection.[7]

It is well known fact that two or more contiguous vertebrae are commonly involved in spinal TB due to hematogenous spread through a vertebral artery feeding two adjacent vertebrae.[8,9]

Tuberculosis occurs in two forms.[10] One is the caseous exudative type, with excessive granulation tissue,

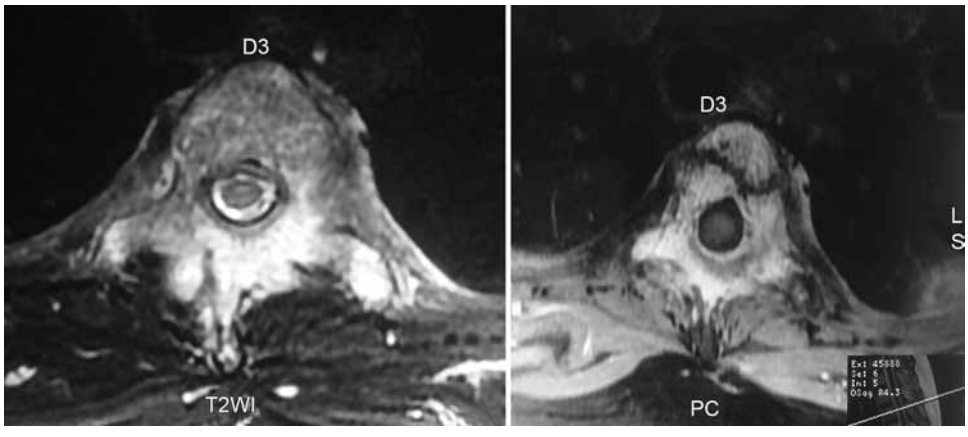

Fig. 3: Axial MRI at D3 level showing extradural compression of spinal cord

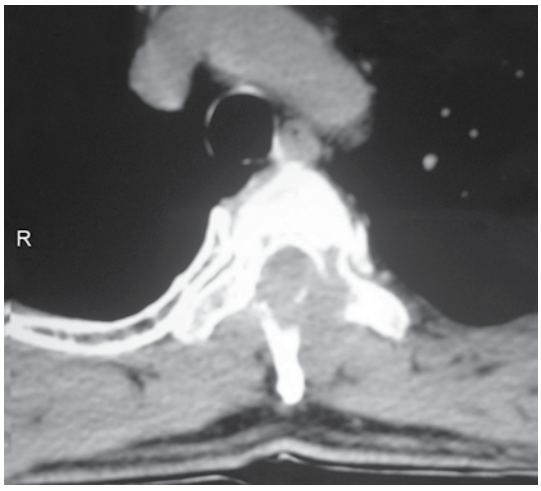

Fig. 4: Computed tomography dorsolumbar spine showed lytic destruction of the spinous process, both laminae and left pedicle of the D3 vertebra

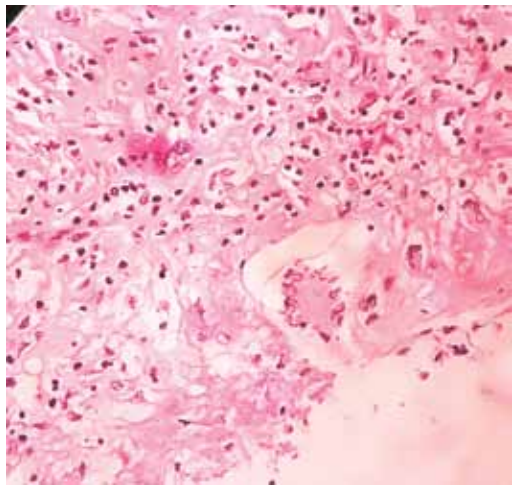

Fig. 5: Epithelioid cell granuloma rim with giant cell in the center

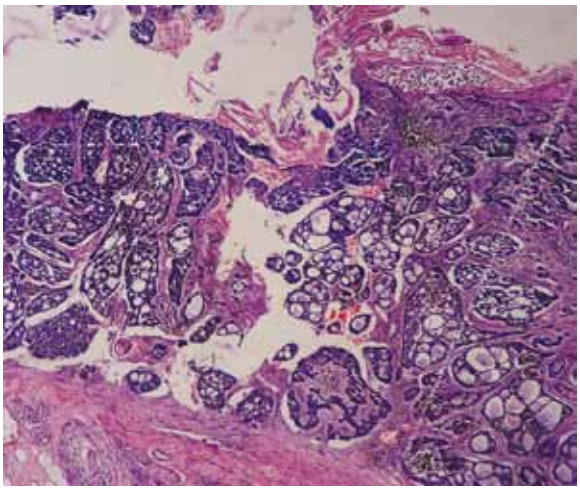

Fig. 6: Histopathological examination showing nests of basaloid cells that extend in contiguity from the basal layer of the epidermis

paravertebral abscess, destruction of bone and neurological signs. The constitutional symptoms and local signs of inflammation are more marked. The second granular type is a dry lesion, with less destruction of bone and no abscess formation. Ours is a second type with insidious onset, no constitutional symptoms, no inflammatory signs and no abscess formation.

Features of spinal TB (Pott's disease), include destruction of the intervertebral space and collapse of vertebral bodies, leading to progressive kyphosis. Pyogenic osteomyelitis, and metastatic lesions from systemic malignancy should be differentiated from spinal TB.[11]

Noncontiguous, multiple, remote involvement of tuberculous spondylitis is relatively rare, and most of the reported cases have lesions only in two levels.[8,9] Current research indicates the incidence of multiple-level noncontiguous vertebral TB is 1.1 to 16%.[4]

Multiple imaging modalities, such as conventional radiography, scintigraphy, CT and myelography have all been reported to be helpful in the diagnosis of spinal TB, but MRI is relatively more sensitive and is believed to be the modality of choice in the appropriate clinical setting.[12]

The atypical features of spinal TB include:

- Involvement of the posterior elements (neural arch) of the spinal column with complete sparing of the anterior elements (vertebral bodies and disks)
- Skip lesions separated far enough apart to involve the two extremities of the spine (sacrum and upper cervical spine)
- Extradural spinal cord compression without radiographic evidence of bony involvement and
- Destructive lesion of the sacrum with palpable pelvic mass.[6,13] It is hoped that increased awareness of these atypical features and inclusion of these atypical forms of spinal TB in the differential diagnosis of primary and metastatic spinal tumors will lead to improved diagnostic accuracy at an early stage of disease, i.e. before irreversible neurologic deficits and spinal deformities have occurred. If there is doubt, image guided biopsy can clinch the diagnosis in suspected lesions.

But if the patient has a primary lesion elsewhere in the body, there is tendency to rule out metastatic lesions. If there is suspicion of rapidly growing lesion like malignant melanoma, diagnosis of TB is not only overlooked, but also management targeted to treat the primary pathology.

Tuberculosis has a worthy reputation as one of the great mimickers in medicine with a multitude of clinical pictures and variations. This makes the characteristic features of the classic disease, problematic, with most texts and articles describing a typical clinical and radiological picture followed by many atypical derivatives. Although tuberculous spondylitis frequently involves multiple adjacent spinal vertebrae, noncontiguous, remote involvement is reported as rare in literature.

The differential diagnosis of tubercular spine includes pyogenic and fungal infections, sarcoidosis, metastasis, and lymphoma. With the neoplastic involvement of the spine, the disk spaces are usually spared and paravertebral abscesses are not seen, although solid extraosseous soft tissue component may be associated if vertebral bodies are destroyed. Skip or nonconsecutive multifocal involvement of the spine also favors neoplastic lesion. Therefore, in areas with a high endemicity of this infection, a high index of suspicion is required for spinal TB even with atypical presentations.

CONCLUSION

Multiple vertebral lesions can sometimes be misleading if these are associated with primary lesion. In developing countries like India, where TB is prevalent, TB of the spine should be considered as differential diagnosis even if it is associated with a primary lesion as subsequent treatment protocol has significant impact on the outcome.

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