Atypical presentation of skeletal tuberculosis: a report of two cases

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ABSTRACT

Osteoarticular tuberculosis comprises of less than 3% of extra pulmonary tuberculosis. This often causes a diagnostic enigma especially when it presents at unusual sites. We are presenting atypical presentations of skeletal tuberculosis in two cases: one multifocal and other in the calcaneum of a 2 year old child.

Keywords: Skeletal tuberculosis, atypical presentation

INTRODUCTION

Multifocal skeletal tuberculosis is defined as osteoarticular lesions that occur simultaneously at two or more locations. It is a very rare entity. It differs from the skipped lesions of tuberculosis, in which two sites of infection are separated by normal tissue as seen in spinal tuberculosis.

The diagnosis and management of this condition is often very difficult. The diagnostic criteria used for multifocal tuberculosis are an elevated ESR, x-ray chest, CT scan, MRI scan, Reverse Transcriptase Polymerase Chain Reaction (RTPCR) and histopathological examination.

In this condition, serological tests have been proven to have no significance as a lot of false positive and false negative cases have been reported.

The clinical importance of the multifocal tuberculosis lies in the difficulty in tackling lesions in different areas during management.

Case 1

A 29 year male patient was admitted in our medical ward with pyrexia of unknown origin. The complaint started two months earlier as low grade fever when he was imprisoned in the Middle East.

On admission there was no history of cough with expectoration or any symptoms pertaining to the skeletal system. His ESR was 103 mm/1st hour. Mantoux test was positive and Brucella agglutination test was negative. Chest x-ray showed haziness of the left upper lobe with mild collapse of the lower lobe of left lung and a prominent mediastinal lymph node.

After two weeks of admission he had severe back pain which was confined to the back of the chest. A CT scan of the chest showed destruction of the T3, T4, T6, T7 and T11 vertebrae which was confined to the posterior elements. A paravertebral shadow was seen bilaterally from T1 to T6 level. There was a destruction of the anterolateral aspect of the rt)8th rib with pleural thickening. Mild fibrotic changes were noted over the apical segment of the left upper lobe. A calcified density noted in the right lobe of liver of size 2 x 8 mm indicating a healed granuloma.

He was put on anti tuberculous (ATT) therapy under the Short-course Directly Observed Treatment (DOTS) regime. While on ATT, the patient developed weakness of both lower limbs and the right upper limb. This progressed within 3 days to grade 0 power of both lower limbs and right upper limb. An MRI showed multi level destructive changes of the spine involving D2-D3, D5-D6 and D9-D11 vertebrae.

He was treated with costo transversectomy at D2-D3 with resection of 2nd rib, anterolateral decompression of the D5-D6 and decompression of D11, stabilisation and fusion through a modified Seddons approach. Post operative period was uneventful. The granulation tissue and the
pus obtained was sent for RTPCR, histopathology examination and AFB staining. RTPCR was positive for tuberculosis and tuberculous granuloma detected in the biopsy. Following the surgery the patient was put on a modified Taylors brace and ATT, including injection Streptomycin for 45 days. On the 40th day onwards his neurological status gradually improved and by 3 months he had complete neurological recovery. ATT was continued for a total period of 9 months. The patient fully recovered from paraplegia and the disease, however he may require a long term follow up for the detection of the instability.

Case 2

A male child of 2 years was admitted with a sinus on the lateral aspect of the right foot just behind the cuboid. There was no history of any injury or fever. The child was active. On examination there was slight thickening of the calcaneum over the lateral aspect. X-ray of calcaneum axial and lateral view showed a well circumscribed lytic lesion in the body of the calcaneum.

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A provisional diagnosis of pyogenic osteomyelitis was made and the child was put on parenteral cephalosporin after taking the pus for culture and sensitivity. His ESR was 35 mm/1st hour and the Mantoux test was positive. Chest x-ray was normal. Pus culture did not grow any organism. CT of the calcaneum showed lytic lesion without any periosteal reaction, likely to be of an infective cause. A curettage and biopsy of the lesion was done. The histo pathology report was tuberculosis. He was put on ATT under DOTS category 1 and continued for 6 months. The sinus and lesion completely healed.

Skeletal tuberculosis is a relatively common disease especially in endemic areas. This was comparatively rare in Kerala but the incidence of skeletal tuberculosis is now on the rise. As suggested by Mehmet et al. multi focal tuberculosis is commonly seen in immuno compromised patients. The prevalence is more in HIV patients and patients with malignancies. In the first patient the immune status was fairly good and the screening of HIV and
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HbSAg were negative and there was no clinical evidence of malignancy.

In cases of severe skeletal tuberculosis the category 1 therapy is ideal. After 6 months of the therapy the ESR was high and there was local tenderness at the site of involvement. But it took 9 months for the ESR to return to its normal level. It also took the same time for the local tenderness to resolve. In our first case as the patient had paraplegia, surgical decompression was indicated as suggested by Moon MS et al. 8

Surgical stabilisation of the spine with anterior instrumentation has been described by most of the authors but posterior instrumentation with anterior fusion is advisable in the thoracic region as suggested by Yash Gulathi et al. 11

Tuberculosis of the calcaneus is a rare entity. Its incidence is nearly 1% to 2% of all cases of osteoarticular tuberculosis. Because of the low index of suspicion, it is usually diagnosed late. It occurs mostly as a result of haematogenous spread from a primary focus elsewhere in the body. It has not yet been reported in a child 2 years of age.

Mittal et al. 7 classified the tuberculosis of foot into five radiological groups viz. cystic, rheumatoid, subperiosteal, kissing and spina ventosa. Of these, the cystic variety is relatively uncommon. The second case in our report was cystic type of tuberculosis. This was confirmed by the histopathology of the curettings. A delay in diagnosis and treatment could lead on to involvement of the adjacent joints.

The lesion can be mistaken for pyogenic osteomyelitis as in this case or for a tumour. Surgery is usually reserved in cases where the lesion is adjacent to a joint or to aid in diagnosis in when there is a diagnostic dilemma.

Conclusion

If the tuberculosis is confined to one bone the prognosis is good; but if it is multifocal, the prognosis cannot be predicted. If there are multiple lesions probably of infective origin, consider tuberculosis as one of the differential diagnosis, especially in an immunocompromised patient.

References

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