

Metaphyseal tuberculosis in pediatric age group – A Rare presentation

Vikram V Kadu¹, K A Saindane¹, Ninad Godghate¹, Neha Godghate¹

Abstract

Introduction: Tuberculosis may develop in the skeletal system apart from its primary location, the lungs. When tuberculosis involves a patient's skeleton, it is the involvement of his joints such as spine, hips, knees, feet, elbows, wrists, and shoulders, in this order of frequency. Osteoarticular tuberculosis of tibial metaphysis is uncommon in paediatric age group. It is important to recognize skeletal tuberculosis early because early treatment can effectively eliminate long-term morbidity.

Case presentation: A 7 yr old male presented to OPD with swelling and dull aching pain over right knee joint. Radiograph of right knee showed lytic lesion over the metaphyseal region of tibia sparing the epiphysis. Further investigations showed presence of multiple tuberculous bacilli. Anti-Kochs treatment was started immediately and patient was treated conservatively. Four drugs (HRZE) for the period of 12 months were given. Radiographs at 2 years follow-up showed healed lesion.

Conclusion: Rare and unusual locations of osteoarticular TB often pose a problem of differential diagnosis. Meticulous history and Clinical examination helps in reaching the diagnosis. Starting of AKT drugs as soon as reports show presence of tubercular bacilli plays a vital role in treatment as well as functional outcome of the patient.

Keywords: Tibia, Metaphysis, Tuberculosis, Paediatric, Rare.

Introduction

Tuberculosis remains a major public health problem in India today. Osteoarticular TB constitutes 1.7-2% of all tuberculosis. Osteoarticular tuberculosis is known for its atypical presentations [1]. The infrequent occurrence of these forms of tuberculosis poses a diagnostic challenge for the treating clinicians and often results in delayed recognition and treatment. Early diagnosis and prompt treatment is of utmost importance for good clinical outcome.

Case Presentation

A 7 yr old male presented to OPD with swelling and dull aching pain over right knee joint [Fig 1]. The patient had tenderness, swelling over the knee joint. Local temperature was raised. Inguinal lymphnodes were not palpable. Radiograph of right knee [Fig 2] showed lytic lesion over the metaphyseal region of tibia sparing the epiphysis. The patient was further investigated. Investigations showed raised ESR with lymphocytosis. Aspiration biopsy and smear stained with Zeil Nelson stain [Fig

3,4] showed presence of multiple tuberculous bacilli. Anti-Kochs treatment was started immediately and patient was kept under closed observation and was treated conservatively. Four drugs (HRZE) for the period of 12 months were given. Radiographs and blood tests were performed every 3 months until treatment completion. Non-weight bearing was advised, and knee was protected in a above knee slab for 6 weeks. Partial weight bearing was allowed at 6 weeks and progressed to full weight bearing at 10 weeks. Two years

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¹Department of Orthopaedics, ACPM Medical College, Dhule - 424001, Maharashtra, India..

Address of Correspond

Dr. Vikram Vilasrao Kadu
Plot no. 20, Kadu House, Barde layout,
Friends colony, Katol Road, Nagpur - 440013, India.
Email : vikram1065@gmail.com

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Fig.1: clinical photograph

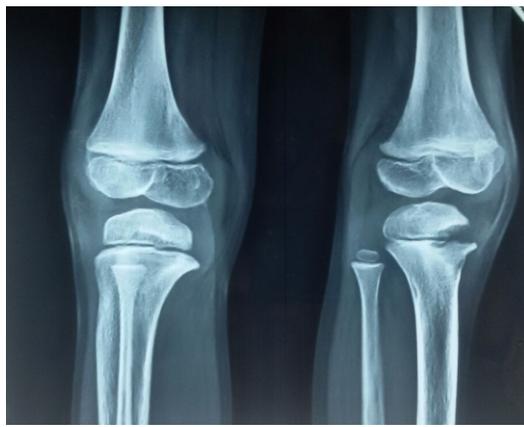


Figure 2: X-ray at presentation (pre - treatment)

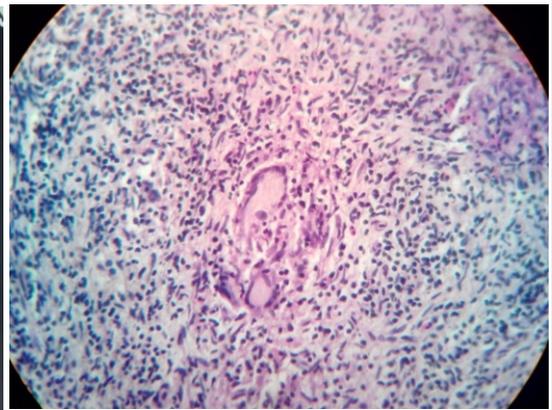


Figure 3: histopathology slide

follow-up didn't show any increase in the size of the lytic lesion. Clinically, pain and swelling subsided and discharging sinus had completely healed. Patient's general condition also improved. Patient has complete range of movement [Fig 5]. Radiographs at 2 years follow-up showed healed lesion [Fig 6].

Discussion

Extrapulmonary *M. tuberculosis* is reportedly on the rise, and may manifest itself at a number of sites in the body, including the peripheral skeleton. It is important to recognize skeletal tuberculosis early because early treatment can effectively eliminate long-term morbidity. Knee joint is the largest joint in the body having the largest intra-articular space. It is the 3rd most common site for osteo-articular TB and accounts for 10% of all skeletal TB lesions. Acute suppurative presentation is one of the atypical forms of osteoarticular tuberculosis and closely mimics acute pyogenic infection or septic arthritis. It is thought that cartilage is destroyed by pannus and proteolytic enzymes, but in tuberculosis of the knee

pannus does not proliferate over the areas of joint contact and pressure. Skeletal TB being extrapulmonary, is more challenging than pulmonary TB as it is less common and less familiar to surgeons. The common site, lack of awareness, and ability to mimic other disorders clinically and on radiographs, leads to diagnostic and therapeutic delays. The acute suppurative presentation is a rare and atypical form of osteoarticular tuberculosis. It has close resemblance to acute pyogenic infections or septic arthritis and pose significant diagnostic dilemma for the unwary. A vigilant and methodical approach is the key for managing acute suppurative tubercular presentations [2]. The various risk factors in children described are recent tuberculosis contact, previous pulmonary tuberculosis, malnutrition, poor sanitation, overcrowding, exanthematous fevers, diabetes, trauma, previous steroid therapy, and immunodeficiency [3,8]. Anti-tubercular drugs are the main treatment modality. A minimum of 12 months of AKT is necessary to prevent recurrence. Surgical management should be reserved for cases resistant to AKT or for those with deformity or painful joint. In such cases

surgery has a limited role, except for biopsy.

Conclusion

TB knee in paediatric age group is very rare. Lytic lesion with long standing history should never be ignored. We concluded that TB Knee is a very rare condition and can be treated conservatively unless associated with metastatic changes or any other complications. Conservative treatment with AKT has excellent results without any complications.

Clinical Message

The atypical acute suppurative presentations of osteoarticular tuberculosis do exist. Unless specifically considered, this diagnosis will be missed with the typical aerobic and anaerobic cultures. These pathologies can be conserved with strict supervision on doses of AKT and blood profile. Surgical exploration and resection is the treatment of choice when associated with complications..

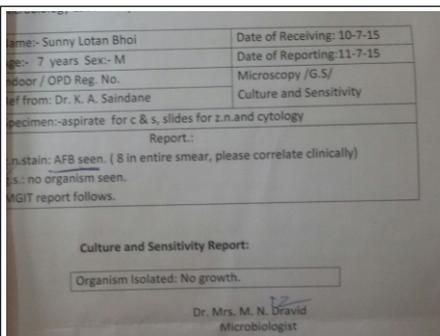


Figure 4: microbiology report



Figure 5: complete range of movement



Figure 6: X-ray at 2 yrs.

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