Tuberculous Osteomyelitis of the Patella

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Introduction

Tuberculous osteomyelitis of the patella is a very rare condition. Out of the 100 cases of patellar osteomyelitis reported in literature, the exact incidence of tuberculous osteomyelitis is not yet known. Osteomyelitis of the patella is generally considered to be a disorder of childhood. Literature points towards three modes of acquiring the infection: direct invasion following injury, haematogenous, and local from prepatellar bursitis.

This paper reports a case of tuberculous osteomyelitis of the patella in a 14 year old female. The benign clinical presentation and the tuberculous aetiology are emphasized.

Case Report

A 14 year old female child presented to our institute with complaints of pain in the right knee, primarily an anterior knee pain since a month. The pain was present throughout the day and aggravated after climbing the stairs and after getting up from sitting position. There was no history of injury, fever, weight loss, constitutional symptoms, other bone or joint pains, significant family history. Patient did not give any past history of tuberculosis or contact with a known case of tuberculosis.

On examination, we found minimal diffuse swelling over the anterosuperior aspect of the patella and tenderness over the anterior surface of the patella without any other signs of frank infection either locally or at any other part of the body. There was no obvious involvement of the knee joint as the patient had a full knee range-of-motion. Radiograph of the patella in anteroposterior and lateral projections did not show any pathology. However, the skyline view of the patella showed erosion on the anterolateral surface of the patella. At this time, the patient had a total white blood cell count of 8,500, lymphocyte count of 28 and neutrophil count of 64. The erythrocyte sedimentation rate (ESR) was 38 mm at the end of one hour. Because of the equivocal reports of the investigations, it was decided to do an open biopsy of the lesion and send it for histopathology. Using a small incision, the bony lesion was scraped and the material was sent for analysis. The microbial culture did not grow any organism. The histopathology report, however, came as tuberculous osteomyelitis. Radiograph of the chest was done to rule out any pulmonary focus but it was normal.

On confirmation of the diagnosis, four-drug anti-tuberculous treatment was started (isoniazid, rifampicin, streptomycin, pyrazinamide along with pyridoxine). The patient was advised to carry out normal day-to-day activities and to refrain from any sporting activities for a period of six to eight weeks. At three months, the patients’ ESR came down to 25 and she had full clinical recovery. At 6 month and 9 month follow-up, patient had no signs of infection...
with the last ESR falling down to 8. Minimal quadriceps wasting which had developed improved after physiotherapy. At two year follow-up the patient was asymptomatic with no evidence of any recurrence.

Discussion

Rarity of this condition is reflected by paucity of literature on tuberculous osteomyelitis of the patella. Most of the cases reported are in the age group of 5 to 15 years and are due to pyogenic infection with Staphylococcus aureus. Before the age of five years the patella is more or less cartilaginous in nature and hence osteomyelitis of the patella usually does not manifest at that age. Other organisms such as streptococcus, escherichia coli and clostridium bifermentants have also been indicted. Namey and Frogameni reported co-existent Mycobacterium intracellulare osteomyelitis of the patella and septic arthritis of the knee in an adult patient with pulmonary sarcoidosis. Evans reported osteomyelitis of the patella secondary to prepatellar bursitis. Vaninbroukx reported three cases of osteomyelitis of the patella secondary to haematogenous spread but none of them were due to tuberculosis. Richter et al gave an account of seven cases of tuberculous osteomyelitis, all of which presented late and the lesion in all was situated within the corpus of the patella. Thus, three modes of acquiring the infection are clear: direct invasion following injury, haematogenous, and local from prepatellar bursitis.

In our opinion, tuberculous osteomyelitis of the patella, as all other skeletal tuberculosis, is primarily a haematogenous infection. Index patient did not show any sign or symptom of the primary focus. We would emphasize upon the very innocuous clinical presentation as patient presented with pain on anterior aspect of the patella, aggravating after climbing up the stairs. There was no other joint involvement and all the laboratory findings were equivocal. Minimal erosion was seen in the skyline view of the patella while the standard radiographs did not show any abnormality.

It is the clinical presentation of the patellar osteomyelitis that makes it prone for delay in diagnosis as reported in literature. The lack of clinical suspicion, due to rarity of the entity, could be another cause for the delay. A high index of suspicion should thus be maintained in cases of patellar pain with or without signs of infection. Open biopsy may be necessary in doubtful cases, as in our case, because we should establish the diagnosis before starting anti-tuberculous drug treatment. Standard course of drug therapy for nine months should be adequate for a complete cure.

References