

PATELLAR TUBERCULOSIS- A CASE REPORT

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CASE PRESENTATION

A 21-year-old male came with complaints of left knee pain with progressive swelling for 3 months. Patient had history of 5 Kg weight loss in past 3 months with intermittent fever. There was history of cough without sputum. Patient belonged to low socio-economic status with no family history of tuberculosis. On local examination, left knee swelling with mild tenderness were noted. There were no external discharging sinuses. On palpation there is doughy feel of the swelling with tenderness over patella. There was normal range of movements of the left knee joint. Laboratory investigations revealed hemoglobin level of 11 gm /dl, total leucocyte count of 8700 /mm³ with lymphocytosis erythrocyte sedimentation rate was 48 mm (Westergren) in the first hour. C-reactive protein was 11 mg/L. Serology for HIV & HBsAg were negative. Ultra sound abdomen and pelvis was done which shows bilateral inguinal lymphadenopathy.

On X-Ray of left knee, antero-posterior and lateral views show a well-defined lytic lesion in patella with sclerotic margins noted. There is no cortical breach and articular surface appears intact.

CT scan was done which shows a well-defined osteolytic lesion.



Figure 1

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MRI was done. MRI left knee shows a well-defined T1W hypointense lesion in patella. PD fat sat / T2W images shows hyperintense lesion with central hypointense area. There is T2W hyperintense collection noted in patella - femoral joint. PD fat sat hyperintense thickened synovium with diffuse muscle edema noted around knee joint. PD fat sat hyperintense bony edema noted in distal femur, patella and proximal tibia. Enhancement could not be evaluated as contrast not done.



Figure 2

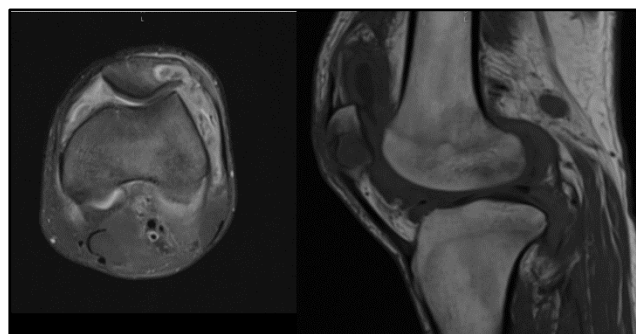


Figure 3

Subsequently a chest radiograph was taken for this patient, after MRI, in view of tuberculosis, chest X – Ray PA view was taken. There were multiple diffuse well defined small nodular opacities in bilateral lung fields, suggestive of miliary tuberculosis.



Figure 4

CLINICAL DIAGNOSIS

A provisional diagnosis of tuberculosis of patella was given.

DIFFERENTIAL DIAGNOSIS

Differential diagnosis includes infectious conditions like osteomyelitis, tumours of patella like osteoblastoma, chondroblastoma, Benign lesions include osteoid osteoma and inflammatory conditions like gout.^{1,2}

DISCUSSION OF MANAGEMENT

India accounts for about quarter of global tuberculosis burden.

In 2016, 28 lakh cases occurred, and 4.5 lakh people died due to tuberculosis. It is a wide disease spectrum involving multiple organs caused usually by mycobacterium tuberculosis or mycobacterium bovis. Extrapulmonary tuberculosis can occur as a primary form of disease without pulmonary tuberculosis or it may occur as a result of hematogenous spread of primary pulmonary tuberculosis. Skeletal tuberculosis is estimated to affect 1-3% of patients with tuberculosis. Tuberculosis involving the weight bearing appendicular joints is second only to spine. Hip and knee are most common sites with ankle, shoulder, elbow, pubes and wrist rarely involved. Isolated patellar tuberculosis is very uncommon with incidence of less than 0.1% of osteoarticular tuberculosis.^{3,4}

Though knee is the third most common site of skeletal tuberculosis,^{4,5} patellar tuberculosis is very rare. It is often misdiagnosed due to its rarity.⁶

The bacilli reach knee by hematogenous spread. The initial focus may start in synovium which leads to congestion of synovial membrane. The synovial membrane becomes swollen with increased thickness. There is increase in joint fluid secretion. The pannus may grow between the cartilage and bone which may cause detachment of cartilage. The erosion of cartilage exposes the subchondral bone. As the disease progresses the pannus erodes the cartilage and causes bone destruction. The joint cavity is filled with sequestered flakes of cartilage or with granulation tissue.⁷

Clinical features include progressive increase in pain and swelling of knee. On palpation the swollen thickened synovium gives a doughy feel and in later stages there may be movement restriction.⁵ In advanced cases they may present with deformities and muscle wasting.

Diagnostic imaging includes radiograph of knee which shows a translucent lesion in patella containing a central bone sequestration with peripheral sclerotic rim and soft tissue swelling. In advanced cases there may be marginal erosions and decrease in joint space. MRI and FDG – PET CT Scan can locate the lesion and its soft tissue extension. MRI also identifies marrow signal changes in adjacent bones. Synovial fluid analysis may also be done. Synovial biopsy is taken in cases where there is difficulty in establishing the diagnosis and to differentiate from other infections.

Treatment options include ATT, Antitubercular drug regimen is the mainstay of treatment. Synovectomy is done with removal of loose bodies and cartilaginous debris.⁷ Bone curettage is considered in advanced stages.

Anti-tubercular drug treatment, traction and ambulation are continued in post-operative period. Patients have excellent prognosis when they begin treatment at synovitis stage.⁷

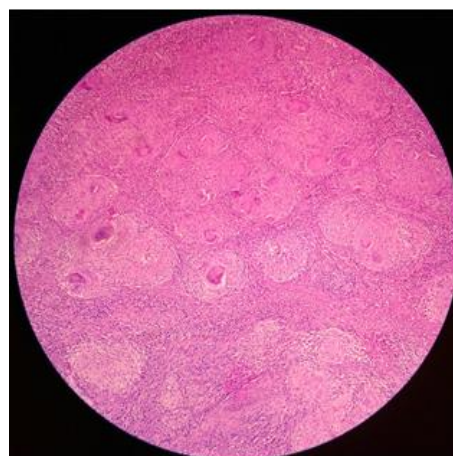


Figure 5. Microscopic Image

FINAL DIAGNOSIS

After starting anti-tubercular treatment for 3 weeks, synovial biopsy was done, and sample was sent for histopathological examination. On microscopic examination, well-formed granulomas with epithelioid cells, giant cells and caseous necrosis were seen. Lymphoplasmacellular infiltrate and cyst-like spaces were noted and the final diagnosis of tuberculosis of patella was made.

Patellar tuberculosis though difficult to diagnose, due to its rarity in location the possibility of tuberculosis should be suspected in osteolytic lesions of patella in endemic countries like India and in immunocompromised patients.⁸ The diagnosis is confirmed by histopathology. Regular anti-tubercular drug regimen shows excellent prognosis.

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