CASE REPORT

Tuberculosis of the patella imitating chronic knee synovitis

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SUMMARY

Tuberculosis of patella is a rare occurrence with incidence of less than 0.15% in the literature. Owing to its rarity the diagnosis is usually missed. Here we present a case of tuberculosis of the patella, being treated as chronic synovitis elsewhere. An 11-year-old boy presented to us with chronic knee swelling and a draining sinus of 5 months duration. He was being treated with broad spectrum antibiotics and incision and drainage. Standard X-rays revealed a lytic area with surrounding osteomyelitis of the patella with soft tissue oedema. Diagnosis was confirmed on biopsy. The patient was managed by curettage and excision of the sinus tract along with antitubercular treatment. The patient responded well to antitubercular therapy and gained excellent functional range of movement. In today's era of potent antituberculous drugs and decreasing tuberculosis incidence the rare and unusual locations of tuberculosis such as patella should be borne in mind while dealing with chronic lesions of the knee especially in tubercular endemic areas. A timely diagnosis helps in regaining good range of motion and a satisfactory outcome.

BACKGROUND

Tuberculous bacilli have lived in symbiosis with mankind since time immemorial. In spite of improved standards of living and extremely effective antitubercular therapy today, there are still 30 million people suffering from tuberculosis around the globe.¹ According to WHO, 1.4 million people died of this disease in 2011 alone.² Osteoarticular tuberculosis accounts for 1–3% of all tuberculosis cases of which 10% are found in the knee.¹ Tubercular involvement in the knee joint is primarily synovial, with local extension eroding the bone. Pure tuberculous osteitis is rare. A search of the literature shows that tuberculosis of the patella accounts for less than 0.09–0.15% of all osteoarticular cases.^{1–3} Owing to the rarity of the lesion the diagnosis is usually delayed and the outcomes are compromised. We here present one such case report.

CASE PRESENTATION

This is a case report of an 11-year-old boy who presented to us with a knee swelling and a draining sinus of 5 months duration (figure 1). There were no constitutional symptoms or history of weight loss. The patient was on broad spectrum antibiotics and incision and drainage was performed outside. The patient belonged to the lower socioeconomic

Figure 1 Clinical photograph of the patient presenting with swelling and sinus.

strata and was not immunised (including the BCG vaccine).

On examination there was a swelling over the knee with a draining sinus. Medial joint line tenderness was present and the range of motion was 20–90°. No inguinal lymphadenopathy was seen. Chest examination was essentially normal.

INVESTIGATIONS

Lateral X-ray of the knee revealed a dense sclerotic bone surrounded by a lytic area (figures 2 and 3). MRI showed a sequestrum with soft tissue collection. Pus culture was negative. Blood examination revealed anaemia, increased erythrocyte sedimentation rate (48) and C reactive protein. Mantoux test had 12×10 mm induration.

The patient underwent open biopsy and sinus tract excision. Intraoperatively, there was synovial

Figure 2 Plain anteroposterior (AP) and lateral X-rays; lateral X-ray showing a dense sclerotic bone surrounded by a lytic area.

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Figure 3 Digital lateral X-ray at presentation showing a dense sclerotic bone surrounded by a lytic area.

hypertrophy and flaky cheesy material inside the joint. Intraosseous tissue histology confirmed the diagnosis of bone tuberculosis, revealing caseous necrosis surrounded by epithelioid and giant-cell follicles. Synovial biopsy diagnosed non-specific chronic synovitis.

TREATMENT

The patient was started on multidrug chemotherapy—isoniazid 5 mg/kg, rifampicin 10 mg/kg, pyrazinamide 25 mg/kg and ethambutol 15 mg/kg. Plaster cast immobilisation was given for 3 weeks. Thereafter, a passive range of motion exercises was started.

OUTCOME AND FOLLOW-UP

Sinus healed in 8 weeks; the pain was relieved and the patient gained a good functional range of 0–100°. There are no signs of reinfection at 1-year follow-up.

DISCUSSION

The incidence of patella tuberculosis in the international literature ranges from 0.09–0.15%.^{1–3} Tuli¹ reported patella tuberculosis in a series of 1074 lesions in 980 patients. Galois *et al*,⁴ in their 2003 literature review, found 10 cases of patella tuberculosis ever reported. Owing to the rarity of the disease and non-specific clinical features, especially in early stages, diagnosis is often missed.

The disease mainly affects adolescents and young adults. Most of the reported cases have been men.^{3–5} The initial symptoms are generally non-specific. Constitutional symptoms may

be absent. The patient presents mostly with features of chronic knee synovitis. The appearance of a fistulised prepatellar cold abscess argues for a diagnosis of tuberculosis.⁴ The most suggestive aspect, however, is osteolysis containing a central bone sequestration, bordered by peripheral sclerosis.^{6–9} Pus culture reports are mostly negative and materials mostly fail to demonstrate acid-fast bacilli. Confirmation is made on biopsy. When recognised the condition at an early stage and treated with multidrug chemotherapy, the results are usually good. The patient gains a full functional range and becomes pain-free. No records of reinfection after the multidrug chemotherapy were found on review of the literature.

Learning points

- ▶ With improved standards of living and potent antitubercular drug, the incidence of tuberculosis is gradually decreasing. However tuberculosis still remains an important infectious disease especially in developing countries.
- ▶ A high index of suspicion should be borne in mind especially in tubercular endemic areas in order to pick up such cases at a relatively early stage to ensure a favourable result.
- ▶ Also, this case report further shows that tuberculosis infection can mimic any other disease and unless kept as a differential would often be missed especially in unusual sites.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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