CASE REPORT

A very rare cause of chronic foot pain in a child: metatarsal tubercular osteomyelitis

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SUMMARY

Pure tubercular osteomyelitis without joint involvement is rare and easily missed. Moreover the lesion is common in spine and large joints like hip and knee. The involvement of isolated metatarsal has been described rarely, only as few sporadic case reports. We present one such case of isolated first metatarsal involvement in an 8-year-old child who presented with chronic pain in left foot for over 6 months. The X-rays suggested a lytic lesion and lesion was confirmed on histopathology and acid-fast bacteria staining. The patient was treated with multidrug antitubercular chemotherapy. The results were excellent with complete healing of the lesion.

BACKGROUND

Tuberculous bacilli have lived in symbiosis with mankind since time immemorial. Recent times have seen an increase in the incidence for a number of reasons. A few of the hypothesised causes include an increase in the incidence of HIV, greater use of immunosuppressive drugs and the emergence of multidrug resistant bacilli. Osteoarticular tuberculosis accounts for 1–3% of all tuberculosis cases.[1] The disease usually involves spine and large joints like hip. Pure tubercular osteomyelitis is rare and is often missed. The literature review suggests an incidence of less than 0.5% for metatarsal osteomyelitis.[1] The lesion is common in tarsal bones and usually involves the neighbouring joint. However, we present one such report involving only first metatarsal without any joint involvement.

CASE PRESENTATION

An 8-year-old boy with a 6-month history of pain in his left foot presented to our outpatient department. The pain was localised over the first metatarsal, deep aching in character, had increased in intensity in past 6 months, was aggravated on walking and decreased but never disappeared with rest and over-the-counter analgesics. The boy had taken on and off non-steroidal anti-inflammatory drug (NSAID) and broad spectrum antibiotics without any relief. There was no history of constitutional symptoms. Patient's mother had history of pulmonary Koch's and child was immunised with BCG vaccine.

On examination, there was tenderness on the dorsal aspect of first metatarsal. No sinus was seen. The skin was normal and minimal swelling was present over dorsomedial aspect of first metatarsal. Range of movement at ankle, Lisfranc and Chopart joints were normal. No regional lymphadenopathy was seen. Chest examination was essentially normal.

INVESTIGATIONS

Routine blood investigations revealed anaemia (haemoglobin 9.8 g%) with elevated erythrocyte sedimentation rate (ESR) of 45 mm/h. Mantoux was positive with maximum induration of 21 mm×19 mm.

X-ray of the foot showed an eccentric well-defined lytic lesion, with surrounding osteopenia, no periosteal reaction and no articular involvement (figure 1).

Trucut needle biopsy was performed and material was sent for pus culture and sensitivity, acid-fast stain and histopathology. The culture showed no growth; however, acid-fast bacteria stains were positive and histopathology showed giant cell granuloma with central caseous necrosis confirming the diagnosis of tubercular osteomyelitis (figure 2).

DIFFERENTIAL DIAGNOSIS

A bony pain not relieved with analgesics should arouse a suspicion of infection or neoplasia. Lack of any periosteal reaction with no new bone

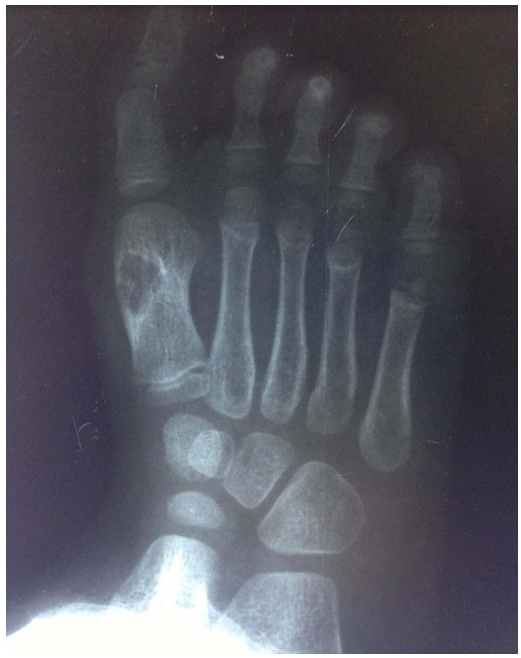

Figure 1 Plain anterioposterior radiograph showing eccentric lytic lesion in first metatarsal in skeletally immature foot.

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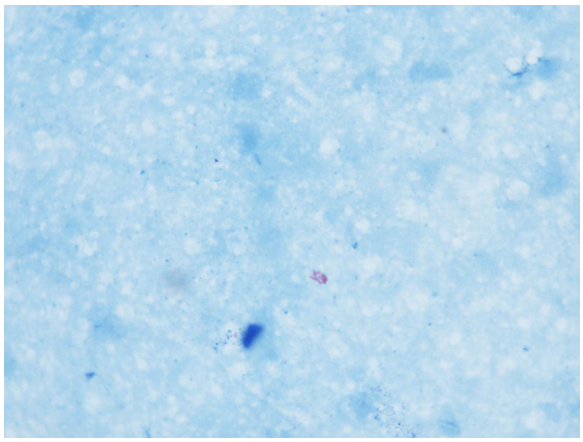

Figure 2 A photo micrograph of acid-fast bacteria stain of the sample obtained in biopsy.

formation was against a purulent infection and biopsy ruled out any possibility of malignancy/benign cyst.

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. The antitubercular drug was continued for 1 year. Pyrazinamide was stopped after 3 months and ethambutol at 6 months. Patient was initially given below-knee slab for 6 weeks and NSAIDs as per pain. Patient was allowed assisted weight bearing immediately with crutches, partial weight bearing at 6 weeks and full weight bearing at 12 weeks.

OUTCOME AND FOLLOW-UP

The results were excellent. Pain was relieved in 6 weeks, ESR reduced in 3 months and patient was asymptomatic. Radiological recovery occurred in 12 months. The follow-up X-rays were taken at 3, 6 and 12 months which showed progressive sclerosis and healing of the lesion (figure 3A–C).

DISCUSSION

The isolated metatarsal tuberculosis has been described in the past but its occurrence is very rare.[2] Moreover, the lesion is described usually in adults.[3] The isolated lesion in skeletally immature child has been rarely described.

The most common presentation is long-standing pain and swelling. Most described cases lack constitutional symptoms.[2] The condition may be associated with a chronic ulcer/sinus. Regional lymphadenopathy is common in tubercular osteomyelitis. However, no sinus or enlarged regional lymph nodes were seen in our case.

ESR is generally elevated and Mantoux is positive in other reported cases of tubercular osteomyelitis.[1–3] Similar findings were seen in our case.

Radiological picture varies according to the stage of disease and may mimic purulent infection or malignancy in late stages. A classical description of tubercular osteomyelitis, though rare, was seen in our case which showed an eccentric focal area of osteolysis with surrounding osteopenia.[4]

Multidrug chemotherapy is the mainstay of treatment. Most described cases do well with conservative management.[1 3] However, a very high index of suspicion has to be kept to diagnose these lesions, especially in endemic areas. Rarity of lesion, initial benign course and radiological resemblance to commoner purulent/cystic lesion generally delay the diagnosis which can effect the results adversely. An early biopsy generally helps to avoid the delay in diagnosis.

Learning points

This case shows a variety of unusual findings.

- The isolated metatarsal tuberculosis has been rarely described in skeletally immature child.
- A very high index of suspicion must be borne in mind to diagnose such lesions early.
- It strengths the fact that osteoarticular tuberculosis can mimic other commoner disease, no site or age group can be considered safe and until a high suspicion is kept, such lesions can be easily missed.
- An early biopsy in such lesions avoids undue delay in diagnosis.

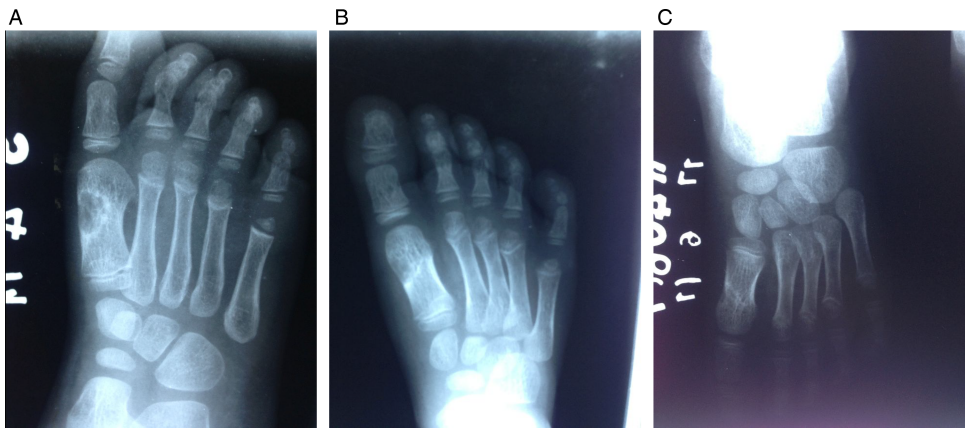

Figure 3 (A) Plain anterioposterior (AP) radiograph at 3 months of ATT showing sclerosis at rim. (B) Plain AP radiograph at 6 months of ATT showing sclerosis of lesion. (C) Plain AP radiograph at 12 months of ATT showing completely healed lesion. ATT, anti tubercular therapy.

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Competing interests None.

Patient consent Obtained.

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