Tuberculosis of the calcaneus in children

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ABSTRACT

Osteoarticular tuberculosis represents 1.7–2% of all tuberculosis (TB). The localization in the foot is rare and accounts for less than 10% of osteoarticular TB. The following report describes the case of a 7-year-old boy who presented with a gradually increasing inflammatory swelling over the lateral aspect of the right ankle. An X-ray of his right ankle showed an osteolytic image at the calcaneus. Diagnosis was confirmed by the presence of a tuberculoid granuloma with caseous necrosis on bone biopsy.

Case report

A 7-year-old boy presented with complaints of pain in his right foot associated with a gradually increasing inflammatory swelling over the lateral aspect of the right ankle. These symptoms began 6 months ago in the context of a fever. His past medical history did not reveal any repeated infections.

Biologically, a hemogram showed hyperlymphocytosis and an erythrocyte sedimentation rate (ESR) that was found to be elevated with a value of 45 mm after one hour. Human immunodeficiency virus (HIV) was found to be negative.

Radiographs of the right ankle objectified an osteolytic lesion of the calcaneus (Figs. 1 and 2). Considering the possibility of contagious tuberculous (his father was treated for pulmonary tuberculosis [TB]) and the fact that he was in an endemic area, the diagnosis of bone TB was considered.

The chest radiograph was normal. The tuberculin skin test was positive.

Aspiration of the small swelling did not find the presence of acid fast bacilli (AFB). The patient had received a bone biopsy and histopathological examination of the biopsy showed an epithelioid granuloma and giant cells with caseous necrosis (Fig. 3).

The boy was treated with anti-tubercular drugs for 9 months with a very good evolution. There was a loss of radiological signs with a decline of 18 months.

Introduction

Tuberculosis of the foot is extremely rare and accounts for less than 10% of osteoarticular TB. The diagnosis is often made at a late stage. This study reports a rare example of a 7-year-old boy who presented with a rare localization of extra-pulmonary TB located at the foot involving the calcaneus to draw attention to this exceptional location in children and an atypical presentation of a clinical observation.
Bone TB is a leading cause of morbidity and mortality in many developing countries and actually in the entire world due to the increased incidence of TB in HIV-positive patients. In Morocco, it occurs like an endemic disease. Its incidence has been relatively stable since 1994, with 300,000 new cases per year [1].

Osteoarticular TB represents 1.7–2% of all forms of TB. It is the third amongst extrapulmonary TB after the peritoneal and lymph node forms of TB. It is a disease that must be diagnosed quickly before the disease progresses and injures or destroys the bone or joint.

In osteoarticular TB, the spine and hip are the most commonly affected areas. The ankle and foot are rarely affected and represent only 1% of all infections of TB and about 10% of osteoarticular localizations [2,3]. The calcaneus is most often affected, but only calcaneal localization without joint involvement is extremely rare, and diagnosis is often made at a late stage because osteoarticular TB is paucibacillary and it is difficult to isolate or cultivate the Koch bacillus.

Clinically, the symptoms are represented by pain, stiffness and edema of the heel or whole foot. Fistulas occurs very late [4]. Radiologically, the common sign is a cystic lesion in the middle of the calcaneus without sequestrum, but a bone sclerotic appearance can be observed. CT and MRI play an important role in its early diagnosis [5,6]. Biological examinations help in diagnosing the disease with elevated ESR and c-reactive protein (CRP). The tuberculin intradermal reaction (IDR) can be negative. Isolation of Mycobacterium TB and its culture are difficult because osteoarticular TB is paucibacillary [7,8].

The diagnosis of TB must be concluded in the face of a cystic lesion of the bone with blurred boundaries and sclerosis minimal peripheral. Biopsy of the cystic lesion is an essential step to make a positive diagnosis. The only confirmatory test is isolation of the acid-fast bacillus (AFB).

The search of other localisations of pulmonary and extrapulmonary TB is systematic.

TB treatment is the basis of treatment for a period of 9–12 months. Surgery may be indicated as a debridement, curettage or excision of a sequestrum [2]. A bone graft can be performed before the apparition of a loss of bone [9–12]. The plaster immobilization is recommended [13,14]. The course and prognosis depend on an early diagnosis and therapeutic management.
Conclusion

The location of TB at the calcaneus is rare. The diagnosis should be suspected in view of clinical and radiological signs, especially in endemic countries.

The rarity of the lesion and its atypical presentation make the diagnosis of TB of the calcaneus very difficult based on clinical criteria. The clinical observations of this case highlight the unusual skeletal manifestations of TB and should be considered to prevent delay in diagnosis and therapeutic management.

Conflict of interest

None declared.

REFERENCES