Actinomycotic mycetoma of the talus with bone involvement: Case report

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Abstract

Mycetoma is a chronic granulomatous infection of bacterial (actinomycetoma) or fungal origin. It is uncommon in Maghrebian countries. We report on the case of a 44-year-old Tunisian woman with a 15 year history of actinomycetoma involving the foot. The diagnosis was based on clinical and bacteriological arguments. An X-ray revealed bone lesions by contiguity. The patient was treated with combined antibiotic therapy.

Introduction

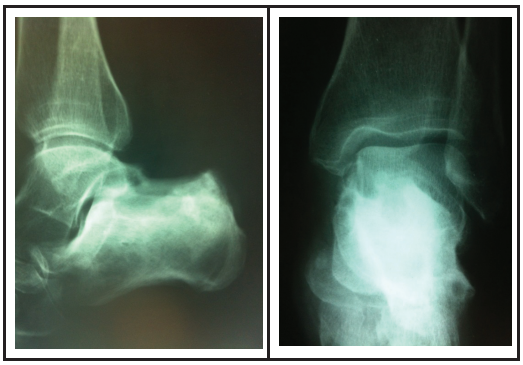
Mycetoma is a chronic granulomatous infection of cutaneous and subcutaneous tissue, in which fungal (Eumycetoma) or filamentous bacterial (actinomycotic mycetoma) causative agents produce grains[1]. It follows penetrating injury inoculating soil organisms. The classic presentation involves tumefaction, multiple draining sinuses, and grain-filled pus. It is endemic in tropical and subtropical regions but uncommon in Europe and Maghreb. The diagnosis is then often delayed, resulting in severe functional consequences. We report on the observation of an actinomycotic mycetoma involving the foot with a prolonged evolution, complicated by an underlying bone involvement.

Case report

The patient was a 44-year-old Tunisian woman, living in a rural area, who consulted for a swollen right foot which hampered walking. Her medical history included hypertension, treated with furosemide.

The history of the disease dates back to 15 years, marked by the appearance of an inflammatory nodule on the sole of the right foot, without prior significant trauma. The swelling continued to expand slowly in spite of repeated antibiotic treatments, resulting in fistulization to the skin. The clinical presentation was an infiltrated and inflammatory plaque of the right sole, affecting the entire heel. It had indistinct limits with a bumpy purplish surface, strewn with fistulas, producing pus, and retractile scars. The pressure of the sinus tracts showed the discharge of soft white grains. There was no popliteal or inguinal adenopathy. Neurological, cardiovascular, pulmonary and abdominal examination was otherwise normal. Routine laboratory tests revealed an elevated erythrocyte sedimentation rate (75 mm/hour). The tuberculin skin test and the patient's chest radiograph were normal. The radiograph of the right foot (Figure 1) showed blurred heterogeneous condensation with an inflammatory aspect of the talus. Bone erosions of the inner edge of the talus with gently sloping connection with the cortex were suggestive of extrinsic impairment.

Figure 1: Radiographic view of foot with blurred heterogeneous condensation and bone erosions of the inner edge of the talus and gently sloping connection with the cotex



There was thickening of the opposite soft parts. The whole of it suggest bone lesions by contiguity.

Microscopic examination of the pus from the discharging sinuses showed an actinomycotic grain. Treatment with oral ampicilline and trimethoprime-sulfamethoxazole resulted in a gradual improvement with drying lesions but subsidence of swelling.

Discussion

Responsible agents for mycetomas are present in the soil or on plants, the contamination being transcutaneous, following a trauma caused by thorny plants. The preferred location is then the foot[2,3] and inoculation is seen more often among the barefoot-walking populations, usually adult males aged 20 to 50 years[2,3]. Trauma may be minor and go unnoticed, which was the case in our patient.

The epidemiology of mycetomas is characterized by an endemic region located between the latitudes of 15 degrees south and 30 degrees north[3]. They are sporadically observed in Tunisia[4]. Within a retrospective study conducted over a period of 13 years in a Parasitologic Department, Kallel and all collected 13 cases[4]. The lesions were localized on the foot in seven cases.

Incubation is silent. As has been reported by our patient, the initial lesion takes the aspect of a firm nodule, developing in the soft tissues and by contiguity progressively invading other tissues, muscles, nerves and bones. At status period, the clinical manifestations are characterized by tumefaction, increased volume, and a firm deformity of the affected area with the presence of nodules, scar tissue, abscesses, fistula, and a purulent exudates[3].

The hallmark of the disease includes extrusion of grains. The analysis of macroscopic and microscopic characteristics of the extruded grains allows distinguishing actinomycotic grains from fungal grains: the size, form, and color, together with the presence or absence of clubs or pseudoclubs offer a clue to diagnosis[3]. Actinomycotic grains were identified in our patient.

Progression to bone and destruction depend on the duration and occur with time. They are responsible for pain and functional impairment. Primary mycetoma of bone can also occur by direct inoculation of the fungus or filamentous bacterium via acute traumatic implantation or by means of contamination or through a site of chronic cutaneous compromise[5]. As shown on X-rays in our patient, bone actinomycetoma causes rarefying and destructive lesions with blurred edges erosions and periosteal apposition. Plain radiographic classification of bone changes in mycetoma of the foot from stage 0 to 6 has been proposed by Abd El Bagi[6]. Our patient had periosteal reaction with cortical erosion which occurs in stage 3. The general condition is maintained, the spread of infection to the lymph nodes or organs is possible but rare. This was not observed in our patient despite a prolonged course for 15 years.

The clinical differential main diagnosis of actinomycetomas arises with fungal mycetomas, leprosy and tuberculosis. The prognosis is good with appropriate antibiotic therapy, preferably by combined drug therapy for 6 to 12 months. Beta-lactams are the first-line treatment. Other active antibiotics can be used in case of allergy or poor clinical response. These are essentially erythromycin, clindamycin, tetracycline, sulfonamides or rifampicin. The evolution of bone actinomycosis during antibiotic treatment is often favorable. Surgical treatment is reserved in case of failure of medical treatment.

Conclusion

We reported the clinical and radiographic presentation of a case of talus mycetoma in a 44-year-old woman. Diagnosis of mycetoma may be missed and should be considered in the differential diagnosis of chronic foot swellings. As in our case, progression to bone invasion and destruction occur with time.

Acknowledgment

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References

1. Palestine RF, Roy RS III Diagnosis and treatment of mycetoma. *J Am Acad Dermatol.* 1982; **6**:107-111.
2. Ahmed AO, Van Leeuwen W, Fahal A, Van de Sande W, Verbrugh H, van Belkum A. Mycetoma caused by madurella mycetomatis: a neglected infectious burden. *Lancet infect Dis*. 2004; **4**:566–574.
3. Lynch JB. Mycetoma in the Sudan. *Ann R Coll Surg Eng.* 1964; **35**:319-340.
4. Kallel K, Belhadj S, Karabaka A, Kaouech, A. Ben Osman-Dhahri A. *et al.* What about mycetoma in Tunisia? 13 observations gathered over 13 years. *J Med Mycol.* 2005; **15**: 56-60.
5. Lee DK, Schwartz AK. Primary mycetoma osteomyelitis of the calcaneus with active subcutaneous nodules. *J Foot & Ankle Surg.* 2007; **46**(4):302–306.
6. Abd El Bagi ME. New radiographic classification of bone involvement in pedal mycetoma. *AJR*. 2003; **180:** 665-668.