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Case report

Madura foot: Report of a eumycetoma Moroccan case

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Abstract

Madura foot is a chronic infectious disease, caused by bacterial actinomycetes or by fungi. Mycetoma is endemic in tropical and subtropical areas, where it is a real public health issue. It is a rare and neglected disease in our country. The diagnosis is made by clinical picture, direct microscopic examination and histological study.

The best therapeutic choice is surgical removal of the lesion, followed by medical treatment. An earlier diagnosis and treatment can elicit good results. We report a case of eumycetoma in a 33 year-old Moroccan man, rural worker, treated by Ketoconazole in 12 months, associated with surgical debridement. The evolution was marked by the complete remission of the infection.

Keywords: Madura foot; Eumycetoma; Black grains; Morocco

1. Introduction

Madura foot is first described by John Gill in 1842 in Madras, India. It is a localized chronic suppurative infection of subcutaneous tissue, commonly affecting the foot (Mohammad et al., 2011). Mycetoma is characterized by a clinical triad of chronic induration, draining sinuses, and discharge of granules. It is either actinomycotic or eumycotic in etiology. It is endemic in tropical and subtropical countries with low precipitation (Kallel et al., 2005) rare and little known in other countries as Morocco, where they plagued by sporadic (N'diaye et al., 2000). It remains as a real cause of disability among population living in rural area because this infection is often neglected in the initial stage. We present here a new case of madura foot in Moroccan patient, diagnosed and treated earlier, with a good clinical response.

2. Case report

A 33-year-old man, a rural worker, without any significant medical history and no records of traveling to tropical areas, comes to the consultation, with a one-year history of a progressively enlarging, painful lesion on the sole of his left foot (Figs. 1 and 2). He was treated by doctors with analgesic and antibiotic without any improvement.

Examination revealed a tumefaction that discharges a purulent exudate via skin fistulae, the exudate contains black granules (Fig. 3). The black grains had a soft consistency and different shapes and sizes. Black grains suggest a fungal infection. There was no regional lymphadenopathy and no other abnormalities were found. He could not recall any significant trauma to his foot and, had never gone without footwear. The histological analysis on the cutaneous biopsy showed inflammatory process in hypodermis and hyphae, which confirmed the diagnosis of Eumycetom-

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Figure 1. Tumefaction of the sole of the left foot.

Figure 2. Tumefaction of the sole of the left foot discharging black grains.

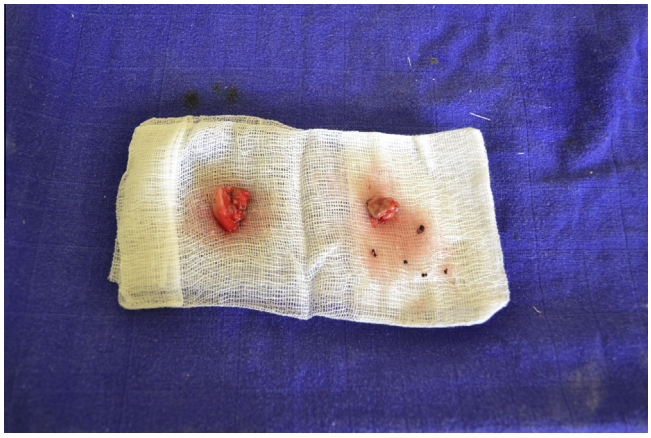

Figure 3. Black eumycetoma grains.

a (Figs. 4 and 5). Laboratory test results revealed no abnormalities in the hemogram. Tests for syphilis and HIV infection were negative. Serologic tests for hepatitis virus types B and C were negative. Standard X-rays of his foot showed no lesion of the bone. The patient was treated by Ketoconazole 400 mg/day for 12 months, associated with surgical debridement. The liver function tests were realized before,

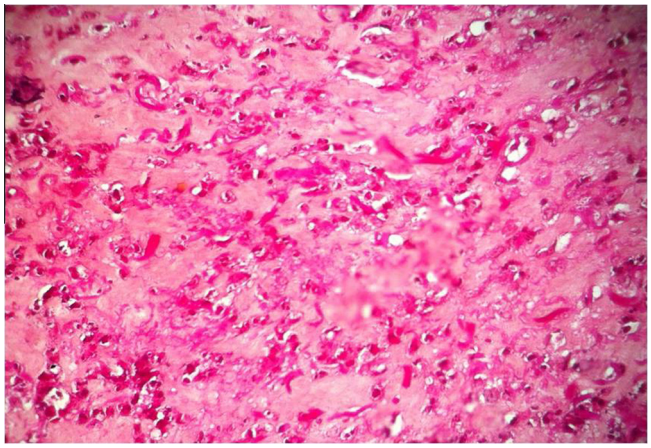

Figure 4. Histochemical staining (Periodic Acid Schiff) shows hyphae.

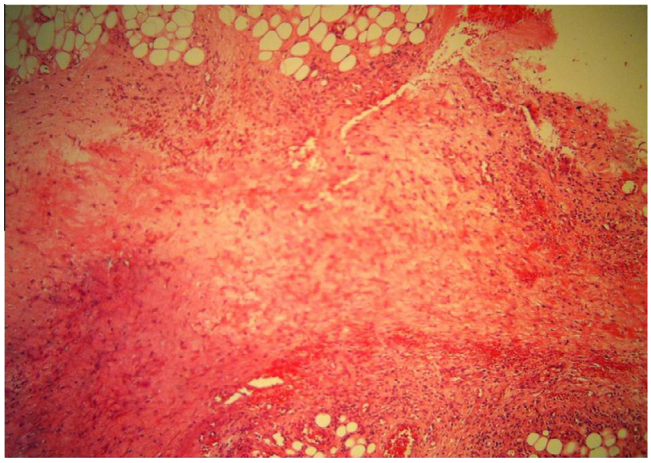

Figure 5. Hematoxyline eosin staining: at low magnification shows a subacute inflammatory process in hypodermis.

every 2 months and after 12 months of treatment, were normal. The evolution was marked by the complete remission of the infection.

3. Discussion

Mycetoma is a chronic granulomatous inflammatory response involving bacteria or fungi that triggers the formation of grains containing aggregates of the causative organisms that may be discharged onto the skin surface through multiple sinuses, causing the progressive development of granulation and scar tissue that can cause deformity (Maiti et al., 2002).

In tropical countries, mycetoma is a real public health issue, but this pathology is quite rare in Morocco (Asly et al., 2010). A few case reports are published (Hommadi et al., 2008; El Gandaoui et al., 2004). A retrospective study was conducted in the dermatology department at Ibn-Sina Hospital in Rabat, 12 cases of mycetoma were collected over a period of 14 years. All patients were living in rural areas and had an agricultural activity. The presence

of black grains was objectified in four cases, white grains in three cases and yellowish in one case (Marc et al., 2011).

The type of mycetoma is often suggested by the color of the grains. Red grains are indicative of an actinomycotic mycetoma. Black grains are consistent with a eumycetoma, a white and yellow colored grains are indicative of either actinomycetoma or eumycetoma (Ahmed et al., 2004).

The differentiation between eumycetoma and actinomycetoma is an important one with regard to therapy (Welsh et al., 2007). The combination of the clinical specific lesions, typical grains and the histopathological appearance (presence of a granulomatous inflammatory reaction with abscesses containing granules of the infecting organism) is characteristic of the diagnosis.

X-rays, tomography, and magnetic resonance imaging are all useful to determine the extension of the lesions in bone and other tissues (Elmaataoui et al., 2011).

Commencement of treatment at an early stage is necessary to prevent complication, as shown in our case (Lupi et al., 2005). Combined medical and surgical treatment is the standard to follow in mycetoma. The medical treatment consists of antibiotic therapy (cotrimoxazole, amikacin or minocycline) for actinomycetes or antifungal therapy (ketoconazole or itraconazole) for eumycetoma (Mahgoub and Gumaa, 1984). In resistant cases of eumycetoma, various antifungals (terbinafine, posaconazole, voriconazole, caspofungin and anidulafungin) are indicated (Estrada et al., 2012). A prospective study showed that Itraconazole in a starting dose of 400 mg then 200 mg for the treatment of patients with mycetoma due to Madurella mycetomatis is safe and well tolerated with minimal side effects. And it is recommended to give itraconazole in a high dose (400 mg) preoperatively to facilitate lesion localization by fibrosis (Fahal et al., 2011).

Surgery is indicated in mycetoma for resistance to medical treatment, better response to medical treatment in patients with massive disease or for localized lesions. The surgical options range from local excisions to amputations. Amputation is indicated in advanced mycetoma not responding to medical treatment with severe secondary bacterial infection (Smith and Kutbi, 1998), hence the importance of earlier diagnosis and treatment.

4. Conclusion

Madura foot is a chronic disease relatively rare in our country. It is probably underestimated. However, it might be encountered in our practicing life. The dermatologist must be aware of this entity. Eumycetoma is a fungal disease that requires an early, accurate diagnosis. Medical treatment and surgical measures could be of great benefit for these patients, a delayed diagnosis leading to functional and esthetical impairments.

Conflict of interest

None.

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