

## **A Case Report of Eumycetoma: Emphasizing the Need for Early Diagnosis and Appropriate Management**

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**Abstract:** Mycetoma is a chronic subcutaneous infection, caused by bacterial actinomycetes or by fungi. It is a neglected disease in our country. The diagnosis is based on clinical findings, histopathological study and microbiological analysis. The treatment depends on the causative organisms, for actinomycetoma it is a long term antibiotics combination whereas for Eumycetoma it is combined antifungals drugs and surgical excision.

**Keywords:** Mycetoma, Eumycetoma, antifungals.

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### **INTRODUCTION**

Mycetoma is a chronic granulomatous infection of the skin, subcutaneous tissues, fascia and bone mostly affecting the foot or the hand, may be caused by actinomycetes (Actinomycetoma) or moulds (Eumycetoma) [1]. The disease is most prevalent in tropical and subtropical regions of Africa, Asia and Central and South America [2]. Infection occurs following repeated minor trauma or penetrating injuries. It commonly affects young adults, particularly males, mostly in developing countries, aged between 20 and 40 years. People of low socioeconomic status and manual workers such as agriculturalists, labourers and herdsmen are most affected [3]. Here we are describing a case of Eumycetoma, which has been misdiagnosed and undergone inappropriate treatment outside.

### **CASE REPORT**

40 yr old male, a construction worker by occupation admitted with complaints of pain and swelling over the left foot for past 1 yr. One year back he had similar complaints for which he had undergone surgical debridement and antibiotic treatment outside. On physical examination, there is diffuse swelling and tenderness in left foot (+). Based on clinical examination and radiological findings he was diagnosed as Synovial sarcoma/Madura foot. Surgical debridement and open biopsy was done. Black granules with granulation tissue and thick pus were found over the plantar aspect of left foot during the procedure. Samples were sent for histopathology and microbiology.

### **Histopathological examination**

The section examined showed fibromuscular tissue with focal collection of acute inflammatory cells forming abscesses. Within the abscesses, there are grains of pigmented fungal hyphae. Palisades of histiocytes forming granulomas surrounded by lymphocytes, plasma cells and foreign body giant cells are noted.

### **Microbiological analysis**

Macroscopically granules were black in colour. KOH mount showed branching intertwining septate hyphae, chlamydoconidia and swollen cells. The grains were washed with antibiotics (Gentamicin) and spread over Sabouraud dextrose agar plates and corn meal agar. After 10 days of incubation, in SDA colonies appeared smooth, powdery with a brownish diffusible pigment in the agar and reverse was dark brown. Microscopically septate hyphae with chlamydoconidia like enlarged cells were seen. On corn meal agar, phialides with minute oval shaped conidia were seen. The organism was identified was *Madurella mycetomatis*.



**Fig. 1: HPE showing pigmented fungal hyphae surrounded by palisades of epithelioid histiocytes and lymphoplasmacytic cells**



**Fig. 2: SDA showing the growth of *Madurella mycetomatis***

## DISCUSSION

Madura foot is endemic in tropical and subtropical regions. Mycetoma was described in 1694 but it was first reported in the mid-19<sup>th</sup> century in the Indian town of Madura, and thus initially called Madura foot. It was first described by Dr. Gill in the year 1842 [3, 4]. It is characterized by a triad of painless subcutaneous mass, multiple sinuses and discharge containing grains [3, 5]. It usually spreads, involving the skin, deep structures and bone results in destruction, deformity and loss of function and may be fatal. It commonly involves extremities, back and gluteal region. The color of the grain can suggest the type of mycetoma either actinomycetoma or eumycetoma [3, 6]. With regard to treatment, differentiation between eumycetoma and actinomycetoma is important [7].

A combined clinical and radiological findings to determine the extension of the lesions and laboratory

findings are required for the diagnosis of mycetoma [8]. In our case the patient has been initially misdiagnosed and had undergone antibiotic treatment and surgical debridement of the lesion. He developed recurrent lesion at the same site. Based on the histopathological and microbiological analysis it has been confirmed as Eumycetoma. Surgical wound debridement was done. The patient has been started on Itraconazole and followed up. Early and appropriate treatment is necessary to prevent complications. Combination of medical and surgical treatment is required for the management of mycetoma. The medical treatment consists of antibiotic therapy (cotrimoxazole, amikacin or minocycline) for actinomycetes or antifungal therapy (ketoconazole or itraconazole) for eumycetoma [9]. In resistant cases of eumycetoma, various antifungals (terbinafine, posaconazole, voriconazole, caspofungin and anidulafungin) are indicated [10]. In case of resistant to medical management, amputation is indicated. Hence early diagnosis and treatment will be beneficial to the patient.

## CONCLUSION

Madura foot is a chronic infection of the skin and underlying tissues. It is caused by either bacteria (actinomycetomas) or fungi (eumycetomas). Actinomycetoma can be completely cured with antibiotic therapy but in eumycetoma early diagnosis and proper management can be beneficial to the patient as the delay in diagnosis may lead to functional impairment.

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