



## Maduramycosis Mimicking Soft Tissue Neoplasm – A Rare Case Report

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### Abstract:

Mycetoma is an uncommon chronic, granulomatous, subcutaneous, inflammatory disease caused by true fungi (eumycetoma) or filamentous bacteria (actinomycetoma). The patient usually presents with indurated swelling in the foot with multiple discharging sinuses. Early clinical diagnosis before the appearance of discharging sinus may be difficult. We reported a case of eumycetoma in a 26 years old male who presented with multiple subcutaneous swelling in the right leg for 4 years, which was clinically diagnosed as benign soft tissue swelling.

**Key words:** Eumycetoma, Foot, Sinus

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### Introduction:

Mycetoma is an uncommon chronic infective disease of the skin and subcutaneous tissues characterized by the triad of tumefaction, draining sinuses and presence of colonial grains in the exudates[1]. Mycetoma pedis, or Madura foot, was first described as a clinical entity by Gill in 1842, from a clinic in Madurai, India[2,3]. It's more commonly seen in tropical and subtropical regions. Repeated minor trauma or penetrating injury provides a portal of entry for the organism. Infection can be caused by true fungi in 40% cases where it is known as eumycetoma and by filamentous bacteria of order

actinomycetes (actinomycetoma) in 60% cases [1]. Eumycetoma usually affects adult males involving limbs and other exposed body parts [4].

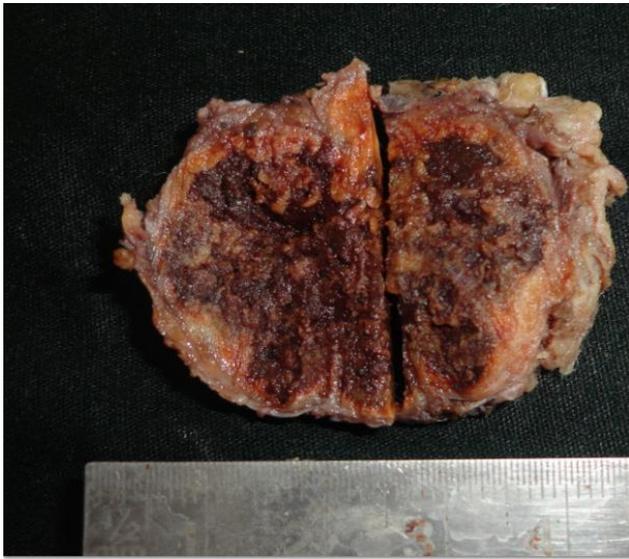
### Case Report:

A 26 years old male presented with multiple subcutaneous swelling in the middle one third of the right leg for 4 years, gradually increasing in size. He had history of similar swelling in the same site 5 years back, which was resected and diagnosed as lipoma on biopsy. On examination the patient had 4 swellings, largest measuring 5 x 5 cms and smallest measuring 1 x 1 cms respectively, which was firm, lobulated and not mobile. A provisional clinical diagnosis of recurrent lipoma was made and the patient was sent to the pathology department for FNA.

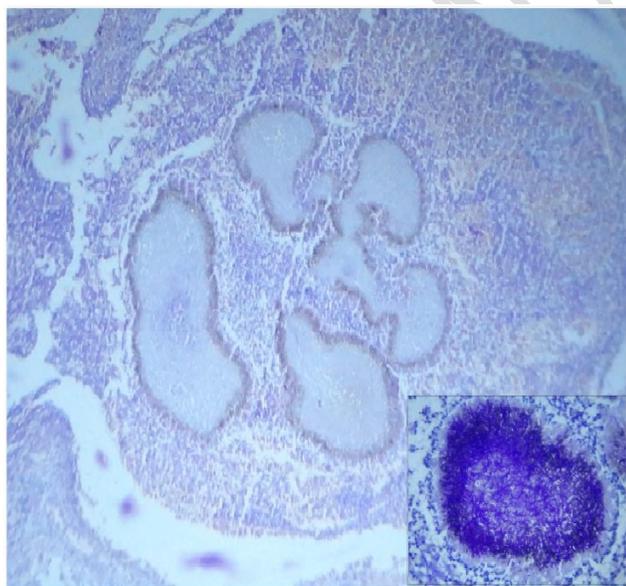
On Fine needle aspiration, we got haemorrhagic aspirate and smears studied with H & E, PAP & MGG stains showed abundant spindle cell fragment in the background of inflammation, composed of neutrophils, lymphocytes, macrophages and giant cells. Stains for AFB and PAS were negative. Cytological diagnosis of benign spindle cell

lesion with chronic granulomatous inflammation was given.

Subsequently the swellings were resected and send for histopathological examination. Grossly the largest lesion was nodular and cut section revealed multiple haemorrhagic areas with fibrous thickening (**Fig 1**). The rest of the swellings were nodular with solid grey white areas. Tissue bits were taken from all swellings and processed.



**Fig 1.** Gross specimen - Cut section of excised mass showing haemorrhagic areas with surrounding fibrosis



**Fig 2.** Microscopic picture (scanner view, H & E, 4X) showing fungal colonies surrounded by chronic granulomatous inflammation. Inset shows PAS + fungal filaments (high power, 40X).

The histopathological sections studied showed to our surprise multiple fungal colonies which had brownish discoloration at the periphery surrounded by chronic granulomatous inflammation. PAS stain showed broad branching hyphae of fungi (**Fig 2**). Gram stain was negative. A diagnosis of Eumycetoma, probably caused by *Madurella grisea* was given. The patient was treated with oral antifungal agent, itraconazole and subsequent X- rays of the right leg showed no bone involvement.

## Discussion:

Mycetoma is endemic in India that stretches in a band between the latitudes of 15° South and 30° North[5]. They are grouped as eumycetoma and actinomycotic mycetoma depending on the causal agent. The causative organisms vary with geographical distribution, as does the site of involvement [6,7]. Eumycotic mycetoma most commonly involves the lower extremities and is seen in rural areas amongst agricultural labourers or in individuals who walk barefoot in dry dusty conditions[1,8]. Minor trauma allows the pathogen to enter the skin from the soil[1]. Actinomycosis, on the other hand, affects the cervicofacial, thoracic and abdominal regions[6]. Mycetoma commonly affects young adults aged 20 - 50 years of age [1,8] predominantly males,[1,7] living in rural areas.

Mycetoma is a chronic inflammatory process of soft tissue, usually of the foot. Initially there is soft tissue swelling with induration which progresses to the formation of discharging sinuses. The lesion may be confined to the soft tissue for years before bone involvement occurs. Early diagnosis before the appearance of sinuses is difficult and requires a strong clinical suspicion[2].

Our case presented with multiple subcutaneous swelling without any sinuses, similar presentation were also been seen in case reports by Roberto [9] and Shamsadini et al [6], where the initial clinical diagnosis were benign soft tissue neoplasm and joint arthritis respectively. But in study by Shamsadini et al [6] diagnosis of mycetoma was made on FNA whereas in our study on FNA, a benign spindle cell lesion with chronic granulomatous infection was made with the differential diagnosis of neurilemmoma, benign fibrous histiocytoma, tuberculosis and subcutaneous mycosis. Stains done for AFB and fungi were negative.

In our case and case by Roberto [9], diagnosis was made only after histopathological examination of the resected mass with special stains (Gram and PAS stain). As PAS stain confirmed the fungal septate hyphae and there were brown pigments around the colonies, the diagnosis of eumycetoma with *Madurella grisea* as an etiological agent was considered.

Eumycetoma is usually treated by aggressive surgical excision with medical treatment [7,8,11]. Follow up of patients with mycetoma must be long enough to detect early recurrence and to advise early treatment[5]. Since surgical excision had already been done, X-ray was taken to rule out bone involvement, and the patient was treated with antifungal therapy, followed up for 6 months with no evidence of recurrence.

### Conclusion:

Diagnosis of mycetoma in the early stage is difficult. Any indurated soft tissue swelling in the lower extremity, diagnosis of mycetoma should be kept in mind and thoroughly investigated in endemic areas. Failure to diagnose early can result in disabilities and deformities.

### References:

1. Kiran Alam, Veena Maheshwari, Shruthi Bhargava, Anshu Jain, Uroos Fathima, Ershad ul Haq: Histological diagnosis of madura foot (mycetoma): A must for definitive treatment. *J Glob Infect Dis*. 2009;1(1):64-67.
2. Jain V, Makwana GE, Bahri N, Mathur MK. The "Dot in the Circle" Sign on MRI in Maduramycosis: A Characteristic Finding. *J Clin Imaging Sci* 2012; 2:66.
3. Nazimuddin Mohammad, Chowdry Arif, Parvin Rukhsana, Uddin Rokon, Razzak Abdur, Hoque Moydul. The Madura Foot – A Case Report. *N Dermatol Online*. 2011; 2(2): 70-73.
4. Wankhade AB, Ghadage DP, Mali RJ, Bhore AV. Mycetoma foot due to *Madurella mycetomatis*. *Ann Trop Med Public Health* 2012;5:352-4.
5. Fahal AH. Review Mycetoma. *Khartoum Medical Journal* 2011;4(1): 514 – 523.
6. Shamsadini S, Shamsi Meimandi S, Sadre Easkavari S, Vahidreza S. Report of two cases of mycetoma in the Islamic republic of Iran. *East Mediterr Health J* 2007; 13(5): 1219-22.
7. Kumar M, Gowda N. Maduramycosis of the Foot: A case report of Boyd's Amputation as a salvage procedure in late presentation. *The Foot and Ankle Online Journal*, 2011; 4 (3):2.
8. Asly M, Razaoui A, Bouyermane H, Hakam K, Moustamsik B, Lmidmani F et al. Mycetoma (Madura Foot): A case report. *Ann PhysRehabil Med* 2010; 53; 650-654.
9. Azzoni Roberto: Madura's Foot In Native Of The Philippines Emigrant In Northern Italy. *J.Orthopaedics* 2005;2(6)e5.
10. Faqir F, Rehman A. Mycetoma – A local experience. *JPMI* ; 18(2): 172 -175.
11. Fahal AH. Management of mycetoma. *Expert Rev.Dermatol* 2010; 5 (1).1-7.

### ABBREVIATIONS:

FNA – Fine Needle Aspiration  
H & E – Haematoxylin & Eosin  
PAP – Papanicolaou stain  
MGG – May – Grunwald Giemsa  
AFB – Acid Fast Bacilli  
PAS – Periodic Acid Schiff