TROPICAL DERMATOLOGY

MYCETOMA: FROM LABORATORY BENCH TO BED SIDE

Dr. Mishri Lal Khatri [(1)]

Medipulse Hospital, Dermatology, Jodhpur, India [(1)]

First written reference of mycetoma can be found in the ancient Indian book Atharva Veda, where it is described as Padvalmika (foot ant hill). In 1842 Gill first recognized it as a clinical entity in Madurai (India) as Madura foot.
Mycetoma is a chronic granulomatous subcutaneous infection, caused by variety of fungal (eumycetoma) and bacterial agents (actinomycetoma), characterized by formation of localized lesions with multiple sinuses, discharging grains which may be yellow, white, red, brown or black depending upon the causative agent. It is endemic in India, Sudan, Senegal, Somalia, Yemen, Mexico, Venezuela and other tropical and subtropical countries between latitude 150 S and 300 N all around the globe.
Actinomycetoma is caused mainly by species of Nocardia, Streptomyces, Actinomadura and few other newly described agents and eumycetoma is caused by different species of Madurella, Leptosphaeria senegalensis, Phialophora jeanselmei, Scedosporium boydii and other fungi.
Diagnosis is based on clinical features, roentgenic studies, microscopic examination of grains, histopathology and isolation of organism by culture, molecular modalities (when culture is negative), PCR, ELISA, and Immunoassays
It is essential to identify the causative agent for treating the patient successfully.
Histopathology remains one of the main tools for the diagnosis of mycetoma. The major advantages of histopathology are speed, low cost and elimination of risk of misdiagnosis due to isolation of contaminant fungi
Histopathology of the lesion reveals a granulomatous infiltration around the grains. In eumycetoma grains are surrounded by a narrow zone of polymorphs and further surrounded by a mixed infiltrate consisting mononuclear cells, histiocytes, foreign body giant cell and occasional xanthomatous cells. In actinomycetoma, a wider zone of polymorphs and mixed inflammatory infiltrate with a few giant cells surrounding the grain are seen. In most of the cases, fibrosis is seen with lymph spaces and blood vessels and occasionally endarteritis or periarteritis. The features of the grains are quite specific to distinguish the causative species but it is not possible to distinguish the different species of Nocardia and Scedosporium
Most of the cases of actinomycetoma can be controlled with drug therapy alone (cotrimoxazole, alone or with combination of streptomycin or amikacin and rifampicin). Co-amoxiclav, gentamicin, linezolid and imipenem have also been tried Combination therapy

gives better results. Eumycetomas usually respond less well to drug therapy and needs a long course of antifungals combined with surgical excision or debulking. Effective antifungal drugs are ketoconazole, itraconazole, terbinafine, voriconazole and posaconazole. Results of the treatment in eumycetoma are better if antifungal therapy is given preoperatively for 2 – 3 months and continued for 6 months to one year post operatively.
Most of the causative species of mycetoma can be identified by HP studies but culture studies are required to distinguish the different species of pale grain fungus and nocardia and in some doubtful cases. Results of the treatment in eumycetoma are better if antifungal therapy is given preoperatively for 2 – 3 months and continued for 6 months to one year post operatively. In actinomycetoma combination therapy gives most satisfactory results

Kea words: Mycetoma, actinomycetoma, eumycetoma,