

CASE OF BRAIN MYCETOMA

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Abstract

Mycetoma is a chronic infection, frequently seen in tropical and sub-tropical countries and is considered as an occupational disease. Nocardia species though it can infect immunocompetent individuals, it most commonly affects immunocompromised patients. Predominantly seen in tropical countries. A 20 years old male came to Mycetoma Research Center in Soba University Hospital in Sudan with swelling in the vertex of the skull and headache. The doctor requested skull x-ray and brain MRI. Hereby we report a case of Actinomycetes Mycetoma in an immunocompetent individual.

Keywords: Mycetoma, nocardia, subcutaneous

Introduction

Mycetoma is a chronic subcutaneous infection caused by actinomycetes or fungi (Bacterial and Fungal infection.). This infection results in granulomatous inflammatory response in the deep dermis and subcutaneous tissue, predominantly seen in tropical countries. Mycetoma is characterized by the formation of grains containing aggregates of the causative organisms that may be discharged onto the skin surface through multiple sinuses.⁽⁹⁾

Mycetoma caused by microaerophilic actinomycetes is termed actinomycetoma, and mycetoma caused by true fungi is called eumycetoma (10). Mycetoma occurs most

often in farmers, shepherds, Bedouins, nomads, and people living in rural areas. Frequent exposure to penetrating wounds by thorns or splinters is a risk factor.

Actinomycetoma can be caused by the following: Actinomadura madurae, Actinomadura pelletieri, Streptomyces somaliensis and Nocardia species

Eumycetoma is mainly caused by P boydii (S apiospermum) or Madurella mycetomatis (11). Madurella has been identified in cattle dung in rural East Africa (12).

Radiographic staging of bone involvement can be found in Imaging Studies.

To describe the characteristics of patients diagnosed with intracranial fungal

granuloma (IFG), was performed in patients with histopathologically confirmed IFG. The variables were symptoms/signs as local swelling. Ulceration, pus discharge, sinus tracts in skin, scarred skin, itching, burning sensation, pain. Mycetoma is most common in persons aged 20-50 years. The authors describe a case of maduromycetoma involving the right parietal cortex, bone, and subcutaneous tissue in a young male who presented with

right parietal scalp swelling that had progressed into a relentlessly discharging sinus. Plain x-rays, magnetic resonance imaging scans were performed.

Case Report

A 20 years old male came to Mycetoma Research Center in Soba University Hospital with swelling in the vertex of the skull and headache. The doctor requested skull x-ray and brain MRI.

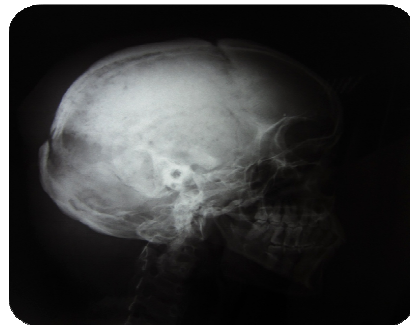


Figure (1) shows lateral x-ray for brain mycetoma.



Fig (2): shows PA x-ray for patient with brain mycetoma.

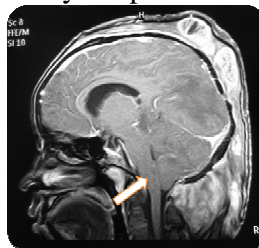


Fig (3): sagittal MRI T1W image post contrast shows the swelling extending into the foramen magnum, compression on the (Rt) side on the brain stem (white arrow).



Fig (4): axial MRI T1W image post contrast shows swelling eroded into the scalp into (Rt) side (white arrow) with intracranial extension with significant oedema (black arrow) on the (Rt) cerebral hemisphere.



Fig (5): Coronal MRI T1W image post contrast shows mycetoma on the (Rt) side of the brain.

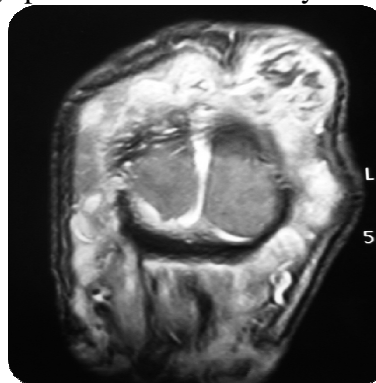


Fig (6): Coronal MRI T1W image post contrast shows mycetoma on the (Rt) side of the brain.

Discussion

Radiographic imaging is useful tool for determining the extent of disease, including soft tissue and bone involvement. Conventional radiographs for assessing early bone involvement, although it is not as sensitive as magnetic resonance imaging. Signs of osteomyelitis were seen in plain films which are used to detect early bone involvement. Lateral & PA x-ray for brain shows mycetoma, figure (1) & (2). MR imaging is sensitive for assessing the extent of mycetoma in the soft tissues, as well as for following signs of response to treatment, including reduction in the volume

of inflammatory tissue, transformation of inflammatory changes into fibrotic tissue, and reduction of bone destruction.

Sagittal MRI T1W image post contrast shows increased signal intensity, the swelling extending into the foramen magnum, compression on the (Rt) side on the brain stem (white arrow). Fig (3) Axial MRI T1W image post contrast shows swelling eroded into the scalp into (Rt) side (white arrow) with intracranial extension with significant oedema (black arrow) on the (Rt) cerebral hemisphere. Fig (4) Coronal MRI T1W image post contrast shows mycetoma on the (Rt) side of the brain. Fig

(5). Coronal MRI T1W image post contrast shows mycetoma on the (Rt) side of the brain.

Fig (6). The characteristic MRI findings can help make an early noninvasive diagnosis of cranial eumycetoma (CE), and allow differentiation from other dural-based hypointense lesions.

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