Histopathological review of Mycetoma specimens in SOBA University Hospital, Sudan

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BACKGROUND AND AIM

Mycetoma is a chronic subcutaneous granulomatous inflammatory disease caused by several microorganisms including true fungi (Eumycetoma) and bacteria (Actinomycetoma) it is characterized by various deformations and disabilities. Mycetoma is endemic in tropical and subtropical regions, in particular, it is reported extensively from Sudan. The diagnosis of the disease is based on the identification of the causative organism and the disease extension which in turn is considered as the first steps in the management of the affected patients and predicting disease treatment, outcome and prognosis. histopathology continues to be a cost-effective tool for diagnosis of invasive Mycetoma infection, as well as the extend of invasion of tissues and vessels and host tissue reaction. Host reaction to the organism is divided into 3 types. Type I when there is a polymorphonuclear infiltration around grains, type II the inflammatory cells are macrophage and giant cells, while type III is distinguished with a well formed granuloma and Langhan's giant cells. The aim of our study was to analyse demographic and histopathological features of this debilitating disease in the hospital in 2021. Soba University hospital houses Mycetoma Research Center one of the leading hubs in research and education and teaching in the various aspects of the disease and is intimately connected to the histopathology department.

METHOD

This is a cross-sectional retrospective observational study. Data related to patients diagnosed with Mycetoma between January 2021 to October 2021 was extracted from the patients archives records in Soba teaching Hospital. H&E stained sections were cut from FFPE tissue blocks.

Figure 1: gender distribution of Mycetoma cases in 2021.

RESULTS

The total number of cases included in this study was 180 specimens. 133(73.9%) of the patients were males, with a male to female ratio of 2.82: 1. The highest incidence of Mycetoma cases was in the age group of 11-30 years old at 57.8%. the foot was the most commonly affected site at 88%, lesions were also diagnosed in the leg, hand, upper arm, gluteal region, back, and posterior neck respectively. In the majority of cases (61.3%) the species was Eumycetoma; while Actinomycetoma constituted the rest at (38.7%). 45.1% of patients had combined type I& II host reaction followed by solitary type I reaction at 38.9%.

Figure 2: Mycetoma species distribution

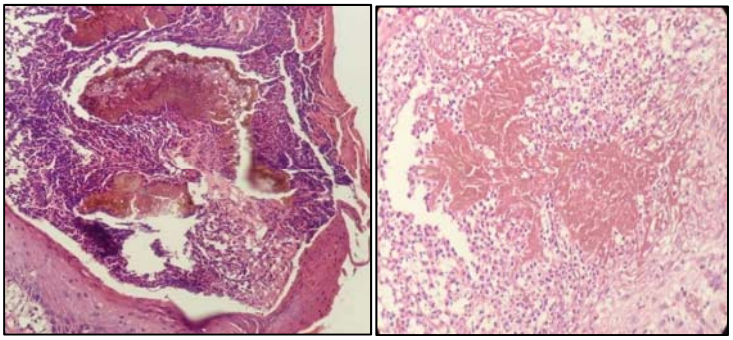

Figure 3: *Madurella mycetomi* grains with type I reaction

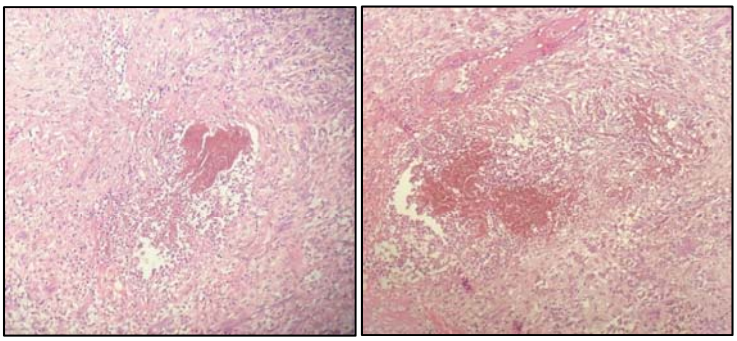

Figure 4: type I & II reaction around brown grains showing branched hyphae.

CONCLUSION

This study aligns with previous reports conducted from Sudan and elsewhere. The findings of this study indicate that in 2021 mycetoma still is a burden to the health system in endemic areas. Adequate measures should be taken to raise the level of training for histopathology diagnosis of the disease

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