



Wide Surgical Excision and Reconstruction of Eumycetoma in Gezira Mycetoma Centre

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Methods: This is prospective, centred based study. Patients who underwent wide surgical excision and reconstructions after surgery were selected. We checked different variables age, sex, site of eumycetoma, the size of eumycetoma lesion, history of recurrence and types of reconstruction done.

Results: Wide surgical excision was done for 24 patients. Patients characteristics revealed male: female ratio is 5:1. History of recurrence occurred in 11 patients. Diagnosis of eumycetoma confirmed cytologically. Bone x-ray revealed no involvements. Eumycetoma was found in a variable site. In this study site of eumycetoma were Knee 6 patients, foot 6 patients, leg 4 patients, hand 4, gluteal 3 and hand in 1 patient. The size of eumycetoma lesions were variables from 8 to 20 cm diameters. All patients receive antifungal therapy. Types of reconstruction done for those patients varied from local to advance flaps and or skin grafts.

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Conclusions: Reconstruction after wide excision gives good outcome in big size eumycetoma lesions with combination therapy of medical treatments.

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I. INTRODUCTION

Treatment of eumycetoma does not follow global or regional guidelines on the last years. It depends on personal clinical experiences and studies. There are some centers offered massive surgical excision and amputation for eumycetoma without giving medical treatments (1,2). There is no consensus on treatment regimens that are used to eumycetoma to get cures and prevent relapse(3).

Treatments of eumycetoma are major challenge, because it is relatively not responded to medical treatments only. Recently, in tropical and subtropical countries, e.g. in Sudan, eumycetoma are treated by a combination of antifungal (azole) chemotherapy together with surgical excisions. Frequently itraconazole is used as antifungal treatments for months, and sometimes over years (1,4,5).

We conduct this study to shows eumycetoma patients underwent Wide Surgical Excisions (WSE) and

plastic reconstruction. In this study WSE plus local or transfer flaps and/or skin graft was done for big size eumycetoma lesions. This surgical modality with chemotherapeutic antifungal give good outcome.

II. SUBJECTS AND METHODS

This is prospective, descriptive, centre based study. Patients who underwent operation in Gezira mycetoma centre were studied. In this study, we include patient with eumycetoma, underwent wide surgical excision and reconstruction after excision, and in regular follow up till 9 -12 months. We exclude any patient with eumycetoma underwent excision and primary closure or amputation or there are bone involvements in x-ray's.

We checked different variables age, sex, site of eumycetoma, size of eumycetoma lesion, history of recurrence and types of reconstruction done. Diagnose of eumycetoma depends on residency in endemic area, discharge black grain, past history of operation, and clinical examination, cytological diagnosis and x-rays was done. All patients received antifungal therapy before and or after surgery.

III. RESULTS

In this study, we found 24 patients that fulfil our criteria. Patients characteristics revealed 20 males in comparison to 4 females. Age distributed as (≤ 19 years) 7 patients, (20-39 years) 11patients, (≥ 40 years) 6 patients. Eleven patients had history of recurrent mycetoma and previews surgical operation. Diagnosis of eumycetoma confirmed cytologically. Bone x-ray revealed no involvements.

Eumycetoma were found in a variable site in this study. The site of eumycetoma was found Knee 6 patients, foot 6 patients, leg 4 patients, hand 4, gluteal 3 and hand 1in patient. Size of eumycetoma lesions was variables from 8 to 20 cm diameters. The smaller size found in hand and feet. Types of reconstruction done for those patients shown in **Table1**. After wide excision and reconstruction, we can close skin easily **Fig1-3**. Hospital stayed was reduced. We followed the patients for 9-12 months. Patient had good healing. There is one case of recurrence.

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IV. DISCUSSION

The aim of surgical treatment is complete removal of the lesions (6). Surgical operations to eumycetoma range from wide surgical excision, debulking excision or amputations (5,8). Surgical excisions are preferred for localized small lesions when patient present early without disrepute the capsule and this will lead to good outcome (1,5-8).

Others surgical indications are resistance to medical treatment or for better response to medical treatment in patients with massive disease (1,5,8). Amputation is indicated in advanced mycetoma not responding to medical treatment with severe secondary bacterial infection, and it can be a life-saving procedure (1,5,9,10).

In this study, we perform wide surgical excision for eumycetoma for big size lesions (8 cm or more) **Fig 1-3**. This excision is done with margins to eradicate the disease (0.5-2 cm) margins. These operations done for patients without bone involvements. There is technical difficulty to do primary closer after wide excision. So, we decide to select reconstruction to close the skin defect. This reconstruction is varied from skin graft to local or advanced flaps.

After 9-12 months' follow up of those patients it showed good healing and started to go back their ordinary activity. There is one case of recurrence after 6 months. In our study, we did operations for big lesions with history of recurrences and discharging sinus. Also for patients who had slow respond to medical treatments.

Foot is the common site of mycetoma (70 – 80%) the foot, followed by the hands (~12%), legs, and knee joints^{11,12}. In this study mycetoma occurs at different parts knee 6 patients, foot 6 patients, leg 4 patients, hand 4, gluteal 3 and hand mycetoma in one patient.

We can conclude that, Wide surgical excision and reconstruction for eumycetoma can be done for big size lesions or difficult to close skin primary with good outcome

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TABLES

Table 1: Types of reconstruction after excision

Types OF reconstruction	Frequency
Skin graft	12
V-Y advancement	5
Gastrocnemius Flap	4
Dorsalis pedis pedicled flap	1
Lateral calcaneal artery skin flap	2
Total	24

FIGURES



Fig. 1: A: Knee Mycetoma



Fig. 1: B: Knee after excision and Gastrocnemius flap



Fig. 2: C: Knee after skin graft



Fig. 1: C: Knee after reconstruction and skin graft



Fig. 3: A: Foot mycetoma with sinuses



Fig. 2: A: Recurrent Knee Mycetoma with sinuses



Fig. 3: B: Foot after wide excision



Fig. 2: B: Knee after wide excision



Fig. 3: C: Foot after skin graft