



## Occurrence of Chromoblastomycosis due to *Cladophialophora carrionii* in a Libyan patient

### ABSTRACT

In this study we report the second occurrence of chromoblastomycosis in Libya and identify the etiological agent.

A 60 year old woman, presented with a history of asymptomatic left upper limb multiple skin lesions which had healed with scars. The lesions started at the site of a previous trauma to the left hand and after a few years had spread to involve the left forearm. Upon examination non-tender multiple erythematous, verrucous infiltrated plaques on the left hand and forearm were seen. Some lesions healed with atrophic and ivory coloured scar tissue. Skin biopsy with H&E stain demonstrated pseudoepitheliomatous hyperplasia of the epidermis, with micro abscesses and a diffuse lymph mononuclear inflammatory cell. In the upper dermis thick walled coloured fungal cells were seen inside and outside the giant cells. Fungal culture showed a slow-growing dark black velvety colony. The macro and micro morphology of *Cladophialophora carrionii* was noted.

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### Key words:

*Chromoblastomycosis*,  
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### INTRODUCTION

Chromoblastomycosis or Chromomycosis is a slow progressive cutaneous mycosis caused by various groups of dematiaceous (pigmented) fungi (1). The primary lesion is thought to develop as a result of percutaneous traumatic inoculation (2). The term chromoblastomycosis was first used by Terra *et al.* to define a polymorphic fungal disease located on the lower limbs, consisting of nodules or

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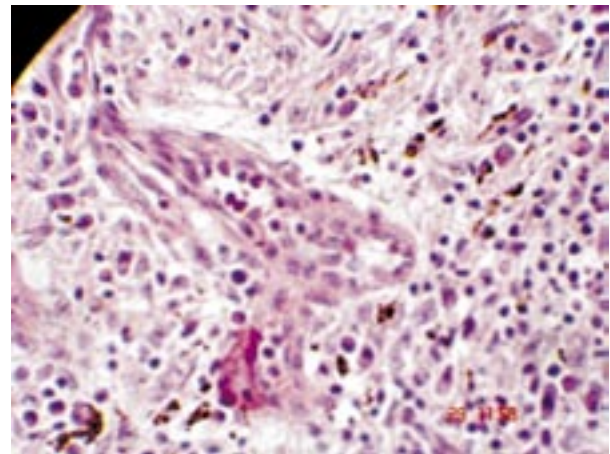
verrucous plaques that could possibly ulcerate and develop into hyperkeratosis and acanthosis of the affected epithelial tissues (1). In some cases, chromoblastomycosis may evolve into secondary infection, leading to lymphedema, elephantiasis and occasionally to squamous cell carcinoma at affected sites (3). Lymphatic and hematogenic dissemination and brain metastases have rarely been observed (1). Chromoblastomycosis has not been frequently observed in Libya (4) possibly due to the lack of definitive diagnosis of the causative agent(s). Here we present the second report of chromoblastomycosis in Libya and the first identification of the etiological agent from a case in Tripoli Medical Centre.

## Case report

A 60 year old Libyan female presented with a 10 year history of asymptomatic left upper limb multiple skin lesions which had healed with scars. Lesions started at the site of a previous trauma to the left hand and after a few years had spread to involve the left forearm. Upon examination multiple erythematous and verrucous infiltrated plaques on the left hand and forearm were observed. Some lesions had healed with atrophic and ivory coloured scar tissue (Fig 1). Histopathology examination of skin biopsy was performed using hematoxylin and eosin (H&E). The stained sample demonstrated pseudoepitheliomatous hyperplasia of the epidermis with micro abscesses and diffused lymph mononuclear inflammatory cells. In the upper dermis coloured thick walled fungal cells were observed in inside and outside the giant cells (Fig. 2). Microscopic examination of potassium hydroxide (KOH) preparations of skin scraping from the surface of lesions also showed pigmented thick-walled muriform cells in the skin scales. These pigmented cells were observed in dermal granulomas giant cells and also the epidermis upon histopathological examination. Scales and biopsy material were cut into small fragments and applied to Sabouraud glucose agar containing chloramphenicol, gentamicin,



**Figure 1. Hand and forearm of patient presenting with chromoblastomycosis. Note lesions with encrusted scar tissue.**



**Figure 2. Appearance of Cladophialophora carrionii in dermis of patient demonstrating chromoblastomycosis (Magnification x 600)**



**Figure 3. Macroscopic appearance of Cladophialophora carrionii colony with typical characteristic as a dark olive-grey to black velvety colony. (Magnification x 400)**

and cycloheximide and the culture plates were incubated at 25-28°C for two weeks. Fungal colonies that originated from this material were slow growing and showed a dark olive-grey to black velvety colony. Identification of the etiological agent was made by studying the shape and mode of formation of conidia (5). The macro and micro morphology wet mount microscopic examination of culture growth in lacto phenol cotton blue showed that the fungus *Cladophialophora carrionii* was the etiological agent (Fig 3).

## DISCUSSION

Chromoblastomycosis has previously been

reported in north Africa (6,7) and although Libya is situated in the African zone and this condition has been reported in Tunisia (8), which is geographically adjacent to Libya, the condition has only been reported in Libya on one previous occasion (4). Chromoblastomycosis may be prevalent in Libya and sporadic cases may occur. The lack of reported cases of this condition may be due to the fact that diagnosis of most cases is based on clinical presentation without mycological study for isolation and identification of the etiological agent. However, in this study we present the first report supported by both clinical and mycological study of chromoblastomycosis caused by *Cladophialophora carrionii* from a new case in Libya. The female patient in this report lived in a suburb of Tripoli and had a history of a previous trauma of the left hand which had healed with multiple scars. Although the patient did not recall the specific type of trauma she recalled developing abrasions on numerous occasions while working on a farm and feeding animals. This case, like many other cases of chromoblastomycosis, may have originated from a minor trauma to the hand, possibly caused by vegetative materials such as thorns or splinters which could implant fungi in the subcutaneous tissues. Complications associated with chromoblastomycosis have not been seen in this case other than the slow spreading of infections to the surrounding tissues while still remaining localized to the area around the original wound. *Cladophialophora carrionii* (synonym, *Cladophialophora ajelloi*) isolated in this study is one of the common etiological agents of chromoblastomycosis found in Africa, South America and Australia (6 - 9) and classified by Trejos in 1954 under the name *Cladosporium carrionii* (10). Recent taxonomic studies have moved pathogenic species of the genus *Cladosporium*, including *Cladosporium carrionii* to the genus of *Cladophialophora* (11). Also this pathogen is considered the most important pathogenic species in the genus due



**Figure 4. Microscopic appearance of *Cladophialophora carrionii* hyphae. (Magnification x 400)**

to the many cases of illness caused by this fungus worldwide.

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