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CASE REPORT

A Neglected Tropical Disease in a Lebanese Patient: Chromoblastomycosis

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Abstract

Background: Chromoblastomycosis is a chronic granulomatous skin infection caused by various pigmented fungi. We report the first documented case of chromoblastomycosis in Lebanon.

Methods: A 70-year-old female with comorbidities of diabetes and heart failure presented with asymptomatic plaques and nodules on her left hand over six months. Differential diagnoses were considered, and multiple biopsies were taken for histopathologic examination, mycobacterial PCR analysis, acid-fast culture, bacterial, and fungal cultures. Potassium hydroxide examination of lesion surfaces was performed.

Results: Histopathology showed hyperkeratotic skin with pseudoepitheliomatous epidermis and marked mixed interstitial inflammation suggestive of an infectious process. However, initial tests were inconclusive until characteristic spherical spores, indicative of muriform bodies, were identified through potassium hydroxide examination. Treatment with terbinafine was ineffective, but a multidrug regimen including cryotherapy, topical 5-Fluorouracil, and oral itraconazole resulted in significant lesion regression.

Conclusion: This case highlights the challenges in diagnosing chromoblastomycosis, especially in non-endemic regions, and its potential complications, including secondary bacterial infections. It underscores the importance of considering this diagnosis and the efficacy of a multidrug regimen involving cryotherapy, topical 5-Fluorouracil and itraconazole in managing this neglected tropical disease.

Keywords

Neglected tropical disease, Deep fungal infection of the skin, Infectious dermatology

Introduction

Chromoblastomycosis is a chronic granulomatous infection of the skin caused by several pigmented fungi, resulting in the formation of slow growing verrucous plaques and nodules [1]. In this article we report the first case [2] of chromoblastomycosis in Lebanon (Middle-East).

Case Report

It is the case of a 70-years-old female patient with diabetes and heart failure, who presented for asymptomatic slowly growing plaques and nodules on her left hand in the past 6 months, treated with oral steroids and antibiotics without improvement. Physical exam showed three cauliflower-like hyperkeratotic nodules on the left forearm with secondary ulcerations and pustules, and no lymphadenopathy (Figure 1a and Figure 1b). She denies any insect bites, occupational exposure or travel history, however she reports spending some time in gardening. The differential diagnosis included: Tuberculous and non-tuberculous mycobacterial skin infection, neutrophilic dermatosis, and sarcoidosis, deep fungal infection of the skin,

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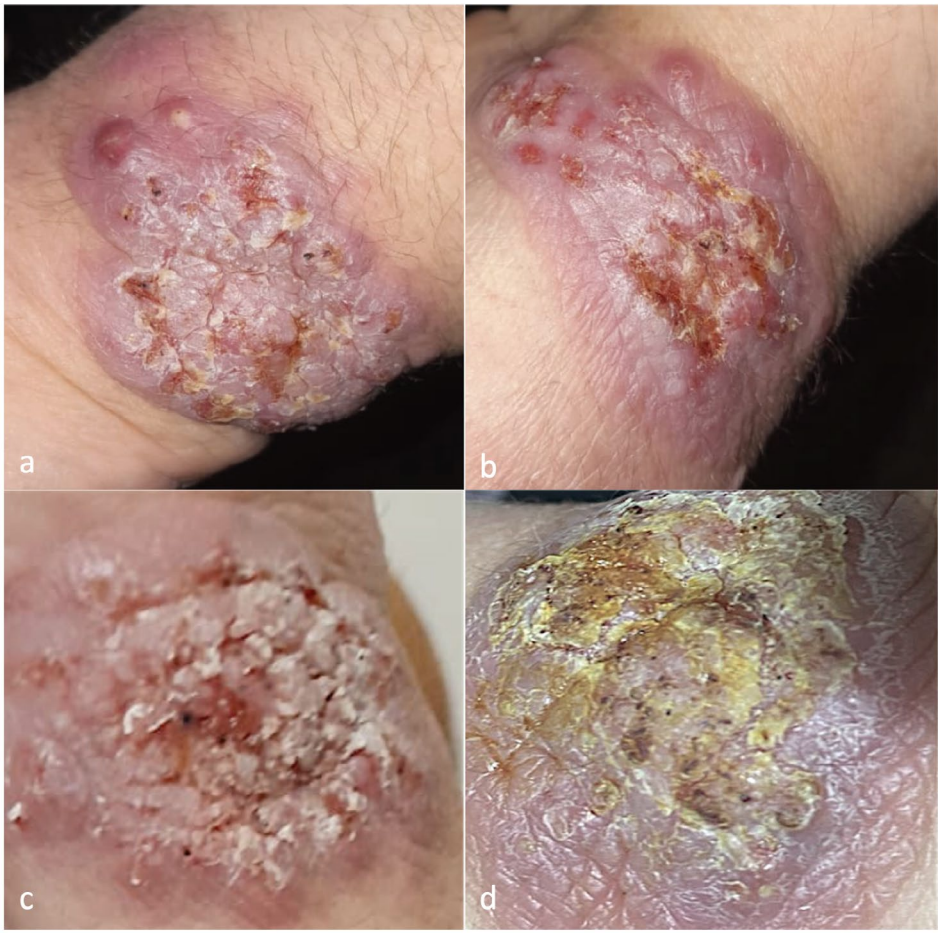

Figure 1: (a,b) Hyperkeratotic erythematous nodular lesions with secondary ulceration and pustules; (c) Evolution over time, the lesion became more hyperkeratotic and exophytic; (d) Black dots on the surface of the lesion, representing sclerotic bodies.

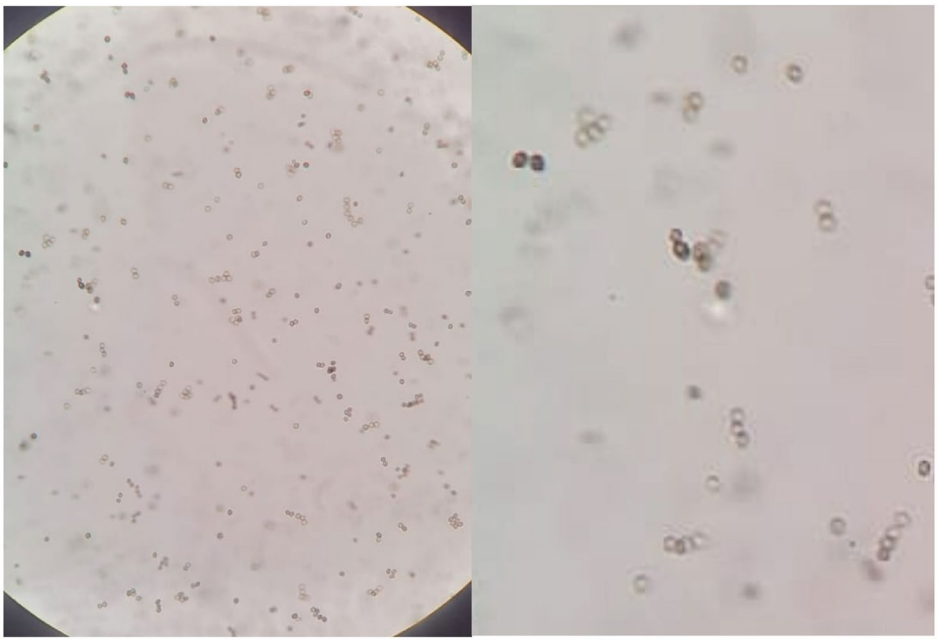

Figure 2: Numerous muriform/sclerotcic bodies seen on KOH examination.

sporotrichiosis and leishmaniasis. Multiple biopsies were taken for histopathologic examination, mycobacterial PCR analysis, and acid fast culture, bacterial and fungal cultures. Histopathology showed hyperkeratotic skin with parakeratosis, pseudo-epithiliomatous epidermis and marked mixed interstitial inflammation with granulomatous and abscess formation in the dermis in favor of an infectious process.

Special stains, mycobacterial PCR and acid fast cultures were negative. Bacterial culture was positive for Streptococcus agalactiae and the patient was started on amoxicillin/clavulanic acid. However, lesions kept growing and became more exophytic and verrucous in appearance with overlying black dots (Figure 1c and Figure 1d). A deep fungal infection of the skin was highly suspected, specifically chromoblastomycosis. Potassium Hydroxide examination of the black dots from the surface of the lesion showed numerous spherical spores, characteristic of muriform bodies (Figure 2) and fungal culture on sabouraud dextrose agar grew brownish colonies. The diagnosis of chromoblastomycosis was confirmed, and the patient was started on oral terbinafine 500 mg daily without improvement after 6 weeks. A single session of cryotherapy with liquid nitrogen was done, and she was started on oral itraconazole 100 mg twice daily with topical 5-Fluorouracil (5-FU) five times per week. Six weeks later she showed drastic improvement of her lesions and was maintained on this regimen for an additional 6 months.

Discussion

Chromoblastomycosis is a tropical skin infection caused by several different dematiaceous fungi such as *Fonsecaea spp* and *Cladophialophora spp* [1], which manifests clinically by slow growing warty like plaques and nodules that can ulcerate [3]. Being a neglected tropical disease, it can have many serious complications such as secondary bacterial infections and deep tissue fibrosis [4]. In our case *Streptococcus agalactiae*, was identified as superinfection, and to our knowledge this first case showing association between the two infectious agents. Diagnosing this entity is very challenging, since many infectious and inflammatory disorders can mimic the disease and must be ruled out [3,4]. The fungus evokes a granulomatous response in the dermis, with pseudoepitheliomatous hyperplasia of the epidermis [4]. The fungal elements are rarely visible on histology as sclerotic or muriform bodies, which are brown and extruded transepidermally. They appear as black dots on the surface of the lesion which is characteristic of Chromoblastomycosis [3].

Potassium hydroxide examination of these black dots, showing the muriform bodies, is an easier less invasive way to confirm the diagnosis, especially when they are not seen on histology such as in our case. The antifungal drugs of choice are itraconazole or terbinafine, given for a period of a year or more [1,3,4]. Other treatment options include oral potassium iodide solution, cryotherapy and excision of solitary lesion [1]. In our case, terbinafine was not effective, and the patient improved drastically on cryotherapy, topical 5-FU and oral itraconazole. To our knowledge this is the first case of chromoblastomycosis reported in Lebanon [2].

Conclusion

Chromoblastomycosis is often a forgotten mycosis that manifests as slowly growing verrucous lesions. Characteristic black dots are seen on the surface of the lesions, representing the sclerotic bodies seen on histology. Dermatologists should keep in mind this diagnosis even if the area is not endemic of the disease.

Funding Sources

None.

Conflict of Interest

None.

Data Availability

The data used to support the findings of this study are included within the article.

Ethics Statement

This study was not performed on any human or animal subjects and informed consent was taken from the patient before publishing.

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