

Subcutaneous Mycosis Linked to Chromoblastomycosis. An Unattended Entity, but with a Re-Emerging Trend

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Abstract

Chromoblastomycosis is an infrequently communicated entity, it has a very varied clinical presentation, with an estimated incubation period, but not demonstrated that it goes from weeks to months, with skin lesions that progress slowly to multiple forms. The most frequently affected sites are the extremities, mainly the lower extremities due to the greater possibility of contact with the environment and its vegetation is followed by the upper extremities and less frequently the atrial pavilion and torso. The case of a migrant and farmer male with approximately 1 year of appearance of edema of the right lower limb and progression of lesions of nodular and verrucous patterns from the right leg in the anterior and posterior face, extended ipsilateral thigh in the anterior and posterior 1/3 is presented, in different diameters and stages, in whom a skin biopsy was performed validating direct stains and cultivation of common germs and fungi; with the finding of Medlar corpuscles defining a case of chromoblastomycosis subcutaneous mycosis and guiding treatment with Itraconazole for 1 year with favorable clinical response.

Keywords: Subcutaneous; Chromomycosis; Medlar Cospuscles; Chromoblastomycosis; ELISAP

Introduction

Chromoblastomycosis (chromomycosis) is a deep fungal infection, with a larval and chronic clinical presentation, caused by dematiaceous fungi (due to the microscopic characteristic due to intrinsic pigmentation production) belonging to the *Herpotrichiellaceae* family of which we have agents such as *Fonsecaea* spp., *Phialophora verrucosa*, *Cladophialophora carrionii*, *Exophiala dermatitidis*, *Rhinoctadiella aquaspersa*, being the first 3 agents the most frequent isolated agents within this pathology. *Fonsecaea* spp. and subtypes are the most frequent in America and Asia. It is considered as a disease neglected by WHO/PAHO.

It has been reemerging in recent years due to climatic changes and an increase in the diagnostic arsenal with better yields in microbiological tests.

The incidence of this disease is not elucidated in many countries, possibly due to the lack in the report of this pathology and the low diagnostic suspicion.

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The first case recorded in the literature is presented in 1911 by Pedroso and Gomes but was published until 1922 along with 3 other cases in Brazil. In India, a systematic review of 169 cases was carried out from 1957 to 2016 in which they found an increase in the report since 2012 with more than 50% of the cases reported as of the date.

Description of the case

60-year-old male, born in Yolombó, residing in Venezuela, state of Portuguesa for Approx. 40 years, 2 months ago he returned to Colombia, worked in coffee / cocoa / banana / avocado agriculture, lived alone, HSM, 2 children, ages 10 and 23, widower, toxic ex-tobacco user (10 years ago), denied allergies, surgical . Deny, Patol. He denies, he had been hospitalized for leishmaniasis in 1986 (treated with glucantime), he was hospitalized for an ophidic accident in the lower left limb in 1996. Consultant for painless, non-suppurative lesions, with no apparent entrance door and approximately one year of evolution.

Physical examination reveals the presence of nodular / verrucous lesions from the right leg on its anterior and posterior faces (Image 1. Box A). extended to the thigh in its upper anterior and posterior 1/3, in different diameters and stages (the largest of Approx. 5x4cm), violet and pinkish (Image 1. Box B), with preserved sensitivity and pulses. Refractory to various operations with clotrimazole, ciprofloxacin and oral fluconazole, with intermittency and without clinical improvement.

Diagnostic evolution and treatment

DBT-type immunocompromise was ruled out, and HIV infection with normal HBA1C also ruled out deep vein thrombosis by venous doppler that revealed only right inguinal adenomegalies of 27x10 and 24x9.5 mm.

Scarification of the skin was performed, validating great with abundant highly positive cocci and subsequent culture of *Staphylococcus aureus* resistant to oxacillin and KOH, revealing abundant blastoconidia, with subsequent skin biopsy of the lesion of the anterior face of the right leg, which revealed sclera cells from Medlar associated with blastoconidia. and abundant pseudohyphae.

Antibiotic treatment was offered with trimethoprim sulfa methoxazole 160/800 mg vo every 12 h for 7 days and Itraconazole 200 mg vo every 12h for 24 weeks, progressing favorably, with good digestive tolerance to the scheme, it did not require surgical measures.

Discussion

Chromoblastomycosis (chromomycosis) is a deep fungal infection, with a larval and chronic clinical presentation, caused by dematiaceous fungi (due to the microscopic characteristic due to intrinsic pigmentation production) belonging to the *Herpotrichiellaceae* family of which we have agents such as *Fonsecaea* spp., *Phialophora verrucosa*, *Cladophialophora carrionii*, *Exophiala dermatitidis* *Rhinocladiella aquaspersa*, being the first 3 agents the most frequent isolated agents within this pathology. *Fonsecaea* spp and subtypes are the most frequent in America and Asia [1-7].

It is considered as a disease neglected by WHO/PAHO and is reemerging in recent years due to climatic changes and an increase in the diagnostic arsenal with better yields in microbiological tests [8,9].

The first case recorded in the literature is presented in 1911 by Pedroso and Gomes but was published until 1922 along with 3 other cases in Brazil [7]. In the following years different cases began to emerge in South America, mainly Venezuela, Peru, Argentina Brazil, Africa (mostly Madagascar), Asia (in China and India most cases) and Oceania, in mainly tropical and subtropical areas between latitudes 30° north and south [1-7].

The incidence of this disease is not elucidated in many countries, possibly due to the lack in the report of this pathology and the low diagnostic suspicion. Some case reports and reviews show near-reality data, suggesting incidents of 1 per 6800 (Madagascar) and 1 per 8625 (United States of America) of the total population of these countries [3]. In other reviews the number of reported cases is observed. In China, more than 500 cases have been reported in a systematic review conducted from 1952 to 2018 [4]. In America, Mexico is one of the countries considered highly endemic with reports up to 2013 of 603 patients with proven chromoblastomycosis. Peru has reported between 10 to 49 cases until 2016, similar to what was seen in Argentina. Venezuela and Brazil have the highest incidence in South America, the latter with the highest case report (872 cases) with an incidence rate of approximately 1 per 196,000 inhabitants [1,2]. In Colombia there are no reviews that can determine the incidence of this disease. In two case reports, mention is made of a series of 10 cases by *F. Pedrosoi*, in addition to two cases by two different microorganisms (*Rhinocladiella aquaspersa* and *Exophiala psychrophila*) [10,11].

In India a systematic review of 169 cases from the year 1957 to 2016 was carried out in which they find an increase in the report since 2012 with more than 50% of the cases reported as of the date, with an average age of 43.3 years, affecting more men than women with a 4.2: 1 ratio, with a history of previous trauma in 33.8%, 74.1% had agricultural work as a profession and clinically found themselves with greater limb involvement inferior over superior. Additional reported few cases related to immunosuppression (5.9%) [5].

In other case reports, people who are in rural areas, farm workers as farmers, with trauma related to vegetation or organic material are initially characterized as a risk factor [12,13]. In different case reports it is also frequent observe a certain association between infection and some degree of immunosuppression of patients such as diabetes mellitus and more importantly organ transplantation, where the most invasive, aggressive and morbidity and mortality clinical pictures are observed [14-17].

Chromoblastomycosis has a very varied clinical presentation, with an estimated incubation period, but not proven to go from weeks to months, with skin lesions that progress slowly to multiple forms. The most frequently affected sites are the extremities, mainly the lower extremities due to the greater possibility of contact with the environment and its vegetation is followed by the upper extremities and less frequent atrial pavilion and torso [11,18]. The most frequently observed patterns of skin lesion are: nodular, tumor, verrucous, plaque and scar; for this reason, differential diagnoses can be varied such as skin carcinomas, autoimmune lesions, other skin infections, among other diagnoses [2,5,19].

The initial diagnosis is clinical, observing the lesions and by medical history. Biopsy and culture of the lesions with suspected fungal infection should be performed. The biopsy findings are mainly granulomatous infiltrate with different degrees of fibrosis, hyperparakeratosis, intracorneal microbasses and fungal bodies that can be visualized from the biopsy or live with KOH to appreciate the muriform bodies that are pathognomonic for this infection [1,2,7,20]. It may also be useful, although it is still under validation, molecular studies to identify and determine resistance to antifungals [21].

The treatment for chromoblastomycosis does not have a standardized protocol or guide. According to literature reviews, the management is carried out with dual or combined treatment consisting of physical therapies such as cryotherapy, laser therapy to conventional surgery, according to the patient's clinical status and the lesions that are observed by adding itraconazole-type antifungals that would be the first line of treatment, although other azoles may be used depending on the context. The dose is between 200/400 mg a day and the duration according to reports would be between 8 - 12 months with cure rates between 15 - 80%. Terbinafine would be the second handling line also with good tolerance. The combined use of systemic antifungals is considered in patients with refractory systemic mycoses, although triazoles such as posaconazole and voriconazole are being *in vitro* the new option for any clinical state of chromoblastomycosis due to its spectrum and better pharmacokinetics and dynamics [2,7].

Conclusion

In our experience, the diagnosis was made in a migrant patient in Colombian territory, from which it is inferred that the population exodus affects the public health indicators of the receiving territories. A call is made to standardize the report of superficial, subcutaneous and deep fungal infections in the Colombian territory to have data on the incidence and prevalence of these entities.

In Colombia, more case reports and reviews are required to elucidate the current situation of the country with respect to chromoblastomycosis, determine incidence, morbidity, mortality, sequelae, treatment, efficacy among other aspects that allow health personnel to carry out an adequate approach, a timely diagnosis and A complete and effective treatment.

Annexed



A

Figure 1A: Photograph right foot. Verrucous and nodular pattern lesions are visualized in all the extension of the right lower limb.



B

Figure 1B: Photograph of the side of the right leg. Multilobed verrucous lesion.



C

Figure 1C: Photograph of the right external malleolus with verrucous lesions of the scaly center due to the transepithelial release of the fungus. Sources patient consent, image bank Latin American Research Team in Infectology and Public Health-ELISAP.

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