Clinical Aspects of Patients with Chromoblastomycosis Treated in a Dermatology Reference Center in the Brazilian Amazon

ORIGINAL

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Abstract

Background: Describes clinical aspects of patients with chromoblastomycosis treated at the dermatology department of the Para State University. The present study aimed to describe clinical and therapeutic aspects of patients with chromoblastomycosis treated at the dermatology department of Para State University.

Methods: An observational, descriptive, case series study was performed, comprising 12 patients with the diagnosis of chromoblastomycosis. A clinical interview and a dermatological protocol were applied, classifying these patients in variables as gender, age, time of illness, type of lesion (size, shape, appearance, location and evolution), treatment and complications.

Conclusions: most of the patients were male, rural workers, with vegetative lesions according to the classification of Carrión, graduated as moderate, with less than 10 years of evolution.

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Introduction

Chromoblastomycosis or chromomycosis is a fungal, chronic, polymorphic infection of the cutaneous and subcutaneous tissues caused

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by various species of dematiaceous fungi, histologically shown as sclerotic, brownish or fumagoid bodies [1]. The most frequently isolated organisms are *Fonsecaea pedrosoi*, *Phialophora verrucosa*, *Cladosporium carrioni* and more rarely *Rhinocladiella aquaspersa* [2].

In nature, these agents live decomposing a organic matter of soil substrates, plant remains, contaminated water, among others. The frequent contact between man and enviromeent facilitates the appearing of this fungal infection [3].

The presence of a papular lesion of erythematous and desquamative surface is initially observed at the site of implantation of CBM agents and may gradually increase in size. Afterwards, a remarkable clinical polymorphism is usually observed, having lesions with the folowing aspects: nodular, verrucous, plaque (infiltrative), tumoral and scarring [4].

The symptomatology commonly described by patients includes the sensation of pain and pruritus (tingling) [3], usually affecting the lower limbs unilaterally [5]. Originally described in 1914 by Pedroso and Gomes in São Paulo, chromomycosis has a worldwide distribution, being more prevalent in tropical and subtropical countries, notably in Brazil, Mexico, Cuba and the Dominican Republic. Climatic conditions associated with underdeveloped regions contribute to maintaining endemic areas well characterized [6]. This study aims to describe demographic and clinical aspects of chromoblastomycosis patients treated at the dermatology department of the Para State University.

Methods

Twelve patients diagnosed between 2007 to 2017 with chromoblastomycosis, were interviewed at the Dermatology departament of Para State University. Iniatilly, the diagnose was based in the clinical examination, but it was later confirmed with histopatological examination and direct mycological examination. A clinical interview and a der-

matological protocole were applied, containing variables as: residence, occupation, lesion aspect, severity, and evolution. The patients signed an Informed Consent Term (TCLE), and those who were unable to attend in person or be legally represented, the face-to-face interview was replaced for the patients form and a Term of Consent for Data Use was applied.

The clinical classification was made based on clinical criteria described and proposed by Carrión in 1950 [7] (**Table 1**). Whenever there was more than one type of clinical appearance in the same lesion, the predominant one was considered. The classification of lesions according to Queiroz-Telles [8], was also considered, graduating lesions according to their time and severity and dividing them into Light, Moderate and Severe (**Table 2**).

Table 1. Adaptation of Carrión's clinical classification (1950).

Type	Description
Nodular	elevated lesions, 1 to 3 cm, with fibroelastic consistency. Erythematous or violaceous surface, with scaly appearance.
Tumoral	large lesion, more than 3 cm. They result from the coalescence of nodules forming a pseudotumoral lesion.
Verruciform	exophytic lesions, usually large, dry and of firm consistency
Scarring	flat, centrifugal growth, leaving central areas of epidermis with atrophic or sclerosing scarring.
Plaque (Infiltrative)	slightly elevated, evenly infiltrated areas. Erythematous or violaceous staining, the surface may be scaly.
Plaque (Infiltrative)	slightly elevated, evenly infiltrated areas. Erythematous or violaceous staining, the surface may be scaly.

Results

After the data analysis, the presented sample was composed mostly of rural residents (75%), farmers (66.7%), with vegetative verrucous lesion (66.7%),

classified in the moderate severity category (50%). And when it comes about the disease evolution time its was found a tie between two distinct groups: less than 5 years (33.3%) and between 6 and 10 years (33.3%).

Table 2. Queiroz-Telles's severity graduation (2003).

Score	Description
Light	single lesion with 5 cm of diameter.
Moderate	solitary or multiple lesions: nodules, verruciform lesions, plaques, which may exist alone or in combination, covering one or two adjacent skin regions measuring less than 15 cm in diameter.
Severe	any type of injury alone or in combination, covering an extensive region of the skin with adjacent or non-adjacent lesions, and more than 15 cm in diameter.

Table 3. Patients' profile with chromoblastomycosis concerning city.

City	n°	%
Belém	3	25
Tailândia-PA	2	16.7
Bragança	1	8.3
Piraba	1	8.3
São Miguel do Guamá	1	8.3
Abaetetuba	1	8.3
Marapanim	1	8.3
Igarapé Miri	1	8.3
Cametá	1	8.3
Total	12	100

Source: Research protocole.

Table 4. Patients' profile with chromoblastomycosis concerning occupation.

Occupation	n°	%
Retired	2	16.7
Trader	1	8.3
Farmer	8	66.7
Unemployed	1	8.3
Total	12	100

Source: Research protocole.

Table 5. Patients' profile with chromoblastomycosis concerning the lesion aspect.

Lesion aspect	n°	%
Infiltrative	2	16.7
Vegetative verrucous	8	66.7
Atrophic	2	16.7
Total	12	100

Source: Research protocole.

Table 7. Patients' profile with chromoblastomycosis concerning the disease evolution time.

Disease evolution time	n°	%
<5 years	4	33.3
6 to 10 years	4	33.3
11 to 19 years	0	0
20 to 30 years	3	25
Not registered	1	8.3
Total	12	100

Source: Research protocole.

Table 6. Patients' profile with chromoblastomycosis concerning the severity.

Severity	n°	%
Light	2	16.7
Moderate	6	50
Severe	4	33.3
Total	12	100

Source: Research protocole.

Figure 1: cromoblastomycosis lesions according to Carrión's classification.

A: verruciforme lesion; B: infiltrative lesion; C: scarring lesion.
Source: research protocole

Discussion

Regarding the origin of these patients (**Table 3**), in individual values, the city of Belém was the one that had more patients (3 patients), Tailandia had 2 patients and the other localities 1 patient each. Belém, the capital, urban district and biggest city in the state, may have present the highest number of cases because the clinic is located in this city, which facilitates the search for care. When analyzed in "rural vs. urban" environments, it's possible to notice that the rural population had a total of 9 patients, while the urban one had only 3 patients, reinforcing the important factor that the rural environment represents in the exposure to the development of the disease [6]. Regarding the occupations (**Table 4**), the most affected patients were those with occupancy related to frequent soil management, with farmers being the most prevalent, representing 8 patients. 2 patients declared themselves retired and 1 patient declared him as a trader, but all three had previous history of soil manipulation, there is also a patient who declared himself unemployed, who was homeless and garbage collector and also with a history of trauma. Such an occupational profile can be justified by the fact that the fungus that causes the disease can be found in nature in plants and on land and is introduced into the body through traumas or injuries [3], however this traumatic cutaneous injury is often not remembered or perceived by the patient [9]. Therefore, the present study demonstrated that most patients with chromoblastomycosis have or had constant contact with the soil, coming in line with the already established profile of the disease in literature [10]. Regarding the lesion's aspect (**Table 5**), the clinical classification adopted was based on the criteria described and proposed by Carrión [7]. Whenever there was more than one type of clinical aspect in the same lesion, it was considered the predominant one. In the present study there were no representats of nodular and tumoral type. The verrucous type, however, was the dominant

one, with 8 patients, representing almost 70% of the sample. The infiltrative spectrum and the atrophic aspect had 2 representatives each. This information agrees with a study conducted by Pires [11], with 65 chromoblastomycosis's patients from Eastern Amazonia, showing more than 55% of the patients presenting verruciform lesions. This finding is in agreement with several publications in the literature, as, for example, the studies of Matte [12], Minotto [13] and Silva [14], disagrees with some studies, such as the one conducted in Mexico by Bonifaz [15], that reported a predominance of nodular lesions.

Regarding the lesions's classification (**Table 6**), the graduation of Queiroz-Telles was considered [8]. The majority of patients were classified as moderate, totaling 6 patients. Disagreeing with the study by Mouchalouat [16], which showed that most cases were classified as severe. This disagreement may be due to the fact that the work by Mouchalouat [16], had a larger sample, besides, half of the patients had more than 10 years of disease evolution, which differs from the situation of this present study. Regarding the duration of the disease (**Table 7**), the delay in diagnosis may be caused due to the fact that chromoblastomycosis has an insidious evolution, which initially may only be asymptomatic lesions that generally do not interfere with the patient's activity, but with time, the itching becomes the predominant symptom of the disease and may be accompanied by local pain. Because it is very itchy, the hypothesis presumes that the spread of the disease to other sites of the skin usually occurs by autoinoculation and/or contiguous lymphatic dissemination [17]. The patients were divided into groups according to their reports and it was observed that there is a big variety of evolution time, from patients with a time of evolution of less than 5 years, to patients with 30 years of evolution. This result is in agreement with the data obtained by Mouchalouat [16] who verified a disease time variable between 8 months and 32 years, which can be attributed to

the insidious, chronic and initially asymptomatic nature of the disease. Regarding the disease evolution time, in this present study, it was found a tie between two distinct groups: less than 5 years (33.3%) and between 6 and 10 years (33.3%) of evolution.

Conclusion

The profile of the studied population showed, above all, farmers, from rural zones, classified in the moderate severity category, with vegetative verrucous lesions. Concerning the disease evolution time it's was found a tie between two distinct groups: less than 5 years and between 6 and 10 years.

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Contribution

Suzana Ferreira; Anderson Azar; Rafael Chaves; Marcella Maia; Gabriela Rocha; Heraldo Neto; Ana Carolina Nascimento; Márcia dos Prazeres; Samira Oliveira Silveira; Yan Garcia Lira; Mylla O'de Almeida; Fernanda Santos; Victor dos Santos: review of literature, data collect, interpretation of data, writing and concept of the manuscript.

Carla Pires: Concept and orientation of the manuscript, obtaining data and methodological review of the manuscript.

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Conflict of interest disclosures

The authors declare that there are no conflicts of interest in this study.

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