Cutaneous chromoblastomycosis mimicking melanoma in a renal transplant recipient

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ARTICLE INFO

Keywords: Cutaneous mycoses Chromoblastomycosis Melanoma Dermoscopy Skin cancer

ABSTRACT

Chromoblastomycosis is a primary implantation mycosis caused by melanized fungi. It affects mainly populations from remote and rural areas, and may cause significant morbidity and mortality. A 69-year-old kidney transplant recipient woman presented with a dark nodule on the first left toe and a satellite lesion. Dermoscopic exam showed multiple clustered black dots, blackened homogenous area and chrysalides, which led to the diagnostic hypothesis of melanoma. Histopathological examination was compatible with chromoblastomycosis.

1. Introduction

Chromoblastomycosis is considered a primary implantation mycosis caused by melanized fungi, that has been reported in all continents but predominantly in Asia, Africa and America. It affects mainly populations living in poverty especially from remote and rural areas, and may cause significant morbidity and mortality, including stigma and discrimination. Therefore, it is nowadays considered a Neglected Tropical Disease [1,2].

The most affected population consists of male individuals who work with soil or plants, aged between 30 and 50 years, and most of the lesions appear on the lower limbs [3]. Due to the polymorphic clinical features, lesions can be misdiagnosed as other infectious or non-infectious diseases [4].

We report a case of chromoblastomycosis mimicking melanoma.

2. Case presentation

A 69-year-old woman with a history of renal transplantation 9 years ago, due to polycystic kidneys (deceased-donor) with multiple non-melanoma skin cancer, presented with a dark nodule on the first left toe (day 0) (Fig. 1). The patient complained of local pain and progressive growth of the lesion. Skin biopsy showed melanized fungi with a predominance of sclerotic bodies, suggesting chromoblastomycosis. Skin scraping of the lesion was performed, and direct examination showed sclerotic bodies, while culture confirmed Fonsecaea pedrosoi as the etiological agent. Patient underwent excisional surgery at day +76 and lost the follow-up due to SARS-CoV pandemic. After 17 months (at day +556), the patient presented a blackish multilobulated nodule with irregular contours and surfaces, measuring 4cm in diameter, between the first and second toes, with a satellite lesion on the dorsum of the left foot (Fig. 2).

Dermoscopic exam showed multiple clustered black dots, blackened homogenous area and chrysalides (Fig. 3). Although there were no main criteria for melanocytic lesion, such as pigment network, globules, streak or homogeneous blue pigmentation, the presence of black dots and blackened homogeneous area suggested the possibility of a melanocytic lesion without specific pattern, which led to the diagnostic hypothesis of melanoma. We performed an incisional biopsy of the lesion and the histopathological examination showed pseudoepitheliomatous hyperplasia, sclerotic bodies and granulomatous infiltrate in the dermis, compatible with chromoblastomycosis (Fig. 4a,b,c,d). Fontana-Masson stain revealed a large amount of melanized fungi (Fig. 4c and d), which correspond to the black dots and blackened area that appeared on dermoscopic examination.

Oral itraconazole was prescribed, but the patient was unable to use the medication due to gastrointestinal intolerance. The progression of this chronic fungal infection led to the amputation of the first and second toes (at day +640).

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3. Discussion

Chromoblastomycosis is a chronic subcutaneous fungal infection, caused by a variety of melanized fungi, which can be found in soil, plants and decomposing wood [1,5]. Fonsecaea pedrosoi and Cladophialophora carrioni are the most common etiological agents [1,6], but other species can also be involved, such as, Phialophora verrucosa, Rhinocladiella aquaspersa, Exophiala spp, in addition to other Fonsecaea species [3].

The disease affects predominantly males (male/female 81.3/18.7) [2], rural workers, and the lesions locate mainly on lower limbs, since it is related to traumatic inoculation [4,7]. They can appear as verrucous, nodular, tumoral, papular or plaque lesions [1,8]. Dermoscopy features include reddish-black dots, yellowish orange ovoid structures (black arrows), pink and white areas, scales and crusts [8–11]. In spite of the fact that they rarely cause invasive disease, subcutaneous mycoses (sporotrichosis, chromoblastomycosis, lobomycosis, phaeohyphomycosis and zygomycosis) have an important impact on public health, as their spread may be difficult to control and the recurrence rate is high [12]. These mycoses share many common features, including their epidemiological profile, mode of transmission, indolent chronic presentation, and the presence of pyogranulomatous lesions on histopathology [12].

Cutaneous malignant melanoma is a potentially lethal skin cancer, and can be classified in superficial spreading melanoma, malignant lentigo melanoma, acral lentiginous melanoma, and nodular melanoma. Nodular melanoma presents as a brown/black elevated papular lesion, similar to the case reported. Clinically, ulceration and satellitosis can be present, and characterize worse prognosis.

Atypical network, blue-white veil, atypical vascular pattern, irregular dots/globules, irregular streaks, irregular blotches, regression structures, or chrysalides can be found on dermoscopy examination of melanoma [13].

Due to its polymorphic clinical presentations, chromoblastomycosis...
The dermis presented granulomatous infiltrate consisting of monoepidermis with pseudoepitheliomatous hyperplasia and microabscesses. The dermoscopy examination led to the diagnostic hypothesis of melanoma.

Histopathological examination of chromoblastomycosis shows epidermis with pseudoepitheliomatous hyperplasia and microabscesses. The dermis presented granulomatous infiltrate consisting of mononuclear cells, polymorphonuclear cells, epithelioid cells and giant cells. The etiologic agent can be seen as brownish corpuscles, usually arranged in pair, called sclerotic (or muriform) bodies [14,15]. These changes were seen in our case, confirming the diagnosis of chromoblastomycosis.

The interest of this case is the clinical resemblance of chromoblastomycosis with malignant melanoma, as well as the dermoscopy features. Therefore, malignant melanoma becomes one of the differential diagnoses of chromoblastomycosis.

Declaration of competing interest

There are none.

Acknowledgements

There are none.

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