Qual o Seu Diagnóstico?

Lesão Nodular e Ulcerada na Planta Direita de um Doente Imunodeprimido

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PALAVRAS-CHAVE – Doenças do Pé; Hospedeiro Imunocomprometido; Úlcera Cutânea.

Dermatology Quiz

Ulcerated Nodule in the Right Sole of an Immunocompromised Patient

KEYWORDS – Foot Diseases; Immunocompromised Host; Skin Ulcer.

WHAT IS YOUR DIAGNOSIS?

A 56-year-old man, phototype VI, from Cape Verde, resident in Portugal for 30 years, with a kidney transplant for 2 years on therapy with tacrolimus, mycophenolate mofetil and prednisolone since then, was referred to dermatology consultation due to the appearance of a hyperpigmented patch on his right sole for about 6 months, without history of trauma. The lesion grew progressively, become nodular, ulcerated and painful, with 23 x 28 mm at the time of observation (Fig. 1).

On dermoscopy, hyperpigmentation covering papillary ridges and ulceration were observed, without any other characteristic elements (Fig. 2).

Histopathology from a skin biopsy was non-specific, revealing epidermal acanthosis and capillary proliferation in the dermis, with swollen endothelium, cellular debris and fusiform cells. There was no immunoreactivity for HHV-8.

Complete excision, histological examination (Fig. 3) and microbiological tests of the skin sample were performed. Ziehl-Neelsen was negative. Research for DNA by polymerase chain reaction of *Mycobacterium tuberculosis, Mycobacterium marinum, Mycobacterium ulcerans, Mycobacterium avium complex* and *Sporothrix schenkii* was negative. Cultures for bacteria, mycobacteria, parasites and fungi were carried out.

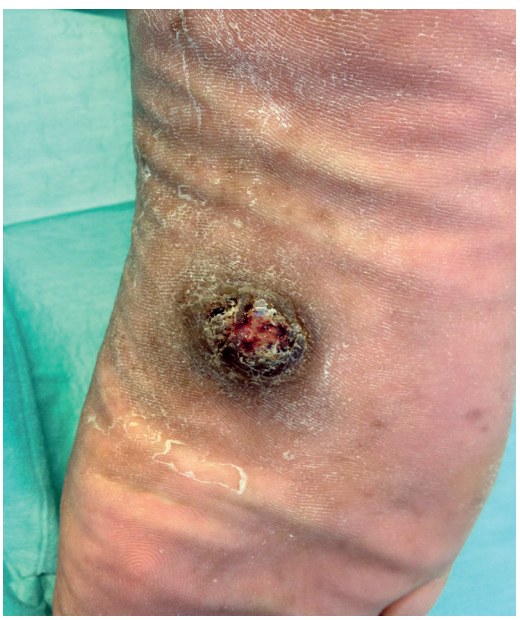

Figure 1 - Firm and ulcerated nodule on the right sole.

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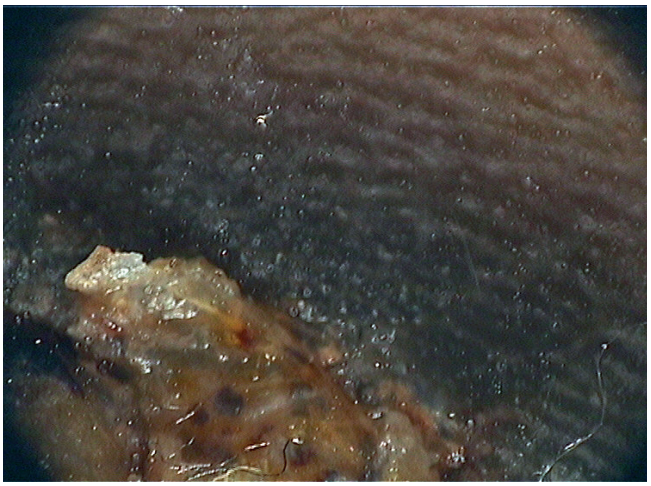

Figure 2 - Dermoscopy: hyperpigmentation covering papillary ridges.

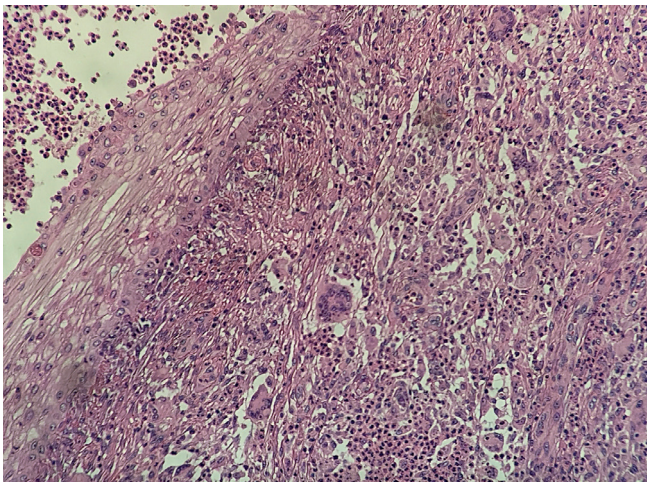

Figure 3 - Histopathology: Hematoxylin and eosin stain, original magnification x 20; no epidermal or melanocytic proliferation.

DIAGNOSIS

Deep dermatophytosis

DISCUSSION

We report a case of a locally invasive dermatophytosis in an immunocompromised patient, diagnosed by histopathology and culture. Skin histopathology showed an inflammatory process in the dermis sometimes with multinucleated giant cells surrounding numerous fungal structures, spores and hyphae identified by Periodic acid-Schiff and Grocott-Gomori methenamine silver stains (Fig. 4). Culture identified the species *Trichophyton rubrum*. An extensive workup revealed no evidence of disseminated disease. After excision, the patient was maintained with topical sertaconazole cream twice-a-day for 1 month and remains free of disease after 1-year of follow-up.

Deep dermatophytosis can resemble neoplastic lesions, namely melanoma which in non-Caucasians occurs on the soles in 30% - 60% of the cases.[1] In this case of a black patient presenting with a rapidly growing hyperpigmented patch, extending to papillary ridges on dermoscopy, our main concern was the diagnosis of melanoma. Therefore, despite an inconclusive biopsy we performed a complete excision of the lesion. Cutaneous squamous cell carcinoma is the second most common skin cancer in Caucasians, but it is the most common one in blacks and solid organ transplanted patients.[1,2] In dark-skinned individuals it tends to develop on sun-protected areas like the soles.[1] Kaposi sarcoma, also more common in immunocompromised patients, was excluded by histology.

In immunocompromised patients, deep cutaneous infections must be considered. Mycobacteria were excluded by culture and DNA PCR amplification. Subcutaneous mycosis are more common in tropical and subtropical regions and are rarely observed in Europe, but it is a diagnosis to consider in immunocompromised patients.[3] Among them we highlight sporotrichosis and eumycetoma. Sporotrichosis is caused by subcutaneous inoculation of the dimorphic fungus *Sporothrix schenckii*. It usually presents as a

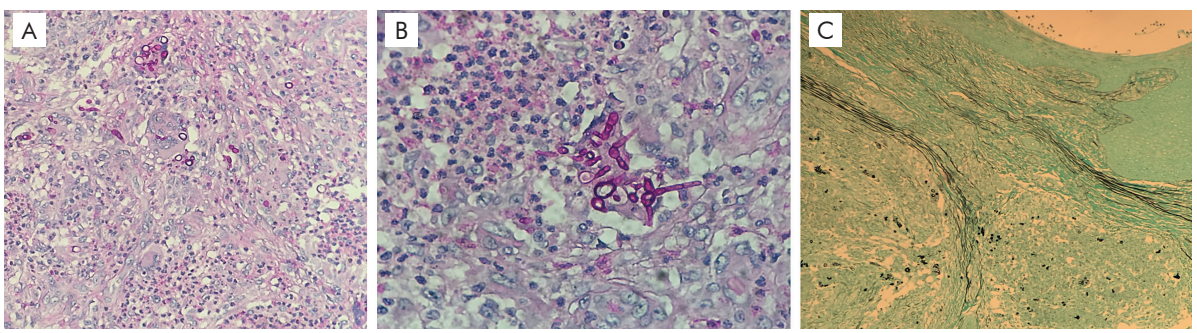

Figure 4 - Histopathology: periodic acid-schiff x 50 (**A**) and x 100 (**B**); Grocott-Gomori methenamine silver stain, original magnification x 20 (**C**).

nodular ulcerated lesion, with the subsequent appearance of similar lesions along the lymphatic drainage.[3] Eumycetoma is a chronic granulomatous subcutaneous inflammation due to persistent fungal infection. It most often affects the lower extremity, after traumatic exposure to contaminated soil. *Madurella mycetomatis* is the predominant pathogen.[3] Culture identifies the culprit microorganism. There are a few cases described of pseudomycetomas due to dermatophytes,[4] but in our case we didn't observe the draining sinus tracts and macroscopic grains characteristic of mycetoma nor mycelia formation.

Dermatophytes usually cause superficial infections. However, in immunosuppressed patients, fungi may invade the dermis and subcutaneous tissue and cause deep dermatophytosis. It may present with various clinical forms, including abscesses, ulcers, exophytic nodules and pseudomycetomas, as referred above. Deep dermatophytosis is distinct from Majocchi's granuloma as the former occurs mainly in immunosuppressed patients and has no association with hair follicles. It usually appears early after initiation of immunosuppressive medication (< 3 years) in patients with superficial fungal infections.[5] Histological diagnosis of deep dermatophytosis can be confirmed only if fungi are observed inside the granuloma, excluding contamination of the specimen by a superficial infection. The most prevalent dermatophyte species isolated is the anthropophilic *Trichophyton rubrum*, as in the present case.[5] It responds well to systemic antifungal treatment, especially terbinafine or triazoles. Surgery complemented with topical antifungal should be considered in cases unresponsive to systemic therapy or for patients who cannot be medicated with systemic antifungals.[5]

In conclusion, this case emphasizes the possibility of deep dermatophytosis in immunocompromised patients with preceding superficial fungal infections which may progress to invasive and disseminated fungal infection. Therefore, physicians should promptly treat superficial dermatophytosis, if possible before immunosuppression is initiated. Treatment should be aggressive and patients should be kept under close observation.

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Protecção de pessoas e animais: Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia da Associação Médica Mundial

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