

Case Report

Disseminated nodular cutaneous candidiasis in immunocompromised patients at the outpatient treatment center of Nkembo hospital, Libreville: A case report

ABSTRACT

INTRODUCTION

Candidiasis is a fungal infection of the skin and/or mucous membranes caused by *Candida* spp, most commonly *Candida albicans*. Its presence is often favored by immunosuppression, obesity, maceration or humidity.

The aim of this work is to report this atypical disseminated nodular clinical appearance of cutaneous candidiasis in a patient living with the human immunodeficiency virus who is on treatment leave and lost to follow-up.

OBSERVATION

This is a 34-year-old patient, who consulted for hyperpigmented, ulcerated, diffuse scaly papulonodular lesions, with involvement of the upper and lower limbs, the anterior and posterior trunk, infiltrated with scaly and pustular red plaques in places on the face and ears, giving a pseudolepromatous appearance. Direct mycological examination of the scales reveals round and budding yeasts; culture revealed *Candida albicans* at 7 days. The diagnosis was nodular cutaneous candidiasis.

The patient was placed on Sertaconazole cream and Fluconazole 200 mg/day (D1) then 100 mg/day/3 months and continued his TDF-3TC-DLG treatment. At the end of January 2023, we observed an almost complete subsidence of the lesions.

CONCLUSION

Cutaneous candidiasis is diagnosed clinically in dermatological practice, the nodular and infiltrated appearance should be known, mycological examination should be used especially when associated with oropharyngeal candidiasis. Fluconazole remains effective against *Candida albicans* and local treatment with a triazole is sometimes necessary.

KEY WORDS: Candidiasis, cutaneous, nodular, Disseminated, Immunocompromised

INTRODUCTION

Candidiasis is a fungal infection of the skin and/or mucous membranes caused by *Candida* spp, more commonly *Candida albicans*. On the skin, it affects small and large folds much more, rarely diffuse on the integument. Several risk factors are reported, notably resulting from immunosuppression. [1,2]

Candidiasis is the most common infection in patients infected with HIV. Its occurrence is correlated with the degree of immunosuppression reflected in the CD4 count ($< 300/\text{mm}^3$), and it is predictive of the progression of HIV infection. [3]. Oral involvement classifies the patient as WHO stage 3 and oral and pharyngeal involvement classifies the patient as WHO AIDS stage 4.

The usual clinical appearance of cutaneous candidiasis is localized involvement. Candidiasis produces an erythematous background covered with a malodorous creamy coating with a centrifugal evolution. [4]

The objective of this work is to report this atypical disseminated nodular clinical appearance of cutaneous candidiasis in a patient living with the human immunodeficiency virus lost to follow-up after therapeutic cessation of his antiretroviral treatment (ARV).

Case presentation

This was a patient living with HIV aged 34, non-compliant, irregularly followed since 2018, lost to follow-up, on therapeutic cessation of his ARVs who consulted in November 2022 for dermatological lesions such as scaly hyperpigmented papulonodules. diffuse ulcerated itching with involvement of the upper limbs including the arms and forearm, the lower limbs including the thighs and legs, the posterior and anterior trunk with involvement of the abdomen (Figure 1 and Figure 2), we also note infiltrated red scaly crusty and pustular plaques in places on the face (forehead, tip of the nose, cheeks, brow bone) and the external pinnae of the ears giving a pseudolepromatous appearance (Figure 3, Figure 4 and Figure 5). Oral thrush was also noted. The lesions had been evolving for more than 2 months.

The general examination was unremarkable, the neurological, pulmonary, cardiac, ENT and joint examinations were normal. We posed as diagnostic hypotheses malignant prurigo nodular, cryptococcosis, cutaneous histoplasmosis, pseudolepromatous leishmaniasis and lepromatous leprosy.

A follow-up assessment was carried out including kidney and liver function, a search for other opportunistic infections with the search for Hbs Ag, HCV Ab, TPHA/VDRL, chlamydial serology, GnExpert sputum, chest x-ray. Fasting blood sugar levels were normal, we found a particularity in our patient to be hypochromic microcytic anemia with Hb:9, a CD4 lymphocyte level of 20 cells/mm³ indicating profound immunosuppression. Direct mycological examination of the scales revealed round and budding yeasts, the culture revealed *Candida albicans* at 7 days. Ziel-Neelson staining found numerous diplococci. Biopsy of papulonodular lesions could not be performed. The diagnosis of nodular cutaneous candidiasis was retained based on clinical and paraclinical arguments.

The patient was placed on a local antiseptic based on Chlorhexidine combined with an oral antibiotic of Amoxicillin + Clavulanic Acid for 5 days. A local antifungal based on Sertaconazole cream and a general antifungal based on Fluconazole at a dosage of 200mg/day (D1) then 100mg/day for 3 months. Then the continuation of his ARV treatment is TDF-3TC-DLG. At the end of January 2023 we observed an almost complete collapse of the lesions on the face, ears, trunk, upper and lower limbs, giving way to hyperpigmentation and unsightly depressed scars. (Figure 6, Figure 7, Figure 8, Figure 9 and Figure 10)

A consultation with the psychologist was obligatory to investigate the causes of his non-compliance and for the resumption of antiretroviral treatment with a view to the regularity of medication intake and appointments.

DISCUSSION

Candida is a yeast that is normally found on the skin and in the mouth, digestive tract and vagina, and does not usually produce a lesion. Under certain conditions, however, *Candida* can infect the mucous membranes and moist areas of the skin. The most affected areas are the contour of the mouth, the groin, the armpits, the spaces between the fingers and toes in the vast majority, the uncircumcised penis, the skin fold located under the breasts in certain obese women, the nails and the skin folds of the stomach. Certain factors are conducive to the development of this fungus. [1] . The optimal

conditions for the development of *Candida albicans* are heat, humidity, acidic pH, an environment rich in sugar, maceration (repeated contact with water, occlusion, obesity, perspiration), chronic irritations (dental prostheses, post-radiation mucositis); xerostomia and other local factors of exogenous origin: pastry chef (repeated skin contact with sugar). General factors such as congenital immunosuppression, physiological (extreme ages of life and pregnancy) and acquired (treatment, HIV, diabetes), other known factors medications: systemic antibiotics, estrogen progestins (genital mucosal infections, corticosteroid therapy and immuno suppressants can promote the occurrence of cutaneous candidiasis [5,6] . In our patient the favoring factor found was his severe HIV immunosuppression with a CD4 LT level of 20 cells per mm³.

Three arguments are essential for the diagnosis of cutaneous candidiasis, including firstly, the clinical appearance, of evocative principle, and sufficient for the diagnosis even if the clinical manifestations carried out have very different aspects depending on the topography; then the biological confirmation by the mycological examination of simple technique and the culture that gives us the species; and trial treatment which is very effective with rapid regression of the lesions. The clinical manifestations can take on different aspects: localized forms are the most common, affecting the large folds, the interdigital spaces, the half-mucosa and the appendages, particularly the nails. Diffuse forms are much less common and are most common in infants and young children. Deep lesions are exceptional and are observed in young children and especially in the context of immunosuppression as in our case. Whatever the location, candidiasis produces an erythematous background covered with a malodorous creamy coating with a centrifugal evolution in the form of a pustular border or a desquamative collar. [4] . Atypical ulcerative forms, or ulcero-necrotic forms with infiltration of the soft parts of the face have been described. [1,2] . Our patient presented scaly ulcerated papulonodular lesions of the upper and lower limbs, the posterior trunk and the thorax, associated with crusty and pustular scaly infiltrated plaques of the face and ears giving an atypical clinical appearance of cutaneous candidiasis, one of the first in the patient living with HIV in the tropics.

The differential diagnoses made were firstly malignant nodular prurigo, which is a chronic inflammatory skin disease characterized by intensely itchy hyperkeratotic nodules located on the extensor surfaces of the extremities and trunk. [7] . Then cutaneous cryptococcosis which is a mycotic dermatosis caused by *Cryptococcus*. It usually occurs in subjects infected with HIV, manifests as umbilicate papules or as

papular, nodular and tumorous lesions disseminated predominantly in the limbs. [8,9] . Pseudo-lepromatous cutaneous leishmaniasis is a parasitic infection caused by leishmania manifested by infiltration of the face made up of multiple nodules simulating lepromatous leprosy and sometimes with infiltration of the ears. Cases of association with HIV2 have also been described. [10,11] . Cutaneous histoplasmosis is a deep mycosis caused by dimorphic fungi. There are two types of histoplasmosis, individualized on morphological criteria: the small yeast form, called *Histoplasma capsulatum* var. *capsulatum* and the large yeast form or *Histoplasma capsulatum* var. *duboisii*. L. It has a lesion polymorphism very often associating umbilicated hemispherical papules, ulcerated nodules and cold abscesses. Associations with HIV are reported in the literature. [12,13] . Lepromatous leprosy is an infectious disease caused by Hansen's bacillus, it is caused by infiltrated papular lesions of the face, the brow bone, the tip of the nose and the ears. Rare cases of leprosy and HIV have been described. [14,15]

The diagnosis of cutaneous candidiasis is clinical in dermatology practice. Mycological examination and culture are customary to find the species in question. After sampling the scales using a vaccinostyle, a direct examination is carried out and yeasts in the form of blastospore, pseudomycelium or mycelium can be observed, then a culture in Sabouraud medium which highlights the species. Other identification methods are described in the literature such as serology which detects antibodies and PCR. [16,17] . Among the species found, *Candida albicans* is more incriminated, other species such as *Candida pelliculosa*, *Candida famata* have also been found. [2,18,19] . In our patient, the mycological examination of the scales followed by culture revealed *Candida albicans*. In patients living with HIV, cutaneous candidiasis is frequently implicated among other mycoses. *Candida albicans* is far ahead of Trichophyton such as *rubrum*. [20] . Histology must be carried out especially for atypical forms in order to eliminate other differential diagnoses in patients living with HIV; we were not able to carry it out in our patient; we held our arguments clinical, mycological and progress under treatment to establish the diagnosis of disseminated cutaneous candidiasis.

The treatment of cutaneous candidiasis is based on sensitive local and oral antifungals, Fluconazole is more used for diffuse forms. [1, 2, 3]. Fluconazole is the treatment of choice for oropharyngeal, esophageal, vaginal and cutaneous candidiasis as well as in candidemia. The other triazoles have a broad spectrum of activity, but more limited indications for treatment. As for nystatin (Nystatin), it is effective in the treatment of benign oropharyngeal candidiasis. The duration of treatment should be

adapted to the patient's immune status, the severity of the infection and the clinical response. It is suggested to assess liver function at the start of treatment, monthly for the first three months, and periodically thereafter. Liver toxicity is not related to the duration of treatment, but rather to high serum levels often linked to the use of high doses or drug interactions. [21] In our patient, a local antifungal based on Sertaconazole cream and a general antifungal based on Fluconazole at a dosage of 200 mg/day (D1) then 100 mg/day for 3 months. A regression of the lesions was very considerable at 2 months then at 3 months with a collapse of the nodular lesions of the upper and lower limbs, the posterior trunk and the abdomen (Figure 6 and Figure 7) with an uninfiltated face compared to the beginning of the treatment.

CONCLUSION

Candidiasis is the most common infection in patients infected with HIV. Oropharyngeal candidiasis occurs at all stages of infection, as soon as CD4 counts decrease below $300/\text{mm}^3$, skin and mucosal involvement is frequently encountered and indicates progression of HIV infection to stage 3 or 4 WHO AIDS. When faced with disseminated candidiasis, it is necessary to look for a factor favoring immunosuppression. When faced with oropharyngeal candidiasis associated with skin lesions such as a papule or nodule surmounted by scale in a patient living with HIV, a mycological examination should be carried out if possible to look for a deep or superficial mycosis. Cutaneous candidiasis is clinically diagnosed in dermatology practice; the papulonodular appearance of the limbs and trunk, and the infiltrative appearance of the face should be noted. Treatment of disseminated cutaneous candidiasis is general and local. Fluconazole should be prescribed as first-line treatment combined with a local anti-candidiasis agent. In patients living with HIV, treatment must be concomitant with taking antiretroviral treatment and monitoring of liver and kidney function must be considered two months or three months after antifungal treatment with a thiazole.

KEY WORDS: Candidiasis, cutaneous, nodular, Disseminated, Immunocompromised



Fig 1-2: Ulcerated itching in the upper and lower limbs and back of the body

Fig 3-5: Infiltrated red scaly, crusty, and pustular plaques

Fig 6-10: Gradually reduced scars

PATIENT DECLARATION AND CONSENT

The patient's free and informed consent was obtained in order to use his personal data for scientific publications.

CONFLICTS AND INTEREST

The authors declare no conflicts and interests

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