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Case Report

Tinea nigra: rare and almost never remembered superficial mycosis

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ABSTRACT

Tinea nigra is a chronic fungal infection of the stratum corneum caused by the fungus *Hortaea werneckii*, clinically manifested by asymptomatic and hyperchromic macules ranging in color from light brown to black and affecting mainly the palmar and plantar areas. must be differentiated mainly from acral melanoma. It occurs mainly in South America (Brazil, Colombia, Venezuela), Central America and the Caribbean (Panama, Cuba), Asia (India, Japan, Sri Lanka) and the coastal regions of Africa and is uncommon in Europe, correlated with travel and immigration intercontinental. In relation to Brazil in the period 1916-2020, 203 cases were reported. We present a case of palmar tinea nigra in an adult patient with 3 months of evolution, diagnosed through clinical examination, direct mycological examination, Sabouraud agar culture, and dermatoscopy of the lesion was also performed. who fully responded to topical therapy with miconazole.

Keywords: Tinea nigra, Superficial mycosis, Differential diagnosis

INTRODUCTION

It is an uncommon and cosmopolitan superficial mycosis generally observed in coastal areas of countries with tropical and subtropical climates.[1-4]

It occurs mainly in South America (Brazil, Colombia, Venezuela), Central America and the Caribbean (Panama, Cuba), Asia (India, Japan, Sri Lanka) and the coastal regions of Africa. Reported less frequently in North America (Mexico, coastal southeastern USA), Oceania (Australia) and uncommon in Europe, correlated with intercontinental travel and immigration.[1-5]

It can affect any age and is more prevalent in patients under 20 years of age. It is uncommon in adults and uncommon in the elderly. The records of the youngest and oldest ages of patients were 2 and 75 years old, respectively.[4,6] The etiological agent is a dematiaceous and geophilic filamentous fungus called *H. werneckii*. The fungus has been isolated from vegetation such as shrubs, foliage, grasses and rotten wood, decomposing fish and marine molluscs.[2,4] The incubation period is not well determined with approximate estimates of two to seven weeks, but with reports of the appearance of lesions months and even years after contact with endemic areas or beaches.[7,8]

The means of transmission remains unknown. The infection can be evident after trauma, but also without any continuity of the skin, possibly due to local immunity unbalancing the human/fungus relationship. Inter-human contagion occurs eventually and is usually intrafamilial or exposure to the same source of infection. The association of the disease with palmar and plantar hyperhidrosis has been considered a predisposing factor by several authors.[3,9]

CASE REPORT

A 33-year-old male patient, whose work activity was gardening, without the use of protective measures such as appropriate gloves. He states that approximately 3 months ago he noticed the appearance of a brownish, slightly scaly spot, without symptoms, on the right palm region and which has been gradually increasing in size (Figure 1). He denies the use of any topical or systemic medication,

having only applied moisturizing creams several times a day, which did not change the condition. He denies the appearance of similar lesions in the left palmar region or in the plantar regions. Given the hypothesis of tinea nigra, a direct mycological examination was carried out which revealed tortuous dematiaceous hyphae, yellow-brown conidia and the terminal portion with chlamydoconidia and yeast cells with budding (Figure 2). The material was cultured on Sabouraud agar medium and revealed a yeast-like culture, mucoid, shiny and black in color (Figure 3), and microculture revealed several fungal elements (pleomorphism) with pseudohyphae and septate hyphae, dark with annelids or yeast cells, oval or elliptical annelids producing numerous unicellular or bicellular conidia (Figure 4). Dermoscopy of the lesion was also performed, which revealed thin and superficial spicules (corresponding to the pigmented hyphae of the stratum corneum), homogeneous and pigmented with a light brown to black color, not following the dermatoglyphs and absence of the pigment network, globules and striae of the melanocytic lesions (Figure 5).

Figure 1: Brownish, circular macule approximately 0.5 cm in diameter on the right palmar region.

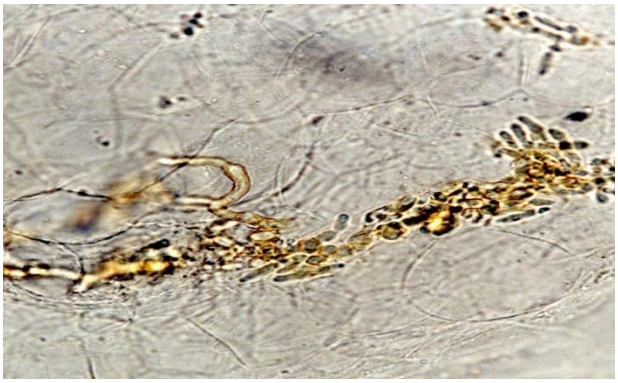

Figure 2: Direct examination, scales clarified with KOH. Hyphae dematiaceous, septate, short and tortuous.

Biochemical laboratory tests, blood glucose, serology for HIV, syphilis and hepatitis B were normal or negative. Based on the clinical, mycological and dermoscopic findings, the diagnosis of tinea nigra was confirmed. Treatment was instituted with topical miconazole cream, applied twice a day for 4 weeks, with the patient progressing to complete healing of the lesion.

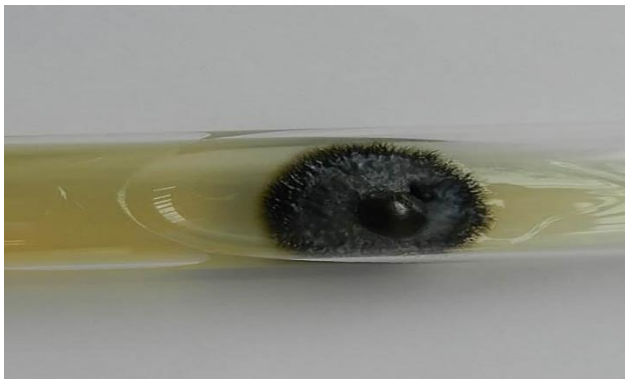

Figure 3: Culture: mucoid, rough, moist, shiny and blackish colony.

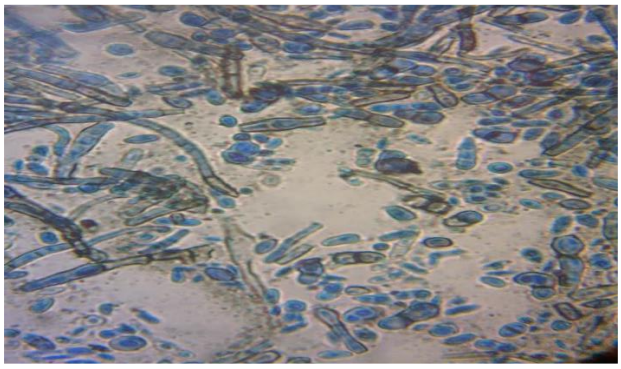

Figure 4: Microculture: dematia hyphae and unicellular or bicellular elliptical annelids.

Figure 5: Dermoscopy of the lesion.

DISCUSSION

Tinea nigra is a rare, chronic fungal infection of the stratum corneum caused by the fungus *Hortaea werneckii*. The first clinical manifestations of the disease reported in imperial soldiers in 1872 in southern China were attributed to Patrick Manson and considered for decades by some authors as the first worldwide observations of tinea nigra. However, at the end of the 1920s, Castellani concluded that the macules on the neck and chest described in

imperial soldiers were clinical manifestations of pityriasis versicolor and not tinea nigra.[10] Mycosis received several synonyms such as palmar keratomycosis nigricans initially and later keratophytia nigra, pytiriasis and Manson's microsporia nigra, tinea nigra palmaris and plantaris, palmar and plantar tinea nigra, tinea preta, epidermal cladosporosis, palmar epidermomycosis, palmar keratomycosis nigricans, keratophytosis black and superficial phaeohyphomycosis; however, the name tinea nigra continues to be accepted and used.[11-14] The initial lesion is a small, hyperchromic and asymptomatic punctate macule, which may go unnoticed. Growth is slow and centrifugal, measuring between 1 and 5 cm, evolving into different clinical forms.[7,15] The involvement is usually unilateral. Locations in the cervical regions, arms, forearms, wrists and legs are rare.[7,16,17]

The clinical forms of the lesions are predominantly geographic, occasionally round or oval, and exceptionally linear, wedge-shaped or triangular. Atypical shapes were described as the speckled shape with a “salt and pepper” pattern and shapes similar to rocks and animals.[18,19] Systemic infections caused by *H. werneckii* are extremely rare, with ophthalmological involvement being identified in an 83-year-old woman, immunocompetent and without skin involvement, who, after cataract surgery, developed infectious fungal endophthalmitis and in a 55-year-old farmer with tinea bilateral palmar nigra associated with peritonitis due to peritoneal dialysis and correlated with fungal contamination of the abdominal cavity during handling without gloves when changing the dialysis bag.[20,21] Its main differential diagnoses must be made with benign and malignant melanocytic lesions, such as acral melanoma, pityriasis versicolor, post-inflammatory and exogenous pigmentations (paints, silver nitrate, ink, dyes, tar), fixed pigmentary eruption, hematoma, contact dermatitis, Addison's disease, syphilis.

The therapeutic response with topical medications is generally successful, and compounds with amorolfine, ciclopirox olamine and imidazole derivatives can be used.[22,23] Systemic antifungals are not necessary for cutaneous infections caused by *H. werneckii*.

CONCLUSION

In the present case, we report a rare condition of palmar tinea nigra, diagnosed through clinical examination and, given clinical suspicion, the diagnosis was confirmed through direct mycological examination, culture and microculture, and a dermatoscopy examination of the lesion was also carried out and its satisfactory resolution with topical therapy with miconazole. It is an uncommon superficial mycosis and little remembered by dermatologists and clinicians, highlighting that its main differential diagnosis must be made with acral melanoma.

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