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Case Report

Tinea Nigra Palmaris in a Pediatric Hispanic Patient

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Abstract: Tinea nigra is a superficial fungal infection caused by Hortaea (Exophiala or Phaeoannellomyces) werneckii. It affects the stratum corneum of the palms and, rarely, the soles, as well as other sites. It is characterized by dark brown or black, well-defined, noninflammatory, hyperpigmented patches covered by very fine scales; it is most often asymptomatic. We present a case of a 4-year-old Hispanic little boy presented with an asymptomatic brownish irregular patch on the left palm for 5 months. Skin examination revealed a dermatosis located on the left hand, on the palmar side, unilateral, consisting of a hyperchromic, bilobed, brown spot, 5 cm in diameter on its major axis by 2.5 cm in the minor diameter, well-defined edges, with a chronic evolution of approximately 5 months and asymptomatic. Dermoscopy revealed a light brown macule with "Brown spicules" forming a reticulated patch. Direct examination shows olive-green pigmented phaeoid filaments, septate, branched, and tortuous. He received treatment with 1% isoconazole cream every 8 hours for 1 month with favorable results.

Keywords: Pigmented Macules, Superficial Fungal Infection, Fungal Infection, Hortaea Werneckii, Phaeohyphomycosis, Tinea Nigra.

INTRODUCTION

Tinea nigra is a superficial fungal infection caused by Hortaea (Exophiala or Phaeoannellomyces) werneckii. It affects the stratum corneum of the palms and, rarely, the soles, as well as other sites. It is characterized by dark brown or black, well-defined, noninflammatory, hyperpigmented patches covered by very fine scales; it is most often asymptomatic [1, 2].

It has been observed that most patients do not have obvious specific predisposing factors, and immune system deficiency does not appear to be a determining factor for infection. There is also no relationship between genetics as a predisposing factor [3].

It tends to affect children and young adults more frequently, with a 3:1 male predilection for females [4].

Areas of the body that contain high concentrations of eccrine sweat glands are the most affected, which is why hyperhidrosis has been proposed as a risk factor for its development. Therefore, it most frequently affects the soles and palms. However, it is not limited to these areas, but can also extend to the fingers, interdigital areas, nails, neck, trunk, and genitals [5, 6].

CASE PRESENTATION

A 4-year-old Hispanic little boy presented to the hospital, in the dermatology service for the evaluation of an asymptomatic brownish irregular patch on the left palm for 5 months. The lesion gradually increased in size.

The child had no history of trauma or palmar hyperhidrosis but had exposure to subtropical regions because he resided in a rural town from Veracruz, Mexico. There was no history of a similar condition in the family.

Skin examination revealed a dermatosis located on the left upper extremity affecting the hand, on the palmar side, unilateral, consisting of a hyperchromic, bilobed, brown spot, 5 cm in diameter on its major axis by 2.5 cm in the minor diameter, well-defined edges, with a chronic evolution of approximately 5 months and asymptomatic. (Fig. 1).

Fig. 1: Hyperchromic, bilobed, brown spot with well-defined edges

A closer examination using dermoscopy revealed a light brown macule with “Brown spicules” forming a reticulated patch (Fig. 2).

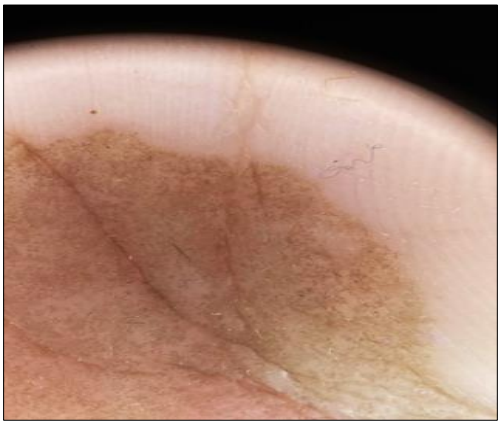

Fig. 2: Dermoscopy showa brown macule with “Brown spicules” forming a reticulated patch

Direct examination shows olive-green pigmented phaeoid filaments, septate, branched, and tortuous. (Fig. 3 and 4, courtesy of Roberto Arenas MD).

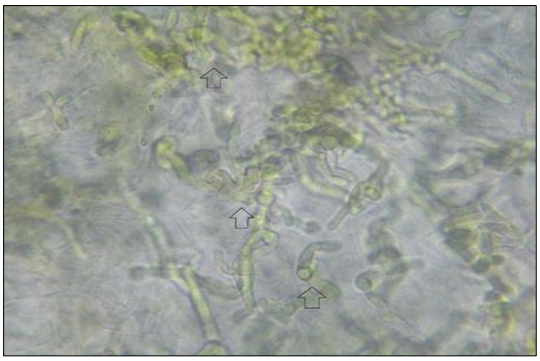

Fig. 3: Direct examination shows phaeoid filaments

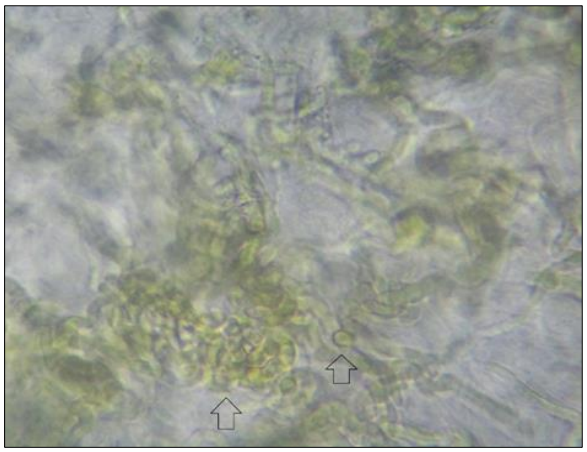

Fig. 4: Direct examination shows olive-green pigmented phaeoid filaments, septate, branched, and tortuous

He received treatment with 1% isoconazole cream every 8 hours for 1 month with favorable results. (Fig. 5).

Fig. 5: After a month of treatment with 1% isoconazole cream

DISCUSSION

As mentioned above, the melanized, polymorphic, yeast-like fungus Hortaea werneckii, formerly known as Exophiala werneckii or Cladosporium werneckii, is the black yeast responsible for tinea nigra [7].

Hortaea werneckii is well known for its halophilic and halotolerant properties, meaning it requires strict, high-salinity conditions. This explains its affinity for tropical and subtropical regions, predominantly in Latin America, in places like Mexico, Brazil, Venezuela, Chile and Cuba, the countries with the most reported cases on that continent [-9] The aforementioned case originated in the northern part of the state of Veracruz, Mexico, known for being one of the country's tropical regions. The lesion occurred on the palm of the hand, as has been reported in most cases, as Umemura *et al*., described the palms as the most frequently affected area in 37 cases (78.7%), followed by seven cases (14.9%) on the sole of the foot and three cases (6.4%) on the fingers and palms in an integrated study of 47 Japanese cases. Clinically, tinea nigra presents as pigmented macular patches on the palms or soles of the feet, with simultaneous involvement of both areas being rare. The incubation period typically ranges from several weeks to 18 months [10-11].

It is not necessary to biopsy squamous lesions; when it is performed, it is usually for academic purposes since a rapid diagnosis can be achieved by scraping the stratum corneum with a scalpel blade and a KOH preparation, which shows pigmented hyphae, and can subsequently be confirmed by the growth of a dematiaceous mold in the culture medium. Hortaea werneckii cultures develop very rapidly on conventional media, between five and eight days, with black colonies,

initially creamy, which eventually become hairy; the former are formed by pigmented blastoconidia with a central septum, and the latter with thick, pigmented filaments and blastic, spheroidal conidia (like balls or baguettes) [5-12].

Regarding treatment, earlier this year, Sánchez-Romero *et al*., published a systematic review of tinea nigra. After analyzing the available literature, they identified 102 cases of tinea nigra. They reported that more than 25 formulations were used, with Whitfield ointment being the most common (12 cases), followed by 2% ketoconazole cream (11 cases), 1% terbinafine cream, and 1% isoconazole cream (both 10 cases). Other therapies included clotrimazole 1% cream, ciclopirox 1% cream, itraconazole 200 mg PO, butenafine 1%, urea 15% cream, miconazole 2% cream, tolnaftate 1% cream, sertaconazole 2%, griseofulvin 250 mg PO, topical naftifine, griseofulvin cream, sulfur soap, imidazole cream, and oxiconazole cream, among others. Additionally, it is worth mentioning that two cases presented spontaneous healing. They mention that the average duration of treatment with all formulations was 4 weeks, with a resolution rate of 100%. It has been observed that treatment shows a high success rate with topical therapies, as in the case reported in this publication [8].

CONCLUSIONS

Most cases occur in tropical regions, especially coastal areas, and frequently in children. The most important predisposing factor is hyperhidrosis. Diagnosis is based on clinical examination and direct mycological examination of the lesion. Dermoscopy can be used to rule out differential diagnoses, such as junctional nevi, metal pigmentation, dye stains, fixed pigmented erythema, dermatosis neglecta, and malignant melanoma, primarily to provide timely diagnosis and treatment.

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