

What Is Your Diagnosis?



A 43-year-old woman presented with rapidly growing, darkly pigmented macules on her toe of 3 weeks' duration. She had recently traveled to Florida and spent time on the beach. The patient had no specific recollection of contact with rotting wood.

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Joseph Schneider, DO, Botsford General Hospital, Michigan State University, Farmington Hills.
Annette LaCasse, DO, Department of Dermatology, Pontiac Osteopathic Hospital Regional Medical Center, Michigan.
The authors report no conflict of interest.

The Diagnosis: Tinea Nigra

The patient presented with a family history of melanoma. She had recently vacationed in Florida and spent much of her time on the beach. She did not experience pruritus or other symptoms. The lesion had progressively grown since she first noticed it 3 weeks prior. Physical examination revealed irregularly shaped black macules on the medial aspect of the right third toe (Figure 1). The pigment appeared to be superficial in the stratum corneum.

She was otherwise healthy with no contributory medical history or medication use. The clinical differential diagnosis of this entity included

superficial spreading melanoma, ochronosis, and tinea nigra.

Pigmented hyphae were seen within the cornified layer with periodic acid–Schiff stain (Figure 2). A sparse perivascular lymphocytic infiltrate also was seen. Fontana-Masson silver stain highlighted the melanin pigment within the fungal hyphae (Figure 3). Hyphae also were seen on standard hematoxylin and eosin stain (Figure 4).

Tinea nigra was diagnosed and the patient was started on sertaconazole nitrate cream 2% twice daily. She experienced complete resolution within 2 weeks.



Figure 1. Pigmented macules with irregular borders.

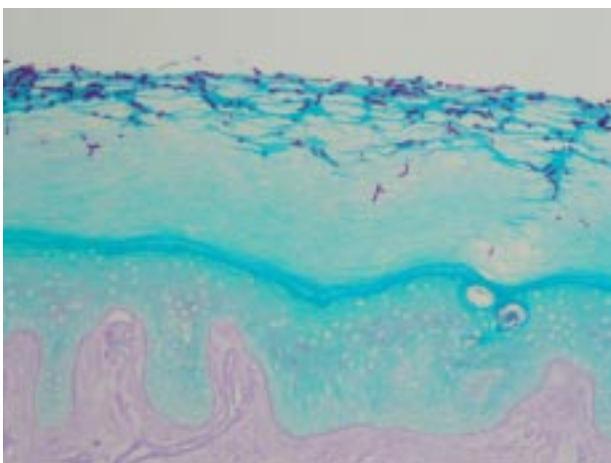


Figure 2. Bright purple–stained hyphae and spores (periodic acid–Schiff, original magnification $\times 40$).

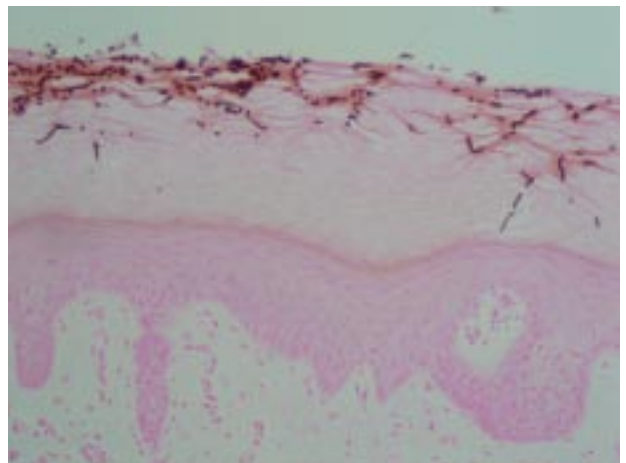


Figure 3. Pigmented hyphae and spores (Fontana-Masson silver, original magnification $\times 40$).

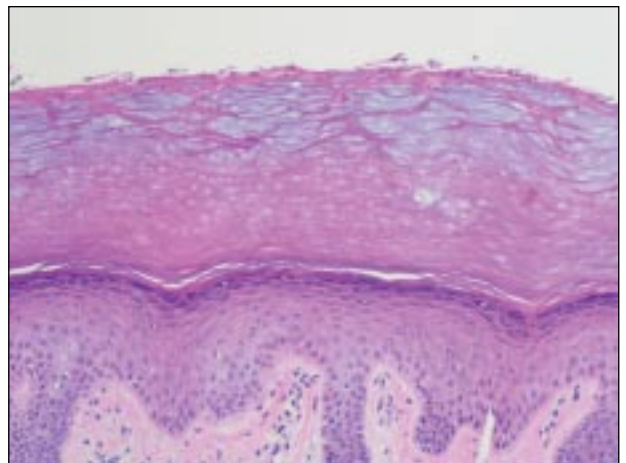


Figure 4. Faint purple–stained hyphae (H&E, original magnification $\times 40$).

Tinea nigra is a noninflammatory, superficial, phaeohyphomycosis fungal infection caused by the organism *Hortaea* (formerly *Phaeoannellomyces* and *Exophiala*) *werneckii*. Tinea nigra was first described in 1891 as keratomycosis nigricans palmaris. Infection occurs via direct inoculation from a contamination source, such as soil, sewage, decaying wood, or compost. The incubation period typically is 2 to 7 weeks but has been reported to be as long as 20 years.¹ The size of the lesion ranges from millimeters to centimeters depending on the duration of infection. The organism does not invade past the stratum corneum. Patients generally are asymptomatic, though some report pruritus. Tinea nigra is not uncommon in tropical regions of Central America, South America, Africa, and Asia.² It is rare in the United States and most patients report recent travel to a tropical or subtropical climate. Hyperhidrosis may be a risk factor for contraction of this organism. Microscopic examination of skin scrapings treated with potassium hydroxide 20% reveals thick, septate, branching hyphae that contain a dark pigment in their walls. Cultures on Sabouraud agar grow mucoid colonies within 1 week that become progressively olive to greenish black in color.

The main differential diagnosis is superficial spreading melanoma.³ Treatment generally is successful with topical medications including imidazole antifungals, salicylic acid, retinoids, hydroxypyridone antifungals (ciclopirox), and allylamine antifungals (terbinafine hydrochloride). Oral therapy is rarely needed, but successful treatment may be achieved with oral itraconazole and terbinafine hydrochloride. Because of the superficial nature of the infection, scraping of the skin also may be curative.⁴

REFERENCES

1. Blank H. Tinea nigra: a twenty-year incubation period? *J Am Acad Dermatol*. 1979;1:49-51.
2. Sobera JO, Elewski BE. Fungal diseases In: Bologna JL, Jorizzo JL, Rapini RP, eds. *Dermatology*. Philadelphia, PA: Elsevier; 2003:1171-1198.
3. Tseng SS, Whittier S, Miller SR, et al. Bilateral tinea nigra plantaris and tinea nigra plantaris mimicking melanoma. *Cutis*. 1999;64:265-268.
4. Marks JG Jr, King RD, Davis BM. Treatment of tinea nigra palmaris with miconazole. *Arch Dermatol*. 1980;116:321-322.