Dendritic pattern: Unique onychoscopic feature in endonyx

Deepak Jakhar, MD, Chander Grover, MD, DNB, MNAMS, and Ishmeet Kaur, MD
Delhi, India

Key words: dermoscopy; endonyx; onychomycosis; onychoscopy; USB dermatoscope.

CLINICAL CHALLENGE

Endonyx onychomycosis is a rare variant of onychomycosis characterized clinically by milky-white discoloration of the nail plate (Fig 1).[1] Diagnosis of endonyx onychomycosis is based mostly on direct microscopy (potassium hydroxide mount), fungal culture, or histopathology. Direct microscopy and fungal cultures have variable positivity,[2] and histopathology (periodic acid–Schiff staining) has high sensitivity and specificity. Because of patient apprehension and clinician inexperience, these techniques are often not optimal for diagnosis.[2]

Fig 1. Endonyx in the little and middle finger of a patient.

SOLUTION

Dermoscopy of the nail (onychoscopy) is a relatively new modality capable of showing the characteristic features of onychomycosis, including the jagged proximal edge of an onycholytic area with spikes, longitudinal striae, the Aurora Borealis pattern, and distal irregular termination or the subungual ruin pattern.[2] These features are seen in distal and lateral subungual onychomycosis, the most common type of onychomycosis. None of these features are present in endonyx onychomycosis, which is a less common variant. We have noticed that in endonyx onychomycosis nail plate dermoscopy reveals the presence of white cloud-like structures with extensive irregular branching at the borders (Fig 2, *A*). At higher magnification, a dendritic pattern can be seen (Fig 2, *B*). Distal nail plate onychoscopy shows white, shiny areas confined to the nail plate (Fig 2, *C*).

From the Department of Dermatology and STD, University College of Medical Sciences and Guru Teg Bahadur Hospital, Delhi.
Funding sources: None.
Conflicts of interest: None disclosed.
Correspondence to: Chander Grover, MD, DNB, MNAMS, Department of Dermatology and STD, University College of Medical Sciences and GTB Hospital, Dilshad Garden, Delhi 110095, India. E-mail: chandergroverkubba@rediffmail.com.
J Am Acad Dermatol 2019;81:e89-90.
0190-9622/$36.00

https://doi.org/10.1016/j.jaad.2019.01.071

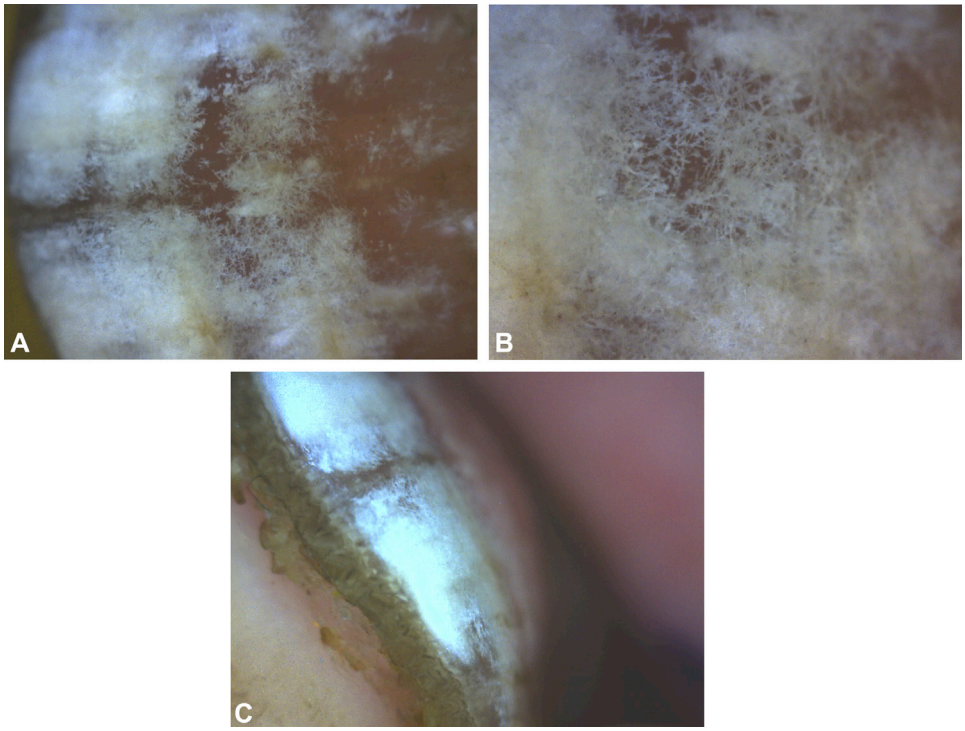

Fig 2. Polarizing dermoscopy (AM413ZT, Dino-Lite, Torrance, CA) of nail showing white cloud-like areas with irregular branching (**A**), extensive branching in a dendritic pattern (**B**), and the distal end of the nail plate showing white areas localized to the nail plate (**C**). (Original magnification: **A** and **C**, ×50; **B**, ×200.)

Dermatophyte species responsible for the endothrix pattern of invasion cause endonyx. Due to a higher affinity for hard keratin, fungal hyphae directly invade the nail plate without involving the nail bed.[1] We propose that the dendritic pattern corresponds to a peculiar pattern of fungal invasion and proliferation in random directions within the nail plate. The white, shiny areas on the distal nail plate edge correspond to focal invasion by fungal elements.

REFERENCES

1. Tosti A, Baran R, Piraccini BM, Fanti PA. "Endonyx" onychomycosis: a new modality of nail invasion by dermatophytes. *Acta Derm Venereol*. 1999;79(1):52-53.
2. Grover C, Jakhar D. Onychoscopy: a practical guide. *Indian J Dermatol Venereol Leprol*. 2017;83:536-549.