Progressive Dystrophy of the Fingernails and Toenails

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A 35-year-old man presented to the dermatology department with gradually progressive dystrophy of the fingernails and toenails of 20 years' duration. The patient reported no history of other dermatologic conditions. Physical examination revealed longitudinal ridging of all 20 nails and discoloration of the nail plates, as well as a few nails showing pterygium and anonychia; the skin and mucosal surfaces were otherwise normal, and nail plate thinning was not observed. A potassium hydroxide mount was negative. A biopsy of the nail matrix on the left thumbnail was performed.

WHAT'S YOUR **DIAGNOSIS?**

a. idiopathic trachyonychia
b. nail lichen planus
c. nail psoriasis
d. onychomycosis
e. onychotillomania

PLEASE TURN TO PAGE 26 FOR THE DIAGNOSIS

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THE **DIAGNOSIS:** Nail Lichen Planus

The biopsy results showed features of hypergranulosis of the matricial epithelium, irregular acanthosis, apoptotic keratinocytes along the basal layer, and a lichenoid infiltrate consistent with nail lichen planus. The patient was started on topical clobetasol propionate 0.05% applied once daily under overnight occlusion. Additionally, intramatricial triamcinolone acetonide (2.5 mg/mL; 0.1 mL per injection) was administered into the affected nail matrix at 4-week intervals for a total of 2 sessions. At the 2-month follow-up visit, the patient reported improvement in longitudinal ridging; however, he subsequently was lost to follow-up.

Nail lichen planus is a chronic inflammatory disorder that occurs in 10% to 15% of patients with lichen planus worldwide and is more common in adults than children.[1] It can manifest independently or concurrently with cutaneous and/or oral mucosal involvement. The fingernails are more commonly affected than the toenails.[2] The clinical features of nail lichen planus can be classified based on involvement of the nail matrix (longitudinal ridging, red lunula, thinning of the nail plate, koilonychia, trachyonychia, pterygium, and anonychia) or nail bed (onycholysis, subungual hyperkeratosis, and splinter hemorrhages).[1]

In our patient, who presented with chronic progressive nail dystrophy affecting all 20 nails, onychomycosis, nail psoriasis, onychotillomania, and idiopathic trachyonychia were included in the differential.[1]

Onychomycosis manifests as white or yellow-brown discoloration of the nail, onycholysis, subungual hyperkeratosis, and thickening of the nail plate. Diagnosis is confirmed by the presence of septate hyphae (dermatophytes) or budding yeast cells (*Candida* species) on a potassium hydroxide mount. Other diagnostic modalities include dermoscopy, fungal culture, and histopathology of nail clippings, with demonstration of fungal elements identified on periodic acid-Schiff staining (eFigure 1).[3]

Nail psoriasis characteristically manifests as deep irregular pitting of the nails. Other features favoring psoriasis include involvement of the nail matrix manifesting as leukonychia, red lunula, and crumbling, as well as involvement of the nail bed manifesting as onycholysis, subungual hyperkeratosis, salmon patches/oil spots, and splinter hemorrhages (eFigure 2).[4] Diagnosis primarily is clinical, supported by histopathology when uncertainty exists.

Onychotillomania is a behavioral disorder characterized by an irresistible urge or impulse in patients to either pick or pull at their fingernails and/or toenails. Clinicopathologic features of the involved nails are nonspecific and atypical, with possible involvement of periungual and digital skin. Diagnosis of onychotillomania is challenging.[5] Dermoscopic features including anonychia with multiple obliquely arranged nail bed hemorrhages, gray pigmentation of the nail bed, and wavy lines, has been proposed to aid the diagnosis of onychotillomania.[6]

Idiopathic trachyonychia is isolated nail involvement characterized by rough, ridged, and thin nails affecting multiple or all of the fingernails and toenails without an underlying systemic or dermatologic condition (eFigure 3). The terms *trachyonychia* and *20-nail dystrophy* have been used interchangeably in the literature; however, trachyonychia does not always involve all 20 nails. Other conditions causing widespread dystrophy of all 20 nails cannot be diagnosed as 20-nail dystrophy or trachyonychia without the distinct morphologic features of thin brittle nails with pronounced longitudinal ridging.[7]

Prompt diagnosis and early intervention in nail lichen planus is crucial due to the potential for irreversible scarring. First-line treatment options include intramatricial and intramuscular triamcinolone acetonide for 3 to 6 months.[4] Second-line therapies include oral retinoids such as acitretin and alitretinoin and immunosuppressive agents such as azathioprine, mycophenolate mofetil, and cyclosporine. Other reported treatment options include clobetasol propionate, tacrolimus, dapsone, griseofulvin, etanercept, hydroxychloroquine, methotrexate, and UV therapy.[4]

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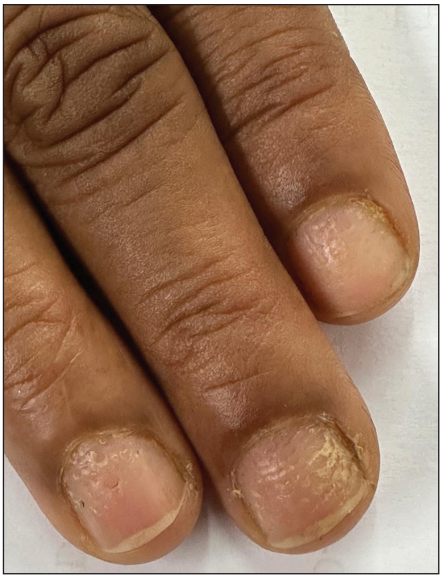
APPENDIX

eFIGURE 1. Onychomycosis. Fingernail showing thickened nail plate with yellow-white discoloration.

eFIGURE 2. Nail psoriasis. Fingernail showing deep irregular pits and distal onycholysis.



eFIGURE 3. Idiopathic trachyonychia. Fingernails showing thin nail plate and longitudinal ridging.