

Pseudoleukonychia of the Distal Fingernails

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An otherwise healthy 36-year-old woman presented to the dermatology department for evaluation of disfiguring nail changes and subungual verrucous skin lesions of 3 weeks' duration. A review of systems and the patient's personal and family history were unremarkable. She denied any recent trauma or chemical exposure but noted that she had regularly been patronizing a beauty salon for gel manicures over the past year; her most recent visit was 6 weeks prior to the current presentation. She previously was treated at another dermatology clinic with local corticosteroid creams without any improvement. Dermatologic examination revealed pseudoleukonychia of the distal fingernails surrounded by an erythematous and/or haemorrhagic border. Overgrowth and adherence of the hyponychium to the nail plate also was noted in almost all the fingernails. A prior complete blood cell count and biochemistry panel were within reference range.



WHAT'S YOUR DIAGNOSIS?

- Lindsay nails
- Muehrcke lines
- onychomycosis
- pseudopsoriatic nails with pterygium inversum unguis
- Terry nails

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THE DIAGNOSIS:

Pseudopsoriatic Nails With Pterygium Inversum Unguis

Based on the clinical findings and the patient's history of gel manicures, a diagnosis of pseudopsoriatic nails with pterygium inversum unguis (PIU) was made. The patient was advised to avoid gel manicures and any other chemical or mechanical trauma to the nails. No other treatment was administered. Improvements including healthy nail growth and disappearing color and structure changes within the nail plates were noted at 2 months' follow-up.

The durability and availability of gel manicures has been increasingly popular due to their ideal cosmetic results. A gel manicure involves applying a gel nail polish (GNP) containing acrylate or methacrylate monomers that harden after exposure to UV light through a photopolymerization reaction. Acrylate polymers including ethylene glycol dimethacrylate, 2-hydroxyethyl acrylate, 2-hydroxyethyl methacrylate, 2-hydroxypropyl methacrylate, methyl methacrylate, and tetrahydrofurfuryl methacrylate are known to cause allergic contact dermatitis in patients who wear acrylate-based GNP.¹ Hydroxyethyl methacrylate is the most common sensitizer among these acrylates. Fingertip dry dermatitis, fissured painful pulpitis of the fingers, and periungual erythema are the most common manifestations of methacrylate allergy; however, there also are reports of onycholysis and onychodystrophy in patients with severe allergic contact dermatitis caused by acrylates.^{2,3}

In contrast to common public misconception that GNP may strengthen the nails, scientific evidence has shown otherwise. Besides allergic contact dermatitis, mechanical damage and UV-induced skin manifestations have been reported in association with GNP.^{1,3,4} Pseudopsoriatic nails are characterized by onycholysis accompanied by subungual hyperkeratosis, closely resembling the nail findings seen in psoriasis. This condition may occur

due to mechanical damage and acrylate sensitization.^{2,4} Pterygium inversum unguis, also known as ventral pterygium, occurs as a result of hyponychium trauma due to either application or removal processes of GNP and/or exposure to chemical ingredients and is one of the most striking clinical manifestations of GNP use.⁵ In our patient, all fingernails were affected by PIU.

Patients presenting with pseudopsoriatic nail changes and/or PIU should be questioned about potential exposure to GNP and/or sculpted nails, also known as custom artificial nails or nail prostheses. Diagnosis primarily is made clinically, but microbial cultures or skin biopsy may be required to exclude psoriasis and fungal infections in some patients. Patch testing with acrylate series in particular also is necessary in patients presenting with hand dermatitis. As it is the most common contact sensitizer in the acrylic material of the GNPs, screening for 2-hydroxyethyl methacrylate allergy is recommended in these patients.¹ Almost all adverse effects related to use of GNP may be reversible upon discontinuation of exposure.

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