

# Bilateral thumbnail deformity

Was there a connection between the patient's nail deformity and his new job as a military intelligence officer?

**D**uring my recent deployment to Afghanistan, a 31-year-old man came into our aid station with a bilateral thumbnail deformity that he'd had for several weeks. He was concerned about a thumbnail infection and wanted to discuss antifungal treatment. His history was unremarkable, and he said he had no nail fold infections or other skin conditions. He was taking doxycycline for malaria prophylaxis. He also mentioned that he had recently started working as a military intelligence officer, putting in 18-hour days.

His exam revealed sharp, closely spaced horizontal grooves on both of his thumbnails (**FIGURE**). His nails had no hyperkeratotic debris or pitting. His nail folds appeared hypopigmented with scaling, but they were nontender to palpation. His other fingernails were normal in appearance. The remainder of the skin exam was unremarkable.

- **What is your diagnosis?**
- **How would you manage this condition?**

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**FIGURE**

**Horizontal grooves on both thumbnails**



PHOTO BY EDWIN A. FARNELL IV, MD

The patient had sharp, closely spaced horizontal grooves on both of his thumbnails. There was no hyperkeratotic debris or pitting.

**FAST TRACK**

**The 31-year-old had just started working as a military intelligence officer, putting in 18-hour days**

**FAST TRACK**

**The simplest treatment approach is to have the patient tape the proximal portion of the affected nails during the day when he picks at them**

### ■ **Diagnosis: Habit-tic deformity**

Habit-tic deformity is a common nail condition caused by a conscious or unconscious rubbing or picking of the proximal nail folds. Horizontal grooves are formed proximally due to nail matrix damage and subsequently move distally with fingernail growth. The dominant thumbnail is most often affected by frequent rubbing with the ipsilateral index fingernail, although all nails can be involved.

This deformity is more common during periods of stress—which my patient was experiencing in his new role as an intelligence officer—and is believed to result from a compulsive or impulse control disorder.

### ■ **Differential diagnosis includes onychomycosis**

The differential diagnosis of external nail deformation includes median nail dystrophy, chronic proximal nail fold inflammation, onychomycosis, psoriasis, Beau's lines, and habit-tic-like dystrophy.

**Median nail dystrophy.** This nail deformity has a distinctive longitudinal split in the center of the nail plate with several cracks projecting laterally, resembling a fir tree. The etiology of this disorder is unknown, although some have suggested that habit-tic deformity and median nail dystrophy are different manifestations of the same disorder.<sup>1</sup>

**Chronic proximal nail fold inflammation.** Chronic paronychia is an inflammation of the proximal nail fold, and is one of 2 forms of inflammation included in the differential. It is characterized by tenderness and swelling around the proximal and lateral nail folds, most often due to contact irritant exposure. The cuticle separates from the nail plate, which creates a space for infection. The nail plate surface subsequently becomes brown and develops ripples that can mimic the habit-tic deformity. Chronic eczematous inflammation is the second form of inflammation in the differential and can

produce results that are similar to chronic paronychia. Both forms of proximal nail fold inflammation tend to resemble rounded waves, as opposed to the narrow, closely spaced grooves seen in habit-tic deformity.

**Onychomycosis.** Habit-tic deformity is often confused with onychomycosis, though the 2 can be easily distinguished upon close inspection. Unlike habit-tic deformity, onychomycosis classically has nail thickening and hyperkeratotic debris. Diagnosis can be solidified by a potassium hydroxide examination and culture.

**Psoriasis.** Psoriatic nail lesions can occur in the absence of classic skin findings. Nail pitting is the hallmark nail finding in psoriasis. Other findings such as onycholysis (separation of the nail from the nail bed), nail fragmentation and crumbling, and splinter hemorrhages can distinguish psoriatic nails from habit-tic deformity.

**Beau's lines.** This disorder is characterized by horizontal depressions in most or all of the nails. These depressions occur at the proximal portion of the nail weeks after trauma, medication use, or illness interrupts nail formation. Chemotherapeutic agents, systemic illnesses such as syphilis, myocarditis, peripheral vascular disease, and uncontrolled diabetes, as well as illnesses associated with high fevers, such as scarlet fever, hand-foot-mouth disease, and pneumonia, have all been linked to Beau's lines.<sup>2</sup>

The lines (usually one per nail) eventually move distally to the nail's free edge. The nail on either side of the depression is normal in appearance.

**Habit-tic-like dystrophy.** Nail deformities that closely resemble habit-tic deformity on exam have been reported in patients who explicitly deny trauma. One report in the literature indicates that 2 patients who denied trauma—one with systemic lupus erythematosus and another with no significant past medical history—responded to treatment with a multivitamin rich in biotin, vitamins B<sub>6</sub>, C, and E, and riboflavin.<sup>3</sup> Another report describes

habit-tic-like deformity that occurred in patients who were taking aromatic retinoids. The disorder resolved when the patients stopped taking the medication.<sup>1</sup>

### ■ Low-tech approach to treatment

The simplest approach to cosmetic improvement is to have the patient tape the proximal portion of the affected nails during the day when he or she picks at and rubs them. The tape acts as a barrier to the repetitive trauma and also serves as a reminder to the patient. The patient can expect improvement in several weeks if the tape is applied consistently. In addition, selective serotonin reuptake inhibitors (SSRIs) may play a role in treatment, because habit-tic deformity is believed to be a compulsive disorder.<sup>4</sup>

My patient tried the taping method for 2 months and had moderate improvement of his nail deformity. He was not, however, completely satisfied with the results, so we discussed vitamin supplementation as an additional therapy. His tour ended shortly thereafter, and he was lost to follow-up. ■

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#### Disclosure

The author reported no potential conflict of interest relevant to this article. The opinions or assertions contained herein are the private views of the author and are not to be construed as official or as reflecting the views of the Department of Defense.

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