

Case 9



## Discoloration on the Toenails

A 51-year-old man presents with yellowish discoloration and thickening of the toenails on both feet of several years duration.

### Questions

1. What is the diagnosis?
2. What is the significance?
3. What is the treatment?

### Answers

1. The diagnosis is onychomycosis.
2. Onychomycosis is an infection of the nail plate by fungi (dermatophytes, yeasts, and molds). In general, toenails are affected much more frequently than fingernails. Typically, onychomycosis presents as white-yellow-brown discoloration of the nail, subungual hyperkeratosis, and onycholysis. Dermatophytes such as *Trichophyton rubrum* and *Trichophyton mentagrophytes* account for 80-90% of all cases.
3. Treatment options include oral antifungal therapy (e.g., usually terbinafine, less commonly itraconazole), topical therapy (e.g., efinaconazole, ciclopirox), chemical avulsion with topical 40% urea or surgical avulsion of nail (e.g., one very thick fungal nail), laser therapy, and photodynamic therapy. Oral and topical antifungal drugs are the mainstay of treatment. While topical treatment has negligible significant adverse effects, topical therapy requires longer treatment courses and may be less effective than oral treatment. In general, topical monotherapy is recommended when less than 60% of the nail is affected without matrix involvement and only a few digits are infected or when the patient is unable to use an oral antifungal agent.<sup>2</sup> Oral monotherapy or combination therapy is recommended when more than 60% of the nail is affected or multiple nails are involved or if the nail matrix is involved.<sup>2</sup> Combination therapy can be used sequentially or in parallel. The treatment regimen should be tailored to the individual patient. Repeated treatment courses may be required, especially for chronic onychomycosis.

#### References

1. Hoy NY, Leung AK, Metelitsa AI, et al: New Concepts in Median Nail Dystrophy, Onychomycosis, and Hand, Foot, and Mouth Disease Nail Pathology. *ISRN Dermatology*. 2012; 2012:68163.
2. Gupta AK, Paquet M: Management of Onychomycosis in Canada in 2014. *J Cutan Med Surg*. 2015;19:260-273.

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