Clinical and Educational Gaps in Diagnosis of Nail Disorders

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KEYWORDS

• Nail surgery • Nail biopsy • Nail disorders • Nail dystrophy

KEY POINTS

- Improving resident exposure to diverse nail disease processes and diagnostic procedures will initially require creativity to increase experience with limited exposure.
- The main hurdle to overcome in increasing resident exposure to nail pathology/procedure is simply the current low volume seen in some residencies.
- Although the capacity and desire of residencies to handle nail procedures increases over time, other modes of experience may aid in building confidence among residents.

PRACTICE AND EDUCATIONAL GAPS IN DISORDERS OF THE NAILS IN DERMATOLOGY

Introduction

Dermatologists are experts in the care of skin, hair and nails, yet many dermatologists find nails challenging and even frustrating. Nail disorders are sometimes considered trivial, and nail procedures can be labor intensive and poorly reimbursed compared with many other skin procedures. Well-recognized disease processes on the skin may seem clinically different when involving the nail unit; nail biopsies are more involved and take longer than skin biopsies, and the slow growth of nails results in a longer wait to evaluate the treatment effect than on the skin. Furthermore, our collective knowledge of the basic science of structure, function, and pathophysiology of the nail unit lags behind that of the hair follicle, adnexal structures, and skin. Research in nails is a growing field with new interest in nail matrix stem cell potential. However, clinical and surgical nail experience in resident education continues to lag, resulting in limited nail differential diagnoses in clinical practice, potential for missed or misdiagnosed nail disease, and lack of confidence in performing nail biopsies.

PRACTICE GAPS IN CLINICAL DERMATOLOGY: DIAGNOSIS OF NAIL PATHOLOGY

Best Practice

1. Dermatologists are able to diagnose the full spectrum of nail diseases, including infectious, neoplastic, congenital, inflammatory, traumatic, and those associated with systemic disease in a timely manner.
2. Dermatologists are confident in performing diagnostic nail surgical procedures; they know when, where, why, and how to perform a nail biopsy.

Current Clinical Practice

Current clinical practice gaps in diagnosing nail problems stem from a lack of appreciation of the

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broad range of nail diagnoses as well as a lack of knowledge of clinical and procedural techniques for diagnosis of nail disease processes, leading to discomfort surrounding diagnosis and management of complex nail disorders. Although 50% of nail conditions seen in a general medical dermatology office are fungal, the other 50% are something other than fungal, including neoplastic, inflammatory, congenital, traumatic, or related to systemic disease.[1] Because some of these nonfungal conditions resemble onychomycosis clinically, they may be consequently initially misdiagnosed and even treated, exposing patients to unnecessary systemic antifungal drugs and possibly delaying important diagnosis. Further delay ensues when patients are referred outside our specialty for fingernail or toenail procedures, which are not infrequent occurrences in busy clinics when dermatologists are either not interested or not confident in treating nail disorders and performing nail biopsies.

The knowledge and attitude gap: delay in diagnosis of nail conditions

Lack of appreciation of the number and wide variety of nail disorders leads to an early limited differential and sometimes dismissal, when instead the initial differential should be broad and properly explored. This clinical practice gap spans both attitude toward and knowledge of nail physiology and the breadth of nail disease processes. For example, there is overall a lack of knowledge of the proper differential diagnosis and workup of nail dyschromia. Longitudinal melanonychia and longitudinal erythronychia can be the result of a benign or malignant process. Subungual melanomas and squamous cell carcinoma of the nail unit may present subtly with only onycholysis or longitudinal dyschromia and, consequently, are often unrecognized early (**Figs. 1** and **2**). Malignant tumors of the nail, although uncommon, are often advanced when diagnosed because the early signs were not recognized and the nail was not biopsied in a timely manner.[2–4] The consideration, workup, and treatment of these less-common but high-stakes conditions are crucial elements of good patient care in dermatology.

Narrowing the Gap

Current gaps in clinical nail diseaes diagnosis can be significantly narrowed with a 2-pronged approach to address both knowledge and attitude. Clinical diagnosis, including maintaining a broad early differential and appropriately considering harmful disease processes would improve with a standardized approach to nail disease diagnosis. Algorithms that use clinical signs and symptoms of an abnormal nail to arrive at the correct diagnosis for a wide range of nail disorders could significantly improve the aforementioned practice gaps. An algorithmic approach to nail diagnosis should strictly adhere to the core principles of confirming the presence of organisms before diagnosing onychomycosis and encourage diligent consideration of other possible diagnoses until the organism is definitively noted. Algorithms that use examination and history of nail disease signs and symptoms to assist with diagnosis and clinical decision-making are currently lacking. Gaps in attitude regarding the importance of nail conditions could be addressed by increased didactic nail sessions at the American Academy of Dermatology and other regional meetings as well as further assessment of nail burden of disease, using

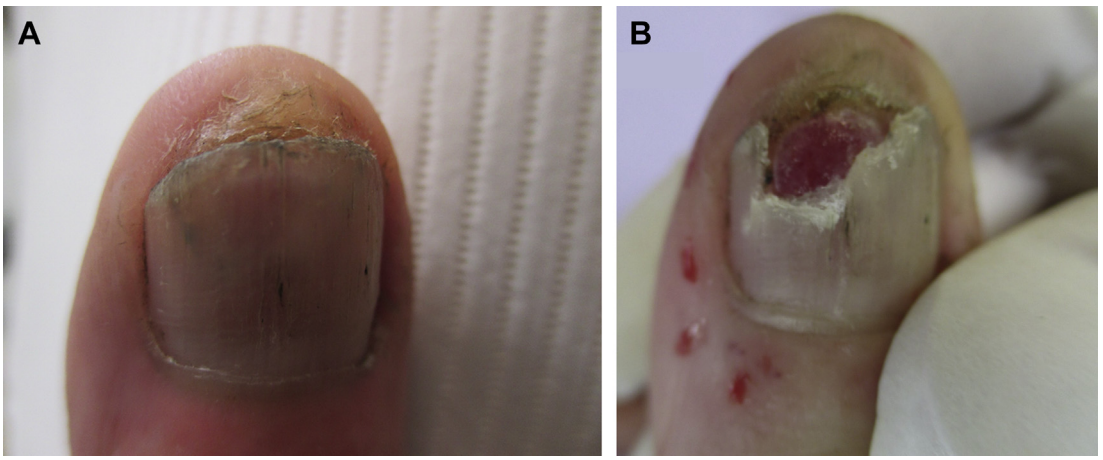

Fig. 1. Amelanotic melanoma of the nail bed presenting as onycholysis and treated as an infection for 2 years before nail biopsy.