

## Are We Giving Nails Away?

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**D**ermatology encompasses disorders of the skin, hair, and nails. Why is it that many dermatologists shy away from nail disorders, particularly nail surgery? Many dermatologists choose not to see patients with nail disorders and instead send them to other specialists such as podiatrists, primary care physicians, and hand surgeons. Dermatologists should be the keepers of the nails because our specialty knows and understands cutaneous epithelial biology and pathology better than any other specialty. What drives our reticence to perform nail surgery? There may be apprehension of inflicting pain during the procedure; causing permanent nail dystrophy; not biopsying the correct locations and missing the pathology and diagnosis; or simply not wanting to perform a messy, time consuming procedure for low reimbursement. A little care and coaching is all it takes to illustrate how a nail surgery can be rewarding and is well within the dermatologist's domain. Better yet, become the nail specialist in your community so your dermatology colleagues can send their nail cases to you!

Successful nail surgery requires 3 key components: (1) perfect anesthesia; (2) a firm grasp of the anatomy and biology of the nail unit to biopsy the correct location of the pathologic process; and (3) simple proper surgical technique.<sup>1</sup>

Good anesthesia is crucial for patient acceptance of the nail procedure. One should always strive for a completely pain-free procedure. A wing (paronychia) block has several advantages over the traditional digital ring block at the base of the digit, including less pain on injection, less volume needed, less risk for intravascular injection, and less wait time for onset of action (Figure 1). Additional measures for a more comfortable injection involve using a 30-gauge needle, buffered lidocaine injected slowly, and vibration and/or cold spray at the time of injection. Subsequent injection with a long-acting anesthesia such as bupivacaine hydrochloride provides long-lasting pain relief up to 8 hours. Most nail

surgeons agree that it is safe to use lidocaine with epinephrine in nail surgery.

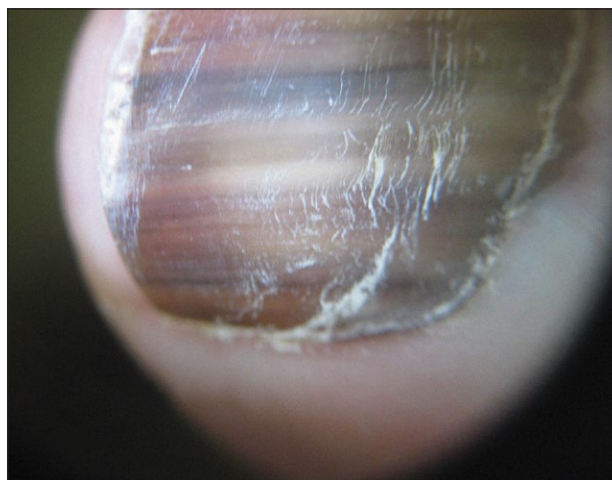
A firm grasp of the anatomy and growth kinetics of the nail unit assure that the biopsy is taken from the proper location, which is essential for a favorable outcome and correct diagnosis. Melanin in the nail plate originates in the nail matrix; as a result, the biopsy must be performed in the nail matrix. Although there are many benign causes of nail pigmentation, any unexplained pigmented band in a white patient needs a histopathologic diagnosis. Dermoscopy of nail pigmentation looking for irregular lines and end on examination of the free edge of the nail plate can further pinpoint the location of melanocytes that need to be sampled (Figure 2).<sup>2,3</sup> If the pigment is in the ventral aspect of the nail plate, the pigment-producing cells will be located in the distal matrix. If the nail pigment is primarily on the superficial or top layers of the nail plate, melanocytes will be located in the proximal matrix (Figure 3).<sup>4</sup>

Once the location of the pathology in the nail unit is determined, there are several methods to obtain the specimen. These techniques depend on the type of lesion and location in the nail plate. If the origin of a narrow longitudinal pigmented band can be seen in the distal matrix, a simple punch biopsy around the origin of the band is adequate to fully remove the lesion and produce a good specimen. It is always preferable to remove the entire pigmented band rather than just sampling it because there is less likelihood of regrowth of the band, which usually results in a confusing clinical picture. More often it is difficult to tell precisely where the pigmented band originates, so a full or partial avulsion is performed to visualize the entire nail matrix, which may require reflection of the nail fold to get a full view of the proximal origin of the band in the matrix.<sup>5</sup> How does one remove a wide longitudinal band? A tangential partial-thickness excision allows a broad specimen to be obtained with less discomfort, quicker healing, and far less risk for dystrophy than a full-thickness matrix biopsy, even with repair.<sup>6</sup> Inflammatory nail conditions such as psoriasis and lichen planus manifest nail plate changes, such as pitting or onychorrhexis, which may require a nail matrix biopsy for diagnostic confirmation (Figure 4).

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The author reports no conflict of interest.



**Figure 1.** Injection of lidocaine with wing block.



**Figure 2.** Dermoscopy of nail melanoma.



**Figure 3.** Nail matrix melanoma in situ prior to matrix biopsy.



**Figure 4.** Tangential shave excision of matrix in nail melanoma in situ after proximal partial nail avulsion.

Nail bed and nail fold biopsies are easy to perform and have little risk involved. Nail bed tumors are removed after partial or full nail avulsion. The nail plate often is lifted rather than fully avulsed, and after the specimen is removed, the plate is repositioned to provide protection as a biologic dressing while the wound heals. The nail fold can be biopsied with a punch or shave technique, and the nail fold heals well by secondary intention.

Medical and surgical management of nail disorders can be rewarding and we should all hone our skills in nail surgery to assure that dermatologists will continue to be the keepers of the nails as well as the hair, skin, and mucous membranes.

## REFERENCES

1. Rich P. Nail biopsy: indications and methods. *Dermatol Surg.* 2001;27:229-234.
2. Hirata SH, Yamada S, Almeida FA, et al. Dermoscopy of the nail bed and matrix to assess melanonychia striata. *J Am Acad Dermatol.* 2005;53:884-886.
3. Braun RP, Baran R, Le Gal FA, et al. Diagnosis and management of nail pigmentations. *J Am Acad Dermatol.* 2007;56:835-847.
4. Braun RP, Baran R, Saurat JH, et al. Surgical pearl: dermoscopy of the free edge of the nail to determine the level of nail plate pigmentation and the location of its probable origin in the proximal or distal nail matrix. *J Am Acad Dermatol.* 2006;55:512-513.
5. Krull EA. Biopsy techniques. In: Krull EA, Zook EG, Baran R, et al, eds. *Nail Surgery: A Text and Atlas.* Philadelphia, PA: Lippincott Williams & Wilkins; 2001: 55-88.
6. Jellinek N. Nail matrix biopsy of longitudinal melanonychia: diagnostic algorithm including the matrix shave biopsy. *J Am Acad Dermatol.* 2007;56:803-810.