

How We Do It: Narrow Hole Extrusion Technique for Lipoma Removal

Daniel P. Friedmann^{1*}, Kritin K. Verma² and Vineet Mishra^{3,4}¹Westlake Dermatology Clinical Research Center, Westlake Dermatology & Cosmetic Surgery, Austin, TX²Texas Tech University Health Sciences Center School of Medicine, Lubbock, Texas³Ajunct Associate Professor of Dermatology, The University of California, San Diego⁴Restoration Dermatology, Nashville, TN***Corresponding Author**

Daniel P. Friedmann, Westlake Dermatology Clinical Research Center, Westlake Dermatology & Cosmetic Surgery, Austin, TX.

Submitted: 2023, Jun 01; **Accepted:** 2023, July 05; **Published:** 2023, July 24**Citation:** Friedmann, D. P., Verma, K. K., Mishra, V. (2023). How We Do It: Narrow Hole Extrusion Technique for Lipoma Removal. *Dearma J Cosmetic Laser Therapy*, 2(3), 25-27.**Abstract**

Subcutaneous lipomas are benign, slow-growing tumors of adipose tissue. The goal of removal is to achieve complete extirpation with optimal cosmesis. Given the inherent features of these subcutaneous lesions, complete extirpation can consistently be achieved through very small incisions, a technique known as narrow hole extrusion technique.

Keywords: Subcutaneous Lipoma, Encapsulated Lipoma, Extra-Fascial**1. Introduction**

Lipomas are acquired, slow-growing, asymptomatic benign tumors of subcutaneous adipose tissue that are often fibroencapsulated. Complete excision has been the gold standard, although adipolytic agents such as sodium deoxycholate may be a viable treatment option for deep (subfascial or subgaleal) lipomas or in patients who refuse or are not candidates for a surgical procedure. While many providers still excise lipomas in toto by means of large incisions that result in unsightly scars, simple subcutaneous (extra-fascial) lipomas can be completely removed with narrow hole extrusion technique (NHET) through a 3-5 mm incision with enhanced safety, minimal downtime, and vastly superior cosmesis [1].

2. Methods

The lipoma is identified by visual inspection and palpation, and the borders of the round subcutaneous nodule are first demarcated with a surgical marking pen. A ring block of 1% lidocaine with epinephrine (1:100,000) outside the boundaries of the lesion achieves complete subcutaneous local anesthesia with minimal perturbation of the tumor (Figure 1A). The skin overlying the lesion is subsequently anesthetized by a relatively small intradermal injection of local anesthetic solution.



Figure 1: (A) Complete anesthesia is achieved with a ring block using 1% lidocaine with epinephrine (1:100,000) injected along the periphery of the lesion. This is combined with intradermal injections of local anesthetic solution into the skin immediately overlying the center of the lesion (not shown). (B) A 4-5 mm punch biopsy instrument is used to create a round incision. (C) Following blunt dissection, the area is grabbed and lifted up, allowing for bimanual pressure to be exerted circumferentially around and beneath the lesion. (D) If adhered to the underlying fascia, the exposed fibrous capsule can then be excised with toothed forceps and scissors.

A 3 mm punch biopsy instrument is often sufficient (Figure 1B), although large lipomas (>5 cm) may benefit from as large as a 5 mm incision. Dissection of tissue surrounding a lipoma and penetration of the capsule is then achieved with blunt scissors or a blunt-tipped probe. The authors prefer a double-ended 5.5-inch round-tipped reusable probe (Integra Miltex, Plainsboro, NJ; Product #10-6-ST), as shown in Figure 2, although a similar

6-inch Arbuckle sinus probe (Becton Dickinson, Franklin Lakes, NJ; V. Mueller Catalog Product #RH300) has also been recommended. Bimanual pressure is subsequently performed (Figure 1C), which for unencapsulated or small superficial encapsulated lipomas is sufficient to produce complete extirpation with little effort [2]. It is important to emphasize that the more extensive the subcision, the easier it will be to remove the tumor contents.



Figure 2: Double-ended 5.5-inch round-tipped reusable probe for subcision/dissection of tissue surrounding a lipoma and capsule penetration prior to extirpation.

Large encapsulated lipomas or lipomas adherent to underlying fascia, however, may require direct incision of their typically thick fibrous capsule with scissors or the punch biopsy instrument. Once all of the fatty intracapsular content is evacuated piecemeal with bimanual compression, the fibrous capsule can be easily excised with toothed forceps and scissors (Figure 1D). Patience and persistence may be required for these larger lesions in areas of thickened (e.g., truncal) skin. Once the tumor has been completely removed, a 4-0 or 5-0 synthetic, monofilament, nonabsorbable polypropylene suture is used for epidermal closure in an interrupted fashion. Absorbable dermal sutures for deadspace closure are typically not required, although this may be necessary for very large or longstanding lipomas. The resected specimen is placed in formalin and sent for histopathologic confirmation. Figure 1a-d demonstrates the removal of a 7.5 cm deep subcutaneous lipoma of the right upper back that was

excised through a 4-mm punch instrument incision using this technique.

3. Discussion

First reported in 1982, NHET allows for complete removal of relatively large extra-fascial subcutaneous lipomas through small incisions created by a punch biopsy instrument. The authors have found that this is an ideal treatment for small to moderately sized subcutaneous asymptomatic lipomas of the face, neck, and extremities, although lipomas in areas of thicker skin can also be successfully removed, as seen in our patient, albeit with greater provider effort [3]. The minimal downtime and enhanced cosmetic outcome afforded by a small incision makes this a vastly more appealing treatment option than traditional excision. A modified form of NHET, where the punched-out tissue is grafted back into the defect, may be worthwhile for cosmeti-

cally sensitive sites such as the face [4].

4. Conclusion

Narrow hole extrusion technique is able to effectively remove relatively large extra-fascial subcutaneous lipomas, obviating the need for larger incisions and enhancing safety and cosmesis.

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