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Surgical Pearl: Tumescent anesthesia reduces pain of axillary laser hair removal

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BACKGROUND

We describe the use of tumescent anesthesia before laser hair removal in the axilla to improve patient comfort during treatment. Our modified tumescent technique provides more extensive anesthesia than standard intradermal injections of local anesthetic agents and is less painful to administer. Compared with topical anesthetic creams, tumescent anesthesia has a quicker onset and delivers more complete anesthesia.

Hair removal by laser or intense pulsed light sources is a painful procedure, especially in sensitive areas such as the beard, axilla, and groin. Recent trends in laser hair removal (longer pulse durations and wavelengths) offer better treatment of dark skin,¹ but are even more painful. Topical anesthetic creams are commonly used to decrease discomfort, but are slow to act and can be messy.² We have found that axillary injection of tumescent anesthesia is extremely effective for reducing the discomfort of laser hair removal. In addition, the pain of injection into the subcutaneous fat is minimal (compared with the dermis) and, therefore, well tolerated by patients. The technique is quick, safe, and cost-effective, making it an important tool in our practice for a wide variety of procedures, including laser hair removal.

TECHNIQUE

We inject a solution consisting of one part 1% lidocaine with epinephrine 1:100,000 (Xylocaine) and 2 to 3 parts preserved saline. Typically, 3 mL of



Fig 1. Injection of tumescent anesthesia into axilla.

1% lidocaine with epinephrine is mixed with 9 mL of preserved saline in a 12-mL syringe (final concentration: 0.25% lidocaine with epinephrine 1:400,000). As the materials used (12-mL syringe, needles for injection, 1% lidocaine with epinephrine, injectable saline) are found in most offices, the cost is minimal. The final solution is more concentrated than most tumescent anesthesia used for liposuction (usually 1 50-mL bottle of 1% or 2% lidocaine in 1000 mL of saline, with 12.5 mL of 8.4% sodium bicarbonate and 1 ampule of epinephrine).³ Because only 6 to 9 mL of solution is required per axilla (divided into 2-3 injection sites), we believe the higher concentration is safe and more effective. There is virtually no injection pain (because of injection into subcutaneous fat and the dilution of the anesthetic), eliminating the need to add sodium bicarbonate. The anesthetic solution is injected at a 30- to 45-degree angle directly into the subcutaneous fat (Fig 1). The patient is then instructed to gently massage the axilla for 1 to 2

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Funding sources: None.

Conflicts of interest: None identified.

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J Am Acad Dermatol 2004;51:290-1.

0190-9622/\$30.00

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doi:10.1016/j.jaad.2003.11.081

minutes to assist dispersion of the solution into the tissue. Deeper massage increases the likelihood of numbness extending outside the intended treatment zone, most commonly down the posterior aspect of the arm. Laser hair removal can begin almost immediately. We use an 800-nm long pulsed diode laser (Lightsheer, Lumenis, New York, NY).

We have successfully treated approximately 30 patients with this technique. These patients all had experience with topical anesthetic creams with previous laser hair removal. All 30 patients responded favorably to the tumescent technique and reported it as their preferred method. We believe it to be a safe and highly effective method for pain reduction with

axillary laser hair removal that is also more convenient to the patient and physician. In addition, it may be a practical alternative for decreasing the discomfort associated with other laser or surgical procedures in moderately sized areas that are difficult to cover with topical anesthesia.

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