

Intradermal Infiltration of Local Anesthetic—Rapid and Bloodless Deepithelialization of the Breast Pedicle

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Summary: Breast reduction is one of the most commonly performed plastic surgery procedures, and pedicle deepithelialization remains a time-consuming step of the operation. This is especially true when using an inferior pedicle. We present a novel technique of intradermal infiltration of the breast pedicle with local anesthetic to facilitate efficient, bloodless deepithelialization. The senior author uses a 20-ml syringe to inject 0.25% lidocaine and 1:400,000 epinephrine just beneath the epidermis of the breast pedicle to create a series of wheals. Approximately 20 ml of local anesthetic is used per pedicle. After injection of local anesthetic, the breast pedicle is deepithelialized in less than 3 minutes. The plane is bloodless, allowing improved visualization secondary to the epinephrine-induced hemostasis. The senior author has had only one case of nipple necrosis in 20 years of experience. Intradermal infiltration of local anesthetic with epinephrine hydrodissects between the epidermis and dermis and provides hemostasis to facilitate rapid deepithelialization. (*Plast Reconstr Surg Glob Open* 2017;5:e1225; doi: 10.1097/GOX.0000000000001225; Published online 21 February 2017.)

Breast reduction is one of the most commonly performed operations by plastic surgeons, and the inferior pedicle is the most commonly used technique.¹ Deepithelialization of the large, inferiorly based pedicle remains the most tedious step of the operation for many plastic surgeons.² Some authors have suggested using dermatomes,³ lasers,⁴ electrocautery,⁵ and parenchymal tumescence⁶ to improve efficiency, whereas some have abandoned deepithelialization altogether in favor of de-skinning.² We present a novel method of rapid, bloodless deepithelialization using diffuse intradermal infiltration of local anesthetic.

MATERIALS AND METHODS

The patient is marked preoperatively. Once in the operating room, the midpoint of the planned inframammary incision is marked, and 2 additional points are marked—one 5 to 6 cm medially and another 5 to 6 cm laterally to represent an inferior pedicle base of 10 to

12 cm. A gently curved line is then drawn in a cephalad direction from the base of the pedicle laterally, around the areola, and back down to the base of the pedicle medially. A mixture of 0.25% lidocaine and 1:400,000 epinephrine is then drawn into a 20-ml syringe and injected intradermally within the pedicle markings using a 20-gauge spinal needle, sparing the nipple–areola complex (NAC). This is done in such a way as to create continuous wheals just beneath the epidermis. (See video, **Supplemental Digital Content 1**, which displays intradermal infiltration of local anesthetic, creating continuous wheals on the breast pedicle. This video is available in the “Related Videos” section of the Full-Text article on PRSGlobalOpen.com or available at <http://links.lww.com/PRSGO/A372>.) Approximately 20 ml is used per pedicle. Once the entire area within the pedicle markings has been infiltrated, the breast parenchyma is then infiltrated with 80 ml of the same local anesthetic at a depth that approximates the anticipated thickness of the flaps (100 ml total per breast). Tourniquets are then applied to both breasts, the areola and pedicle incisions are made, and the pedicle is deepithelialized. This is done using a #10 blade with a swift, slicing motion, almost parallel to the pedicle’s skin surface. (See video, **Supple-**

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Video Graphic 1. See video, Supplemental Digital Content 1, which displays intradermal infiltration of local anesthetic, creating continuous wheals on the breast pedicle. This video is available in the “Related Videos” section of the Full-Text article on PRSGlobalOpen.com or available at <http://links.lww.com/PRSGO/A372>.



Video Graphic 2. See video, Supplemental Digital Content 2, which displays bloodless deepithelialization of the breast pedicle using a swift, slicing motion parallel to the dermis. This video is available in the “Related Videos” section of the Full-Text article on PRSGlobalOpen.com or available at <http://links.lww.com/PRSGO/A373>.

mental Digital Content 2, which displays bloodless deepithelialization of the breast pedicle using a swift, slicing motion parallel to the dermis. This video is available in the “Related Videos” section of the Full-Text article on PRSGlobalOpen.com or available at <http://links.lww.com/PRSGO/A373>.) Deepithelialization is rapid, secondary to epinephrine-induced hemostasis, tumescence from intradermal infiltration, and the breast tourniquet. Pedicle injections usually take approximately 30 seconds, and deepithelialization is completed by the senior author in less than 3 minutes.

DISCUSSION

Intradermal infiltration of local anesthetic improves both efficiency and visualization during pedicle deepithelialization. It allows the surgeon to choose the conservative yet faster method of deepithelialization, instead of opting for deskinning. Deskinning may negatively affect subdermal blood supply to the NAC,⁷ and it is suggested that leaving a stable layer of dermis adds strength to the

pedicle structure. Although there has been no observed increase in wound complications using electrocautery instead of a scalpel,^{8,9} there is ongoing concern for increased tissue damage with electrocautery that could certainly affect blood supply to the NAC and the strength of final closure.⁸ Traditional deepithelialization with a scalpel offers the surgeon greater control than with a dermatome and is also less costly to the health-care system than a laser.¹⁰

Traditional methods using a scalpel or scissors without intradermal infiltration can take between 6 and 8 minutes, and although the senior author is an experienced surgeon, these methods can result in more bleeding and less accuracy in level of dissection, often resulting in either residual epidermis or full-thickness skin removal. The senior author has found this to be especially true when working with residents. Interestingly, the topography of the wheals does not cause fluctuations in the level of dissection, as the wheals quickly coalesce after injection.

The senior author has been using this technique for over 20 years on approximately 600 patients, with ages ranging between 17 and 72 years old. The author has had 1 case of nipple loss, which is suspected to be from an overly tight postoperative dressing. There has been no evidence of NAC compromise secondary to intradermal infiltration.

In conclusion, intradermal infiltration of the pedicle using local anesthetic is a safe, cost-effective method that allows for efficient deepithelialization without compromising closure or blood supply to the NAC. Improved visualization is especially helpful in academic institutions where residents may be performing the operation on their respective side without assistance. Further studies should be done to quantify the total time of intradermal infiltration and deepithelialization compared with the time of deepithelialization without intradermal infiltration, for both attendings and residents.

CONCLUSIONS

Deepithelialization may be accomplished by several different means, but infiltrating the dermis with local anesthetic both improves hemostasis and allows for hydrodissection between the epidermis and dermis. Once local anesthetic is injected, deepithelialization proceeds rapidly using a traditional scalpel.

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