

A Step-by-Step Superomedial Reduction Mammoplasty for Macromastia and Severe Ptosis: A Video Technique

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INTRODUCTION

Symptomatic macromastia is a common condition that occurs when the development of excessive breast tissue results in debilitating physical and psychological symptoms. Although reduction mammoplasty has proven to be an effective treatment, patients with macromastia and severe ptosis, defined as resection weight of at least 1500 g per breast and sternal notch-to-nipple distances greater than 40 cm, continue to be a surgical challenge.¹

Historically, reduction mammoplasty techniques offered to macromastia patients with severe ptosis have involved either breast amputation with free nipple grafting or reduction using an inferior pedicle (IP), although superomedial pedicle (SMP) techniques were considered riskier due to concern for compromised nipple-areolar complex (NAC) perfusion.² However, over the last 2 decades, literature on the SMP technique has described similar complication rates while offering superior aesthetic outcomes compared with IP and free nipple grafting techniques.²⁻⁵ Here, we describe a reliable and reproducible technique for the SMP for reduction mammoplasty in the setting of macromastia and severe ptosis.

SURGICAL TECHNIQUE

Standardized landmarks including sternal notch, inframammary fold (IMF), and chest midline are identified. (See Video 1 [online], which displays preoperative markings for Wise pattern SMP reduction mammoplasty in a patient with severe ptosis.)

The breast meridian is visually approximated and marked at the clavicle level of 1 breast. The distance between the sternal notch and the breast meridian is

measured and replicated on the opposite breast; this distance is typically between 5 and 7 cm. Ensuring equal distance between the vertical limb and the midsternal line on each side is crucial for achieving symmetrical and balanced results. The new nipple position is then marked 1–2 cm below the Pitanguy point along the breast meridian, which is the point on the breast that is translocated from the existing IMF. From the new nipple position, the Wise pattern limbs of divergence are measured 8.5 cm in length and marked at a 60-degree angle using a goniometer. For standard breast reduction patients who do not have severe ptosis or gigantomastia, 8-cm limbs and a 65-degree angle are used. The position of the new IMF is drawn 0.5 cm above the existing IMF and extended laterally along the chest wall before terminating at the posterior axillary line and is curved superiorly to reduce dog-ear formation and avoid a “boxy” final breast shape. The horizontal limbs of the Wise pattern are completed by connecting the inferior aspects of the limbs of divergence and gently curving to converge medially and laterally with the new IMF. The new NAC is marked as an oval around the new desired nipple position. To avoid distortion, the designed mosque of the Wise pattern has a horizontal diameter of 50 mm and a vertical diameter of 42 mm. The SMP base width, typically between 8 and 9 cm, is then marked with the superior border beginning at the inferomedial vertex of the mosque to facilitate rotation of the NAC into its new position.

In the operating room, the existing NAC is marked with a 42-mm Freeman areola marker. The entire Wise pattern is incised using a 15 blade. (See Video 2 [online], which displays SMP reduction technique.) An Esmarch bandage is applied as a tourniquet to facilitate de-epithelization of the SMP. All incisions are deepened with electrocautery, except the base of the pedicle. Pedicle dissection begins at its inferomedial border, beveling away from the center of the pedicle at a 45-degree angle, and is carried down to the chest wall. Next, the superolateral border of the pedicle is dissected in a perpendicular manner down

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Received for publication June 13, 2024; accepted October 8, 2024.

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Plast Reconstr Surg Glob Open 2024; 12:e6361; doi: 10.1097/GOX.0000000000006361; Published online 18 December 2024.

Disclosure statements are at the end of this article, following the correspondence information.

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to the chest wall, without beveling. The pedicle is gently suspended and retracted inferolaterally by the assistant to allow dissection of the peripheral tip of the pedicle, connecting the 2 prior dissection planes. This dissection is performed orthogonal to the chest wall, without undermining the pedicle (historically reliant solely on the internal mammary perforators), to capture some of the additional underlying posterior intercostal artery perforators to enhance perfusion of the pedicle.

The lateral breast skin flap is then dissected and elevated with a 1.5-cm thickness. Before dissection, the skin bridge between the lateral skin flap and the SMP is fashioned to create a skin “handle,” which the assistant can use to retract the lateral skin flap toward midline to provide counter tension during the dissection. The authors believe that by instituting a “no lateral countertraction” technique on the lateral skin flap, the dermis remains vascularized and the risk of delayed wound healing at the inverted T-point is mitigated. The remaining breast tissue is dissected out superiorly within the mosque of the Wise pattern, and the entire resection is removed as 1 horseshoe-shaped specimen. The dermal layer along the base of the pedicle is carefully scored with electrocautery while leaving the subdermal plexus intact, which allows for a greater arc of pedicle rotation. Hemostasis is ensured, and the wound bed is irrigated. Local anesthetic is then injected into the pectoralis fascia, the IMF incision, and the planned drain site. A 15-Fr round Blake drain is placed in the wound bed and exits just inferolateral to the IMF incision. A buried triple stitch is then placed between the breast meridian at the new IMF, connecting it with the 2 limbs of the Wise pattern. The NAC of the SMP is then gently rotated into the mosque and temporarily stapled closed along with the other incisions. The patient is briefly positioned upright to assess size and symmetry. Once breast symmetry is deemed satisfactory, the temporary staples are removed, and all incisions are closed in 2 layers (deep dermis and subcuticular). Patients are seen approximately 4 days postoperative; drains are removed at that time or once output has been less than 30 mL/d for 2 consecutive days.

CONCLUSIONS

The SMP technique described accomplishes a significant reduction in breast volume while preserving NAC viability and creating an aesthetic breast appearance that is maintained over time. By taking steps to incorporate additional blood supply as well as taking great care to handle the tissues atraumatically, the described technique serves as a safe and reproducible alternative to the IP technique and/or free nipple grafting for macromastia and severe ptosis. In summary, it is crucial to emphasize meticulous dissection of the pedicle to prevent undermining at both

medial and lateral aspects, along with the senior author’s use of a “skin handle” technique to reduce the risk of delayed wound healing at the inverted T-point. The senior author has safely performed the SMP technique on breasts with sternal notch-to-nipple distances of up to 52 cm, and resection weights of up to 2950 g per breast without untoward complications.^{6,7} The composite complication rate was 11.7% in a study analyzing the senior author’s outcomes for reduction mammoplasties performed between April 2018 and December 2019. This compared favorably to a literature review of the IP, which had a complication rate of 16%.^{2,7} Important limitations include that this study represents a single surgeon’s experience; however, we have found that this technique has proven to be reliable and reproducible and can be performed safely on patients with severe ptosis with satisfactory long-term aesthetic outcomes and low complication rates.

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DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

REFERENCES

1. Cunningham BL, Gear AJ, Kerrigan CL, et al. Analysis of breast reduction complications derived from the BRAVO study. *Plast Reconstr Surg*. 2005;115:1597–1604.
2. Bauermeister AJ, Gill K, Zuriarrain A, et al. Reduction mammoplasty with superomedial pedicle technique: a literature review and retrospective analysis of 938 consecutive breast reductions. *J Plast Reconstr Aesthet Surg*. 2019;72:410–418.
3. Makboul M, Abdelhamid MS, Al-Attar GS. Long-term follow-up and patient satisfaction after reduction mammoplasty: superomedial versus inferior pedicle. *Indian J Plast Surg*. 2016;49:214–219.
4. Hall-Findlay EJ. A simplified vertical reduction mammoplasty: shortening the learning curve. *Plast Reconstr Surg*. 1999;104:748–759; discussion 760–763.
5. Lejour M. Vertical mammoplasty and liposuction of the breast. *Plast Reconstr Surg*. 1994;94:100–114.
6. Talwar AA, Copeland-Halperin LR, Walsh LR, et al. Outcomes of extended pedicle technique vs free nipple graft reduction mammoplasty for patients with gigantomastia. *Aesthet Surg J*. 2023;43:NP91–NP99.
7. Cuning JR, Mookerjee VG, Alper DP, et al. How does reduction mammoplasty surgical technique impact clinical, aesthetic, and patient-reported outcomes?: a comparison of the superomedial and inferior pedicle techniques. *Ann Plast Surg*. 2023;91:28–35.