Lateral Breast Flap With Superomedial Pedicle Breast Lift

Jay W. Calvert, MD, FACS; Brian P. Dickinson, MD; Anita Patel, MD; and Kevin Brenner, MD

Abstract

Background: Single-stage, durable aesthetic contouring of the volume-depleted and ptotic breast remains a challenge for plastic and reconstructive surgeons. These challenges are often even more difficult in the patient who has undergone massive weight loss (MWL).

Objectives: The authors describe their technique of reshaping the breasts of MWL patients with laterally-based breast flaps during a superomedial pedicle breast lift.

Methods: A total of 20 patients were treated in a private clinic by one of the authors between April 2006 and January 2010 were included in this study. Each patient underwent breast reshaping with mastopexy, lateral breast autoaugmentation, and implant insertion. A laterally-based breast flap was developed to augment the involuted and ptotic breast and was dissected in conjunction with the superomedial pedicle breast lift to maintain the implant position, prevent bottoming out, and provide tissue coverage between the skin and breast implant in the advent of wound breakdown.

Results: Mean follow-up for this patient series was 19.5 months (range, two to 47). The average patient age was 41 years (range, 21 to 56), and the majority of patients had Grade 2 ptosis (14 out of 20). The average volume of the implants in this study was 350 cc (range, 275 to 600). There were no instances of seroma or wound infection. Five patients had minor instances of wound breakdown, but none required surgical revision. One patient developed early capsular contracture and required revision. That same patient developed a small hematoma. Patient self-evaluation revealed a high level of satisfaction; all 20 patients reported being happy with their results.

Conclusions: The laterally-based breast flap, in combination with the superomedial pedicle mastopexy, is a powerful tool for use in the postbariatric or postpartum patient in whom the majority of the breast parenchyma is needed to fill the skin envelope. This flap serves to improve overall breast shape by providing added tissue along the deficient inferior pole, relieving some of the unaesthetic lateral chest wall excess and providing an additional layer of support inferiorly along the fold.

Keywords
postbariatric surgery, massive weight loss, mastopexy, postpartum breast, breast reshaping, autoaugmentation, dermoglandular breast flap

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involuntary and tissue characteristic changes allow for frequent ptosis recurrence after implant insertion.

Acceptable aesthetic restoration of breasts in these patient groups can be difficult and is seldom achievable through implant augmentation alone. There have been many options described to address these issues, including mastopexy, mastopexy plus augmentation (implant-based, in one or two stages), mastopexy plus augmentation with autogenous tissue (mastopexy with “autoaugmentation”), and dermal suspension.10-13 In this article, we present an alternative method of autoaugmentation utilizing the inferior portion of the Wise pattern incision with a laterally-based axial blood supply, which does not require an incision on the back or reverse abdominoplasty. The blood supply of the breast is derived from (1) the internal mammary perforators (predominantly the second to fifth perforators), (2) the thoracoacromial artery, (3) the lateral thoracic artery, and (4) the terminal branches of the third to eighth intercostal perforators. The technique described in this article takes advantage of the varied sources of blood supply to the breast, in order to redistribute breast volume and simultaneously suspend a breast implant. The superomedial blood supply flows to the NAC, whereas the axial blood supply from the lateral thoracic and intercostal perforators is directed toward the laterally-based flap. Our autoaugmentation technique can be utilized with or without an implant, improving overall breast shape by providing added tissue along the superior pole, relieving some of the unesthetic lateral chest wall excess, and providing an additional layer of support inferiorly along the IMF. When performed in conjunction with superomedial pedicle mastopexy and implant insertion, lateral breast autoaugmentation allows us to address all aspects of the breast deformity in a single surgery.

METHODS

We retrospectively reviewed the charts of 20 female patients who underwent breast reshaping with a lateral breast flap technique in conjunction with the superomedial breast lift technique between April 2006 and January 2010. We collected demographic information such as age, prior weight loss surgery, amount of weight lost, degree of ptosis, and implant volume. Photographs were taken to assess the postoperative results, and patient satisfaction was determined during chart review as well. Postoperative follow-up time was noted according to the last postoperative photograph. Complications were also recorded, including instances of infection, bleeding, hematoma, seroma, wound breakdown, capsular contracture (CC), or need for revisional surgery.

Operative Technique

Each patient was marked preoperatively in a standard Wise pattern, including markings for a keyhole at the

![Figure 1. A standard Wise “keyhole” pattern is marked on the breast. The nipple-areola complex diameter is maintained between approximately 38 and 42 mm. Intraoperatively, the superomedial pedicle is drawn and then scored onto the breast.](image-url)
proceeded toward the lateral-most extent of the breast tissue. When performing this step, it was essential to maintain the plane of dissection above the level of the pectoralis fascia and not enter the parenchyma of the breast, as the axial blood supply to this flap originates from the lateral thoracic artery. This dissection plane prevents problems when the implant is placed in the subpectoral position since the flap blood supply is superior to this plane.

Rather than detaching or discarding this tissue, it was de-epithelialized and left attached on a laterally-based pedicle, to be advanced medially following placement of the implant (Figures 3 and 4). In patients who elected to forego the implant, the lateral flap was sutured with the tip beneath the base of the superior-medial pedicle, to provide projection as well as to narrow the base of a wide breast. This was accomplished with 3-0 PDS sutures (Ethicon, Inc., Somerville, New Jersey).

We have found that the laterally-based flap has its greatest utility as an inferiorly-based sling to hold a breast implant in proper position. In this patient series, for those who elected to undergo augmentation, all implants were placed in the submuscular position. The subpectoral implant pocket was dissected along the plane from lateral to medial, freeing the inferior portion of the medial pectoralis muscle from the sternum. Preoperatively, we selected a range of implant sizes, with the base diameter being the most significant predictor of range. Then, intraoperatively, the most appropriate implant was determined with a sizer and selected based on contour and volume, as well as the ability to close without any undue tension on the skin flaps after the implant had been placed. The pocket was irrigated with antibiotic solution. Once the implant was placed, the lateral flap was advanced medially and sutured into place, forming a sling along the IMF (Figure 5). The sling was secured with 3-0 PDS sutures placed medially; a running suture was also placed along the inferior border of the flap and the chest wall. The most medial sutures were used to close the lateral flap to the pectoralis major muscle at its insertion onto the sternum and inferiorly onto the chest wall. The most medial tip of the flap was transposed superiorly and, when feasible, sutured to the most inferior aspect of the pectoralis major muscle, where the pectoralis had been released from the most inferior border of the sternum.

The superior-lateral, lateral, and inferior breast tissue was dissected just enough to rotate the nipple into the appropriate position. The nipple was then was sutured into place in the keyhole pattern, and the remainder of the

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**Figure 2.** The superior medial pedicle is de-epithelialized, maintaining a broad base. The breast parenchyma inferior to the nipple-areola complex is deskinned in preparation for the lateral breast flap.

**Figure 3.** The superomedial pedicle is dissected off the chest wall to permit adequate rotation of the nipple-areola complex into the Wise pattern. The lower breast flap is designed, with an incision along the inframammary fold and dissection down to the pectoralis fascia. The lateral-based flap is then deskinned and left attached to a laterally-based pedicle.

**Figure 4.** The superomedial pedicle and the breast flap are freely mobilized to allow appropriate rotation. The superomedial pedicle and the tip of the laterally-based breast flap are rotated cephalically to hold the implant in position.
Wise pattern incisions were closed over the lateral flap (Figure 6). Drains (either number 19 round or number 15 round Blake; Ethicon, Inc.) were placed laterally at the location of the IMF. Drains were typically removed when the output was less than 30 cc per day.

In MWL patients who had significant descent of the IMF, especially laterally, the fold was elevated and sutured to the rib periosteum with 2-0 PDS. Deep dermal closure was carried out with 3-0 Monocryl subcuticular sutures (Ethicon, Inc.), followed by 4-0 Monocryl subcuticular sutures in a running fashion for skin closure.

Clinical results are shown in Figures 7 to 9.

RESULTS

All 20 patients in this study were women, with an average age of 41 years (range, 21 to 56). The majority (14 out of 20) of patients had Grade 2 ptosis; six patients in the series had Grade 3 ptosis. Five patients had undergone gastric bypass surgery, two had lost more than 50 pounds through diet and exercise, and 13 had experienced breast changes following pregnancy. Preoperative clearance was obtained from each patient’s primary care physician or bariatric medicine specialist prior to surgery, taking care to assess for potential nutritional deficiencies.\textsuperscript{14,15} The follow-up
Figure 7. (A, C, E) This 42-year-old woman presented after gastric bypass surgery and weight loss of more than 150 pounds. (B, D, F) One year after mastopexy with the authors’ lateral breast flap technique, with placement of 300-cc smooth, round, moderate-plus profile implants (Mentor LLC, Santa Barbara, California). There is residual fullness and a dog-ear laterally, but the results are significantly improved compared to results from previous patients in whom the lateral breast flap was not utilized.
Figure 8. (A, C, E) This 50-year-old woman presented after gastric bypass surgery and weight loss of more than 100 pounds. (B, D, F) One year after mastopexy with the authors’ lateral breast flap technique, with placement of 350-cc smooth, round, moderate-plus profile implants (Mentor LLC, Santa Barbara, California).
Figure 9. (A, C) This 42-year-old woman presented after gastric bypass surgery and weight loss of more than 100 pounds. (B, D) One year after mastopexy with the authors’ lateral breast flap technique, with placement of 300-cc smooth, round, moderate-plus profile implants (Mentor LLC, Santa Barbara, California). There is residual fullness and a dog-ear laterally, but the results are significantly improved compared to results from previous patients in whom the lateral breast flap was not utilized.
lateral segment was extended to include the lateral chest for implants in the majority of their patients since the pedicle. In the authors’ experience, this obviated the need to the chest wall to suspend the breast mound on a central lateral segment of the Wise pattern are sutured superiorly after MWL, in which the medial segment and extended dermal suspension and parenchymal reshaping mastopexy versusial topic in plastic surgery, and caution has been Simultaneous mastopexy-augmentation has been a contro-
der of projection or bottoming out of the breast parenchyma. At the latest follow-up visit for each patient, we noted no loss of projection or bottoming out of the breast parenchyma.

**DISCUSSION**

Simultaneous mastopexy-augmentation has been a controvers-

tative topic in plastic surgery, and caution has been advised in the past. Some have indicated that single-stage mastopexy-augmentations are not necessarily supe-

tior to two-stage procedures and, furthermore, that a com-

bined procedure does not necessarily obviate the need for a second procedure. Recurrent ptosis is a common
cause for reoperation in these patients, and these second-

ary surgeries may carry a greater risk of complications if certain principles are not followed. Although it remains controversial, secondary mastopexy-augmentation has become more common in carefully selected patients.

Dermal and parenchymal reshaping techniques have been described to prevent recurrent ptosis following combi-

ned mastopexy-augmentation procedures, but few long-
term follow-up studies are available. Correction of the ptotic and volume-depleted breast in MWL patients has been well described; specifically, many authors have addressed the challenges that face plastic and reconstruc-
tive surgeons in treating these patients. Hurwitz and Agha-

Mohammadi described the “spiral flap” to reshape the postbariatric breast, in which the inferior and lateral por-
tions of the Wise pattern are de-epithelialized with the lateral back roll and rotated forward in a spiral fashion to project and augment the breast, concomitantly with reverse abdominoplasty. Rubin et al described the use of dermal suspension and parenchymal reshaping mastopexy after MWL, in which the medial segment and extended lateral segment of the Wise pattern are sutured superiorly to the chest wall to suspend the breast mound on a central pedicle. In the authors’ experience, this obviated the need for implants in the majority of their patients since the lateral segment was extended to include the lateral chest

**CONCLUSIONS**

The laterally-based breast flap, when performed in combi-
nation with superomedial pedicle mastopexy, is a pow-

erful tool for use in postbariatric or postpartum patients, in whom the majority of the breast parenchyma is needed to fill the skin envelope. This flap serves to improve overall breast shape by providing added tissue along the deficient inferior pole, relieving some of the unaesthetic lateral chest wall excess and providing an additional layer of support inferiorly along the fold that is independent of the skin.

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