A Modified Dissection of the Superomedial Pedicle

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Background: The superomedial pedicle is a widely used technique in mammoplasty, with various modifications formed over the years. This technique is often used in patients requiring major reduction in size, and optimization of the steps involved in the technique during the operation is of utmost importance to the plastic surgeon.

Methods: We included 27 female patients who underwent mammoplasty between January 2018 and December 2020, with the modified superomedial pedicle technique. The technique of dissection is described in detail, by changing some of the steps of the pedicle dissection. We then assessed for patient satisfaction, complication rate, and operative duration, compared with a control group of 27 patients who underwent superomedial pedicle mammoplasty without the modification.

Result: The use of this technique resulted in major reduction in operative time, with a similar complication rate and a high satisfaction rate among the patients.

Conclusion: By changing some of the steps in the dissection of the superomedial pedicle, the surgeon can achieve optimal results and safety, with major gain in operative time reduction and surgical flexibility. (Plast Reconstr Surg Glob Open 2022;10:e4363; doi: 10.1097/GOX.0000000000004363; Published online 6 June 2022.)

INTRODUCTION

Excess breast tissue can cause several physical symptoms and psychological distress in women. Breast reduction is one of the most common procedures plastic surgeons perform. The goal of surgery is to decrease breast volume while creating a predictable and stable breast shape, improving symptomatology and appearance.1

The use of the superomedial pedicle technique concurrently with the Wise-pattern skin resection as a parenchymal excision pattern has increased substantially since the first introductory studies on its use for breast reduction.2 Study data show that it is reliable, easily reproducible, and effective in large and ptotic breasts.3

The surgical technique usually consists of stable steps during the operation. However, it is amenable to various modifications, which allow the surgeon more flexibility. We describe a proposed modification to the dissection steps of the superomedial pedicle, which can allow the surgeons to perform pedicle creation, parenchymal resection, and operative time preservation with ease.

METHODS

We conducted a prospective cohort study and included 27 female patients who were operated on in our center between January 2018 and December 2020. A total of 14 patients underwent bilateral breast reduction, nine underwent breast symmetrization after contralateral mastectomy and implant-based reconstruction, and four underwent breast symmetrization after contralateral lumpectomy and oncoplasty (41 breasts in total). In all patients, the modified superomedial pedicle with Wise-pattern skin resection was performed.

A consecutive set of 27 patients who underwent superomedial pedicle mammoplasty in the immediate previous 2-year period of our study served as the control group, in which the dissection modification was not performed.

All the operations were performed by the same plastic surgeon and their team at our center. All the patients were discharged the next postoperative day and had regular follow-up appointments. On the sixth postoperative month appointment, final measurements were taken, and the patient satisfaction was established via a questionnaire (Table 1). We, therefore, measured mean operative time, overall complication rate, and satisfaction rate between the two groups.

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

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DOI: 10.1097/GOX.0000000000004363
Table 1. Satisfaction Rate

| Group     | Very Satisfied | Satisfied   | Not Satisfied | % Satisfied |
|-----------|---------------|-------------|---------------|-------------|
| Intervention | 21            | 6           | 0             | 100         |
| Control   | 18            | 7           | 2             | 93          |

**TECHNIQUE MODIFICATION**

We first describe the conventional superomedial dissection technique with Wise-pattern skin incisions before the implementation of the modified steps, which is compatible with the techniques described by most surgeons.1–4

The patient is marked preoperatively, in the standing position. First, the midaxial line, midclavicular vertical line, and inframammary folds are marked. The sternal notch to nipple and nipple to inframammary fold distances are measured. The new nipple-areolar complex (NAC) position is determined with transposition of the inframammary crease onto the anterior surface of the breast, usually put at 18–22 cm. The areola is usually planned at a 3.8-cm diameter. The superomedial pedicle on a Wise-pattern template is marked with a different color. The vertical and lateral limbs are marked according to the amount of skin needed to be removed. The operation begins with de-epithelialization of the pedicle, preserving the NAC, and proceeds with its dissection on its medial and lateral aspects, down to the pectoralis fascia, thus deserting it from surrounding tissue. Excision of the extra dermoglandular tissue on the lateral and inferior aspects of the pedicle is then performed according to previous markings as well as intraoperative decision. Afterward, the pedicle is rotated and inset on the upper pole of the breast, and layered closure follows.

The technique we propose here involves changes in some steps of the above-mentioned technique, particularly in the way the pedicle is dissected. The operation starts again with the scoring incisions on the premarked medial and lateral limbs and around the areola, and then continues with de-epithelialization of the superomedial flap (Fig. 1), preserving the NAC, as done conventionally.

However, instead of proceeding with dissecting the de-epithelialized pedicle down to the chest wall, a full-thickness incision starts on the inframammary fold level, reaching the pectoralis fascia (Fig. 2). From then on, we elevate the whole breast at the level of the pectoralis fascia (both the superomedial pedicle and the marked medial, lateral, and lower limbs) using monopolar diathermy (Fig. 3). We then form the superomedial pedicle by dissecting on its sides, making it easier and faster to reach the pectoralis fascia (Fig. 4). Afterward, the extent of reduction of tissue from the lateral pillars and above the inframammary fold is decided (Figs. 5–11). Optionally, a portion of tissue from the upper pole can be retained and de-epithelialized accordingly, especially in cases of unilateral symmetrization. We insert a drain tube, and layered closure is finally performed.

**RESULTS**

Overall, 27 operations on 41 breasts using the superomedial pedicle modified dissection technique were performed during the aforementioned time period, and were compared with 27 operations on 40 breasts in the control group. The mean reduction in duration was 40 minutes between the groups (mean operating time, 100 minutes versus 140 minutes). The mean age was 47 versus 51 years (range, 20–68 versus 22–72), the mean body mass index (BMI) was 29 versus 28 (range, 23–39 versus 23–37), and the mean weight of breast tissue resected from each breast was 678 g versus 645 g.

Complications were relatively low in both groups. Five patients (two patients versus three patients) had minor wound breakdown at the T-junction, which resolved with daily dressing changes. One patient in the intervention group had minor hematoma formation, and one patient in the control group had seroma formation after drain removal. Both resolved without intervention. Also, two patients presented with bottoming out deformities at the 6-month follow-up (1+1) and three with hypertrophic scarring (one patient versus two patients). No infection, NAC compromise, or dog-ear deformities were reported. At 6-month follow-up, the patients were asked to report their satisfaction regarding the final result of their surgery. In both groups, most patients reported that they were very satisfied (21 patients versus 18 patients; 78% versus 67%) or satisfied (six patients versus seven patients; 22% versus 26%), with the overall satisfaction rate 100% versus 93%. None requested a reoperation.

**DISCUSSION**

Breast reduction is an increasingly popular procedure among patients requesting cosmetic surgery. Oftentimes, those women present with chronic and severe symptoms due to excessive breast tissue. Individualized approach and thorough preoperative planning are the hallmarks of a successful operation, with good functional and aesthetic results.1,3

For a long time now, there has been increasing utilization of the superomedial pedicle in breast mammoplasty operations, primarily concerning cases of breast reduction, but also in cases of breast reconstruction.4 The superomedial pedicle serves the previously discussed goals well, as it gives the plastic surgeon the ability to resect large amounts of breast tissue.
during reduction, while its transposition remains relatively easy with minimal tethering. It can be used with the vertical or the Wise-pattern skin incisions, according to the severity of macromastia and ptosis. The long experience over the years reflected in studies shows that it is robust and a reliable pedicle that is also amenable to various modifications, according to each case’s circumstances.

Our modification consists of elevating the whole breast at the level of the pectoralis fascia, a relatively avascular plane, from the inframammary fold to the upper pole of the breast and then dissecting marked medial, lateral, and lower limbs. This technique helps save operative time in various ways.

We have found that by acquiring early access on both the upper and lower surfaces of the breast, we can adjust the dimensions (length and width) of the pedicle in a straightforward manner, obviating many times the need for extra thinning in the later stages of the operation. This is facilitated by designing the superomedial pedicle relatively large (14 × 10 cm minimum). We have also found that vascular control is faster during this early “double plane” exposure with swift bleeder localization. Finally, early wide tissue mobilization of tissue helps us deal with discrepancies faster because it makes it easier to manually reform the breast in a “trial and error” manner and compare with the contralateral side, before committing...
to final tissue resection. Because we have a large amount of tissue readily available, we can de-epithelialize more (if needed) on either side of the pedicle.

One of the drawbacks of the modification is the mandatory commitment to a horizontal incision. Because of this, we propose that this technique be predominantly implemented in patients with large breasts and grade II or III ptosis, where a Wise-pattern incision is evidently necessary from the preoperative assessment. Also, this dissection limits the use of an inferior Ribeiro dermoglandular flap for autoaugmentation. However, if more tissue is needed for projection, it can be gained by extending de-epithelialization of the pedicle to its medial and lateral pillars. An example is the preservation of various thicknesses

Fig. 5. Dissection toward the lateral side.

Fig. 6. Dissection on the lateral side.

Fig. 7. Closure test.

Fig. 8. Preoperative image of reduction mammaplasty patient.

Fig. 9. Postoperative image of reduction mammaplasty patient.
of parenchyma on the upper pole, which can facilitate the inset of the NAC in its new position. This can be decided either preoperatively or intraoperatively.

This technique was used in all 27 patients, for both breast reduction and breast symmetrization. The low number of complications, which were minor and transient, combined with the high satisfaction reported by the patients, demonstrates the safety and reliability of the modified superomedial pedicle. Therefore, these characteristics make this proposed technique a good option for patients with differences in breast size (either before reduction or de facto in breast reconstruction) and also a fast and reliable choice for plastic surgeons.

**CONCLUSIONS**

The use of the superomedial pedicle as a workhorse has been widely spread in recent decades, not only for breast reduction, but also in patients undergoing reconstruction after breast cancer surgery. Individual approaches and various modifications have been proposed through the years to maximize efficacy and minimize operation times. The proposed modification satisfies both those goals, and it is one more handy modification that can be considered by every plastic surgeon performing mammoplasty with this pedicle (Tables 1–3).

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**Table 2. Control Group’s Characteristics**

| Characteristics   | Number of Patients | Percentage |
|-------------------|--------------------|------------|
| No. patients      | 27                 |            |
| Age (y)           | 51                 | Range 22–72|
| BMI               | 28                 | 23–37      |
| Active smoking    | 6                  | 22%        |
| Former smoker     | 6                  | 22%        |
| Breast cancer     | 11                 | 41%        |
| Radiotherapy      | 10                 | 37%        |
| Chemotherapy      | 8                  | 30%        |
| Hormonal therapy  | 10                 | 37%        |
| Diabetes mellitus | 7                  | 26%        |
| Artrial hypertension | 9             | 33%        |
| Other comorbidities | 12            | 44%        |

**Table 3. Patients’ Characteristics**

| Characteristics   | Number of Patients | Percentage |
|-------------------|--------------------|------------|
| No. patients      | 27                 |            |
| Age (y)           | 47                 | Range 20–68|
| BMI               | 29                 | 23–39      |
| Active smoking    | 6                  | 22%        |
| Former smoker     | 4                  | 15%        |
| Breast cancer     | 13                 | 48%        |
| Radiotherapy      | 10                 | 37%        |
| Chemotherapy      | 7                  | 26%        |
| Hormonal therapy  | 8                  | 30%        |
| Diabetes mellitus | 5                  | 19%        |
| Artrial hypertension | 7              | 26%        |
| Other comorbidities | 14            | 52%        |

**Fig. 10.** Preoperative image of patient undergoing symmetrization after right oncoplasty.

**Fig. 11.** Postoperative image of patient undergoing symmetrization after right oncoplasty.