The Dragonfly Pedicle: A Safe and Effective Technique for Reduction Mammaplasty

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INTRODUCTION

Reduction Mammoplasty is one of the most common procedures performed by Plastics and Reconstructive surgeons to alleviate symptoms of macromastia, correct asymmetry, and reshape the breast after reconstruction or weight loss. It is imperative to employ the fundamental principles of maintaining adequate perfusion, preserving physiologic function, and minimizing scar burden. These considerations have driven the development of various surgical techniques to accomplish these goals.

The breasts are supplied by an anastomoses of superficial arteries and a deep perforator artery. The tissue is supplied superiorly by branches of the supraclavicular artery, superomedial by branches of the internal thoracic artery, laterally by the lateral thoracic arteries, and inferiorly by the perforating branch of the lateral thoracic artery. This integrated anastomosis system requires preservation of at least 2 arterial supplies to maintain adequate flow to the breast parenchyma and nipple. Cutaneous innervation in this area arises from deep branches of the intercostal nerves, with preservation requiring a deep tissue connection.

Breast reduction techniques center around preservations of the neurovasculature, utilizing a pedicle of unresected tissue. The inferior and medial pedicle techniques tend to be the most successful for preserving blood supply; however, these techniques can limit options in breast shaping and repositioning. Our novel Dragonfly technique maintains dual blood supply to the pedicle and Nipple Areola Complex (NAC), achieves medial pole fullness and NAC mobility, and utilizes an autologous skin brassiere for enhanced pedicle support.

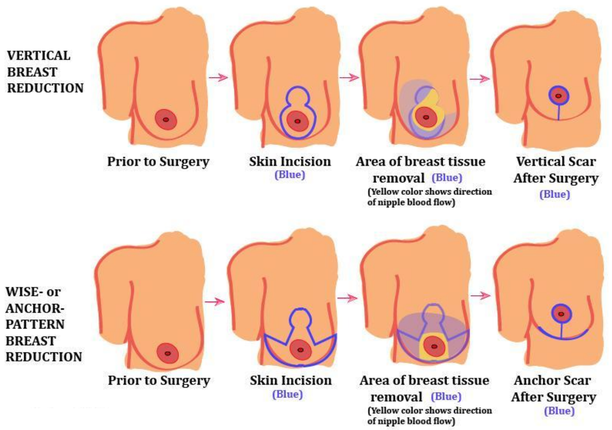

Figure 1. Commonly employed reduction mammaplasty techniques.

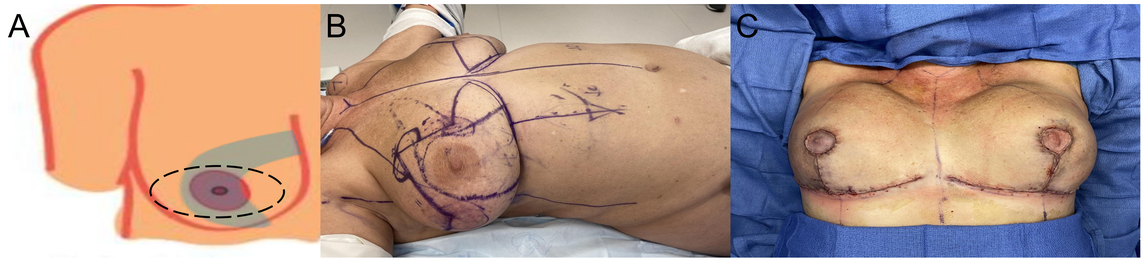

Figure 2. (A) Illustration of inferior-medial pedicle with autologous dermal attachments creating a brassiere (B) Preoperative markings for dragonfly reduction mammaplasty. (C) Final wound closure.

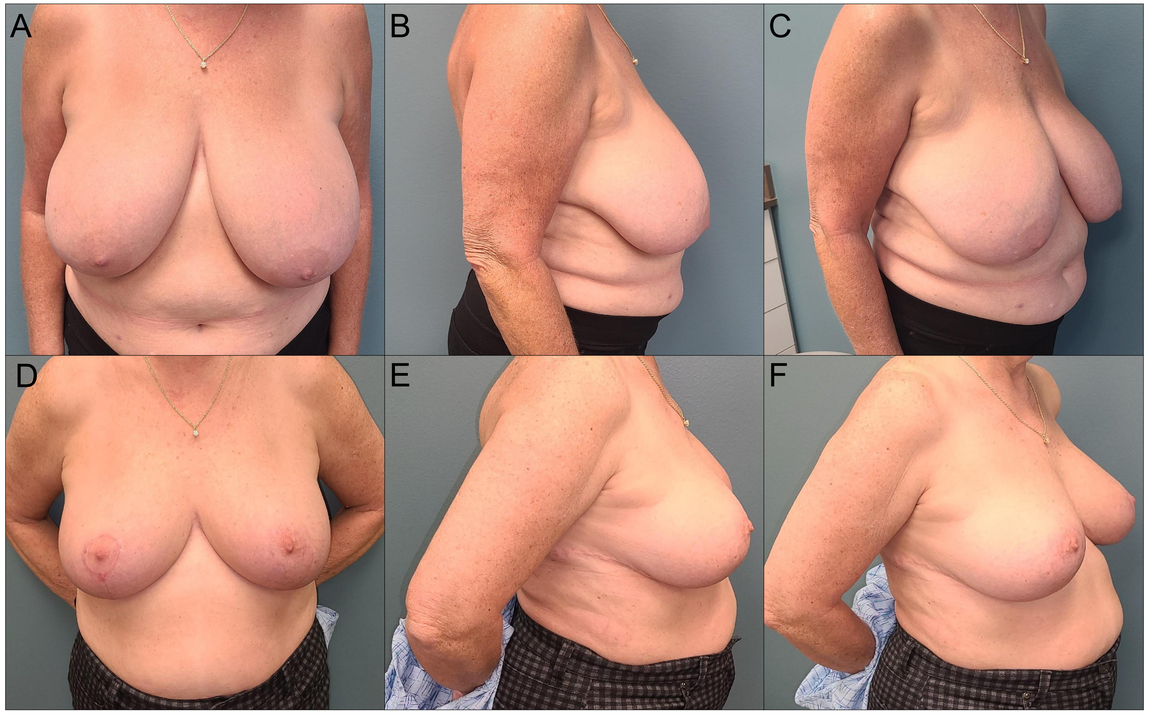

Figure 3. This 64-year-old woman presented for breast reduction surgery. (A, B, C) Preoperative images. (D, E, F) 1 month after reduction mammaplasty using the boomerang pedicle technique. Resection weights: right breast, 420 g; left breast, 720g.

METHODS

Preoperative marking were drawn by marking the midline and the breast meridians, inframammary folds, anterior axillary lines, and the positions of the new nipple-areolar complex (NAC) bilaterally. Excisions were made to create ~ 6 - 10 cm vertical limbs on the medial and lateral aspects of the Wise pattern reduction. Next, a 4 finger breadth wide inferior pedicle was created and carried over the NAC bilaterally. A 50 mm cookie cutter was used to mark out the site of the new NAC's.

Skin level incisions were made around the new NAC and all markings bilaterally. Dissection was then carried out on the medial and lateral aspects of the Wise pattern to the anterior chest wall. A superior medial extension of the inferior pedicle flap was then dissected down. Excess medial and lateral tissue was excised, and skin flaps were closed over the inferior pedicle.

2-0 PDS was used to tag the trigone aspect of the vertical T-incision and close the dermal layer of the vertical and horizontal aspects of the inverted T. 3-0 Monocryl was used to inset the nipples using deep dermal stitches. A 3-0 Monocryl was then used to run the horizontal and vertical limbs of the inverted T-incision. A 4-0 Monocryl was used to run the skin around the NAC bilaterally. Routine scar care was performed following closure.

RESULTS

All patients were monitored pre-operatively and post-operatively at 2-4 weeks and at 6-12 months. Patients' scar healing, aesthetic, and functional outcomes were monitored. Preoperative photographs were compared to post-operative results. All patients were stable with no notable complications and met expected milestones at post-operative visits.

CONCLUSIONS

Our novel dragonfly technique, utilizing an inferior pedicle with a medial pole, offers a novel approach for breast reconstruction. This technique allows for increased fullness and projection in the medial aspects of the breast. The autologous brassiere provides long lasting pedicle support without the need for synthetic mesh or biological substitute. This offers an improved aesthetic outcome for patients with reduction of additional complications.

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