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Demystifying trans-axillary augmentation/periareolar mastopexy: A novel, two-stage, single-operation approach to management of the contralateral breast in implant reconstruction

Nina Kropf [a], Christina N. Cordeiro [b], Colleen M. McCarthy [b], Peter G. Cordeiro [b,*]

[a] *Division of Plastic and Reconstructive Surgery, Department of Surgery, Medical University Vienna, Austria*
[b] *Plastic and Reconstructive Surgery Service, Department of Surgery; Memorial Sloan-Kettering Cancer Center, New York, NY 1275, USA*

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Summary *Background:* Following unilateral tissue expander/implant reconstruction, combined augmentation/mastopexy of the contralateral breast may be performed in an attempt to improve breast symmetry. Combined augmentation/mastopexy can be a very difficult operation, even for the surgeon with substantial experience. To simplify the technical approach to this complex problem, the senior author (PGC) has developed a 'two-stage, single-operation' approach. The purpose of this study is to review the safety and efficacy of this approach to the contralateral breast in the setting of unilateral, implant-based reconstruction.

Methods: A retrospective review of all combined trans-axillary augmentation/periareolar mastopexies performed from 1998 to 2007 was undertaken. Only patients who had a history of prior unilateral mastectomy and immediate expander placement were included. Photographic documentation of long-term aesthetic results was evaluated by two independent observers.

Results: In total, 26 combined, trans-axillary augmentation/periareolar mastopexies were performed in patients, who had initiated unilateral, postmastectomy, tissue expander/implant reconstruction on the contralateral side. No patient desired revisional surgery for inadequate ptosis correction or malpositioning of the nipple. A total of 69% of patients had a 'very good to excellent' overall aesthetic result. Of those patients who were deemed to have a 'good' aesthetic result, the development of a capsular contracture in the reconstructed breast detracted from the overall aesthetics.

* Corresponding author. Tel.: +1 212 639 2521; fax: +1 212 717 3677.
E-mail address: cordeirp@mskcc.org (P.G. Cordeiro).

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Conclusion: The two-stage, single-operation approach to unilateral augmentation/mastopexy described here can produce a good aesthetic result and allow for adequate oncologic follow-up. In particular, excellent results are seen in patients with grade I or II ptosis and good-quality skin preoperatively. Monitoring of the breast for cancer, using mammography, is still possible with this technique.

Tissue expander/implant reconstruction is the most commonly used technique for reconstruction of the breast after mastectomy.[1] Although a vast majority of patients undergoing unilateral mastectomy are considered candidates for postmastectomy implant-based reconstruction, the ideal candidate would have a contralateral breast that matches the implant with respect to breast size and shape. Because the overwhelming majority of women do not have such a breast, however, modifying the contralateral breast following unilateral, implant-based reconstruction becomes essential to achieve or approach symmetry.

Contralateral augmentation alone is an excellent technique for the patient, who has a very small breast without ptosis or pseudoptosis. By contrast, if the contralateral breast has any degree of ptosis, then, the performance of a mastopexy, in addition to the augmentation, is necessitated to maximise symmetry and achieve the best aesthetic result.

Combined augmentation/mastopexy can be a very difficult operation, even for the surgeon with substantial experience.[2] In a single-stage procedure, estimating how much skin to excise and/or how much to augment the patient can be a tremendous challenge. This procedure can be even more challenging when trying to match a breast reconstructed using an implant — a breast that has essentially no ptosis and sits high on the chest wall. Many surgeons instead recommend performing the mastopexy and augmentation in two separate operations, although there is an ongoing debate as to which procedure is to be performed first.[2–12] Subjecting the patient to a second operation and requiring them to live with the inadequately lifted augmentation or a non-augmented mastopexy is not an ideal situation. This is particularly true for a patient with breast cancer, who has already undergone two operations just to achieve the reconstructed breast mound (Figure 1).

To simplify the technical approach to this complex problem, the senior author has developed a 'two-stage, single-operation' approach to the problem. First, a trans-axillary sub muscular augmentation of the contralateral breast is performed. Next, an accurate estimate of the exact skin resection required is performed with a temporary periareolar tacking suture. The periareolar mastopexy is then completed and the breast mound is readjusted over the implant.

The purpose of this study is to review the safety and efficacy of this approach to the contralateral breast in the setting of unilateral, implant-based reconstruction. Complications, overall aesthetic results, resultant breast symmetry and recurrent ptosis will be evaluated. Patient selection, technical pearls and the impact of this procedure on the continued oncologic surveillance of the contralateral breast will be discussed.

Methods

Study design

A retrospective review of all combined trans-axillary augmentation/periareolar mastopexies was performed. Consecutive cases performed by the senior surgeon (PGC) from December 1998 to January 2007 were evaluated. Only patients who had a history of prior unilateral mastectomy and immediate expander placement were included. Similarly, only patients who underwent a combined trans-axillary augmentation/periareolar mastopexy of the contralateral breast at the time of the exchange procedure were considered eligible for review.

Demographic, oncologic, reconstructive and complication data were retrieved from a prospectively maintained, clinical database. Photographic documentation of long-term aesthetic results was evaluated by two independent observers. Disagreements were resolved by discussion. Breast ptosis was evaluated using the Regnault classification system.[13] The overall aesthetic results were evaluated using the rating scale first described by Garbay et al., and later adapted by Lowery and colleagues.[14,15] This scale evaluates five variables (i.e., symmetry of breast volume, symmetry of breast contour, placement of the breast mounds on the chest wall, appearance of the inframammary folds and breast scars), each on a 3-point scale. Summary scores are then produced and overall aesthetic results classified as 'excellent, very good, good or fair' on a 4-point ordinal scale. Inter-observer reliability of the overall aesthetic results was determined by calculation of a linear weighted kappa coefficient. Stata statistical software was used.

Radiographic imaging was performed according to the oncologic standard of care for screening of the contralateral breast.

Patient selection

All of the options for breast reconstruction are discussed with the patient. If a patient elects to have reconstruction with an implant, then, management of the contralateral breast must also be addressed. In general, the best candidates for augmentation/mastopexy are women with A—B cup breasts and minimal-to-no breast ptosis. Skin quality contributes greatly to the result and, therefore, patients with the most elastic skin and minimal striae will tend to have the best results. Ideally, patients with grade I or II ptosis are selected for this type of procedure to maximise the result. However, in the patient with a grade III ptosis, who is warned about the potential for recurrent ptosis, this procedure is still an option.