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Case Report

Yin–Yang NAC sharing: Full-thickness split graft from a single NAC for bilateral immediate reconstruction after skin-reducing mastectomy

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ABSTRACT

Nipple–areola complex (NAC) reconstruction significantly contributes to postmastectomy body image and patient satisfaction. While nipple sharing has been described in delayed settings, its application in immediate reconstruction after skin-reducing mastectomy (SRM) is limited. We report the case of a 32-year-old BRCA1+ patient undergoing bilateral SRM with immediate implant-based reconstruction, in which a novel Yin–Yang nipple grafting technique was performed using the hypertrophic contralateral nipple. The donor nipple was harvested as a full-thickness non-vascularized graft, divided along a curved Yin–Yang fashion, and both halves were reshaped and grafted bilaterally to create two circular, natural-looking NACs. At the 6-month follow-up, the grafts showed complete take, satisfactory projection, and pigmentation. This report illustrates the feasibility and limitations of one-stage NAC reconstruction using a non-vascularized nipple graft technique in a selected patient undergoing SRM.

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Introduction

Reconstruction of the nipple–areola complex (NAC) plays a fundamental role in the psychological recovery and aesthetic satisfaction of patients undergoing postmastectomy breast reconstruction. The presence of the NAC contributes to a sense of bodily integrity, wholeness, and femininity, and its absence is associated with a decrease in body image and satisfaction even in cases of technically successful breast mound reconstruction [1,2].

Although both local flap and full-thickness free NAC graft reconstructions experience a reduction in projection over time, the degree of flattening is generally more pronounced with flap techniques due to scar contracture and the absence of native NAC structural components [3]. Full-thickness NAC grafts, while also subject to partial projection loss, tend to maintain a more natural contour and achieve superior color and texture match, particularly when harvested from the contralateral NAC [4]. Nevertheless, this method does not restore sensation or erectile function, and outcomes rely heavily on appropriate patient selection and meticulous surgical execution.

NAC sharing, first introduced in the 1970s, involves grafting tissue from a healthy contralateral NAC onto the reconstructed breast. It provides superior outcomes in color match, texture, and projection and eliminates the need for areolar tattooing [4,5]. While classically performed in a delayed setting, immediate use of NAC sharing has rarely been reported.

We describe a unique case of bilateral immediate NAC reconstruction during skin-reducing mastectomy using a novel “Yin–Yang” nipple graft technique. This approach enabled bilateral reconstruction using a single donor nipple, which was harvested in full thickness, symmetrically divided, reshaped into circular forms, and orthotopically grafted. The goal of this report is to highlight the technical steps, advantages, and indications of this strategy within modern oncoplastic surgery.

Case report

A 32-year-old female (BMI ~23), BRCA1 positive, was referred for risk-reducing bilateral mastectomy after being diagnosed with right-sided ER+/PgR+/HER2– invasive ductal carcinoma Figure 1. MRI revealed a 35 mm retroareolar lesion.

The surgical plan included bilateral skin-reducing mastectomy (SRM) through Wise-pattern incisions and immediate implant- based reconstruction. NAC-sparing mastectomy was not feasible due to ptosis and retroareolar tumor location. Sentinel lymph node biopsy was performed and was negative. Postoperatively, the patient received adjuvant endocrine therapy consisting of an LHRH analogue combined with an aromatase inhibitor. No chemotherapy or radiotherapy was indicated.

Figure 1. Preoperative view showing hypertrophic NACs before resection.

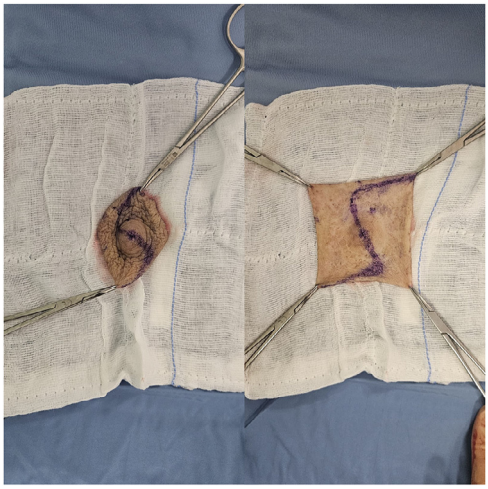

Figure 2. Intraoperative image of Yin–Yang division of full-thickness NAC graft.

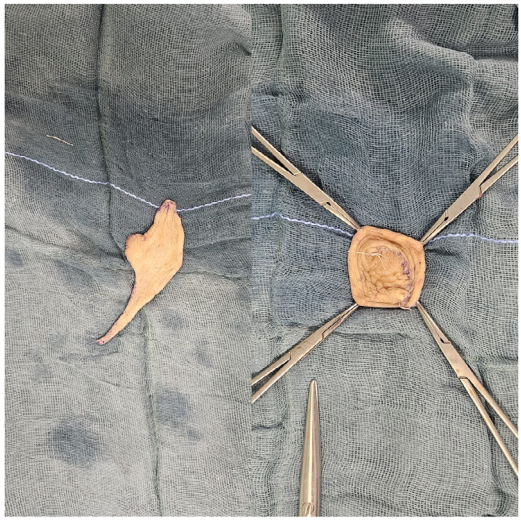

Figure 3. Intraoperative image of a half graft reshaped into a circular construct.

Surgical technique

Under general anesthesia, bilateral SRMs were performed. The hypertrophic left NAC (9 mm height) was excised as a full- thickness graft. Subareolar frozen section confirmed the absence of malignancy [3]. The graft was divided along a Yin–Yang curved plane Figure 2, and each half reshaped into a circular construct Figure 3. De-epithelialized recipient beds were created symmetrically on the reconstructed breasts.

Polyurethane-coated B-Lite implants (305 mL, Polytech) were placed in dual-plane pockets, with subpectoral coverage superiorly and inferior support provided by dermo-adipose flaps. No biologic or synthetic mesh was used.

The grafts were fixed with Nylon 5-0 and secured using tie-over bolsters. Recovery was uneventful. At the 6-month follow-up, both grafts demonstrated complete take, satisfactory projection, and natural pigmentation. The patient reported high satisfaction and maintained oncologic surveillance.

Discussion

This case highlights the feasibility and aesthetic efficacy of using a full-thickness Yin–Yang NAC graft technique during immediate reconstruction after SRM. Several factors favor this method in selected cases.

From a psychological standpoint, performing complete breast and NAC reconstruction in a single stage enhances emotional recovery and reduces the trauma of prolonged deformity or anticipation of secondary procedures. Studies have shown that patients who undergo immediate NAC reconstruction report greater satisfaction and less of a sense of incompleteness than those who undergo delayed or staged procedures [6].

Although both local flap and full-thickness free NAC graft reconstructions experience a reduction in projection over time, the degree of flattening is generally more pronounced with flap techniques due to scar contracture and the absence of native NAC structural components [3]. Full-thickness NAC grafts, while also subject to partial projection loss, tend to maintain a more natural contour and achieve superior color and texture match, particularly when harvested from the contralateral NAC [4]. Nevertheless, this method does not restore sensation or erectile function, and outcomes rely heavily on appropriate patient selection and meticulous surgical execution.

Tattooing, although useful for simulating areolar pigmentation, does not provide NAC relief and may suffer from pigment fading, asymmetry, or unnatural hue, particularly in patients with darker skin types [7,8]. By eliminating the need for tattooing altogether, the Yin–Yang graft technique simplifies the reconstructive process and avoids future pigment adjustments or dissatisfaction.

Furthermore, by performing the graft harvest during the mastectomy phase and after frozen section confirmation, this technique integrates seamlessly into the operative flow without significantly extending surgical time. Concerns about additional operative burden are thus minimized.

The frozen section of the donor NAC was performed as a safety precaution, despite the contralateral breast being clinically and radiologically healthy. Although a positive result would have been highly unexpected, our predefined strategy was to complete the mastectomy and implant-based reconstruction as planned, while deferring NAC reconstruction to a secondary stage. [9] In such a scenario, the NAC would have been reconstructed with either three-dimensional tattooing or a combination of local flap and tattooing.

While innervation and erectile function are inevitably lost in the grafted NAC, visual symmetry and general tactile resemblance to the contralateral NAC can still be maintained.

Compared to the straight bisection method previously described in the literature [2], the Yin–Yang division ensures more precise geometric congruence of the graft halves, allowing each to be reformed into a perfectly circular NAC. This configuration minimizes linear edges, which can otherwise result in postoperative folds, step-offs, or buckling, and thus prevents irregularities that may reduce the effective graft–recipient contact surface. A reduced contact area can impair revascularization and increase the risk of partial necrosis. By optimizing circumferential matching and maximizing surface contact, the Yin–Yang approach may enhance graft integration and long-term stability while preserving a smooth, natural contour.

Sentinel lymph node biopsy was negative, and the patient subsequently received adjuvant endocrine therapy with LHRH analogue combined with aromatase inhibitor. No radiotherapy was indicated. Our institutional policy is to ensure complete wound healing before initiating any adjuvant therapy, generally waiting at least 4 weeks after surgery. In the event of complications requiring rapid initiation of systemic therapy, we adopt an aggressive surgical approach, including implant removal if necessary, to accelerate healing and allow timely oncological treatment. We consider that in young patients, immediate breast and NAC reconstruction provides a substantial psychological advantage in facing adjuvant therapy with preserved body image.[10] Although radiotherapy can negatively influence implant-based outcomes over time, the choice of polyurethane-coated implants, which have shown lower contracture rates compared with ADM-assisted reconstructions in irradiated patients

Figure 4. Six-month postoperative view showing symmetrical, pigmented, projecting NACs.

[11], was intended to mitigate this risk. Furthermore, lipofilling and minor revisions can be performed if needed, and autologous reconstruction remains a reliable backup option.

Our results at 6 months confirm that Yin–Yang nipple grafting offers a simple, reproducible, and highly aesthetic solution for immediate NAC reconstruction in the context of SRM Figure 4. It provides an excellent match in size, color, and position and spares patients the morbidity of delayed procedures or complex flap designs.

Conclusion

The Yin–Yang NAC graft technique allows one-stage bilateral NAC reconstruction using a single donor NAC. It combines oncologic safety, operative efficiency, and superior aesthetic integration. This technique should be considered in patients undergoing SRM who present with a healthy, hypertrophic nipple and desire immediate reconstruction.

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Ethical approval

Not required.

Declaration of competing interest

None declared.

References

1. De Vita R, Pozzi M, Zoccali G, et al. Skin–reducing mastectomy and immediate breast reconstruction in patients with macromastia. *J Exp Clin Cancer Res.* 2015;34:120 10.1186/s13046–015–0227–5.
2. Friebel TR, Gardiner S, Naji S, Mathur BS. Nipple sharing: an undervalued technique in nipple reconstruction. *Ann Breast Surg.* 2018;2:16.

3. Satteson ES, Brown BJ, Nahabedian MY. Nipple–areolar complex reconstruction and patient satisfaction: a systematic review and meta–analysis. *Gland Surg*. 2017;6(1):4–13.
4. Egozi D, Allweis TM, Fishel R, Jacobi E, Lemberger M. Free nipple grafting and nipple sharing in autologous breast reconstruction after mastectomy. *Plast Reconstr Surg Glob Open*. 2020;8(9):e3138.
5. Fansa H, Linder S. Autologous breast reconstruction with free nipple–areola graft after circumareolar (skin–reducing) mastectomy. *J Pers Med*. 2022;12(10):1588.
6. Doyle B, Shaari E, Hamed H, Kothari A. Outcomes after skin–reducing mastectomy and immediate hybrid breast reconstruction using combination of ADM and de–epithelialized dermal flap in large and/or ptotic breasts. *Ann Breast Surg*. 2022;6:12 10.21037/abs–21–10.
7. Smallman A, Crittenden T, MiinYip J, Dean NR. Does nipple-areolar tattooing matter in breast reconstruction? A cohort study using the BREAST-Q. *JPRAS Open*. 2018;16:61–68. doi:10.1016/j.jpra.2018.01.003. Erratum in: JPRAS Open. 2021 Sep 24;30:174-175. doi:10.1016/j.jpra.2021.09.007.
8. Goh SC, Martin NA, Pandya AN. Patient satisfaction following nipple–areolar complex reconstruction and tattooing. *J Plast Reconstr Aesthet Surg*. 2011;64(3):360–363.
9. Pechevy L, Carloni R, Guerid S, et al. Skin–reducing mastectomy in immediate reconstruction: how to limit complications and failures. *Aesthet Surg J*. 2017;37(6):665–677.
10. Berner JE, Mughal M, Mohanna P–N, et al. Free nipple grafts for immediate autologous breast reconstruction: expediting the reconstructive journey. *J Plast Reconstr Aesthet Surg*. 2021;74(12):3443–3476. doi:10.1016/j.bjps.2021.09.017.
11. Salgarello M, Pino VS, Taraschi F, et al. The impact of postmastectomy radiation therapy on immediate prepectoral reconstruction with polyurethane-coated implants. *Aesthetic Plast Surg*. 2025. doi:10.1007/s00266-025-05119-w.