

# The Breast–Areola Reduction/Reconstruction Technique Addressing the Central Lumpectomy Defect in Ptotic Breasts

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**Summary:** For decades, oncoplastic techniques have been an emerging, yet underutilized approach to breast cancer surgery. Recent developments in breast oncology support the potential for the omission of radiation therapy in a subset of patients eligible for breast-conserving surgery, which makes immediate reconstruction available to a much larger demographic. Although existing oncoplastic methods have offered durable and cosmetically acceptable results in select cases, there remains significant room for improvement. This publication presents a novel option in oncoplastic reconstruction named Breast–Areola Reduction/Reconstruction (BARR) that utilizes the tenets of a superomedial pedicle breast reduction and a Wise-pattern closure to address asymmetry and deformity in treatment of central breast cancers. The BARR technique features principles that are foundational to plastic surgery training, which should augment the acquisition and delivery of oncoplastic surgery in the era of progress to come. (*Plast Reconstr Surg Glob Open* 2024; 12:e6022; doi: [10.1097/GOX.0000000000006022](https://doi.org/10.1097/GOX.0000000000006022); Published online 1 August 2024.)

## INTRODUCTION

Breast cancer has been the second leading cause of death in women in the United States.<sup>1</sup> With the advent of high-quality chemoradiation, the pendulum has shifted from radical surgical measures to breast-conserving therapy (BCT).<sup>2</sup> As a result, advanced oncoplastic techniques have become imperative to modern breast cancer reconstruction. Several techniques have been created to reconstruct these partial defects with a goal of restoring shape and providing symmetry in patients opting to proceed with BCT.<sup>3–5</sup> Among the choices in the plastic surgeon's armamentarium, the decision on the technique to be utilized is largely influenced by three factors: the area of the lumpectomy defect, the degree of ptosis, and the inherent parenchymal volume. The modalities vary from local tissue rearrangement to breast reduction techniques or advanced perforator flaps<sup>6</sup> (Fig. 1).

Resection of central tumors can necessitate removal of the nipple areola complex (NAC), and there are few oncoplastic methods to address this. Of the described techniques, the Grisotti flap is the most commonly cited.<sup>7</sup> This technique utilizes an inferolateral dermoglandular pedicle for neo-areola creation, which is rotated and advanced into the central defect. Despite the creation of a new areola and acceptable cosmesis, its use is limited to patients with long nipple-to-inframammary-fold distance (N–IMF). Patients with shorter N–IMF distances risk potential pedicle congestion and failure. Moreover, the Grisotti flap will not address preexisting breast ptosis or ensure symmetry. We hereby propose a technique that relies on principles of a superomedial pedicle Wise-pattern breast reduction to address the dearth of options for central lumpectomy defects.

## METHODS

### Indications and Contraindications

The breast–areola reduction/reconstruction (BARR) technique is indicated in central breast pathology that meets criteria for BCT and is most feasible for grade II–III breast ptosis. Deferring to the oncologic surgeon with regard to candidacy for BCT should help exclude connective tissue diseases, preclusive pathology, multifocal disease, or tumors larger than 5 cm.<sup>8</sup>

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## Markings

The standard markings for a Wise-pattern reduction are delineated (Fig. 2), with the apex being the Pitanguy point. The two vertical limbs are measured at 8 cm, and the horizontal limb of the triangle is measured at 9 cm. The breast is rotated medially and laterally to ensure that the skin will be able to approximate after the resection. The tumor and NAC are marked for removal on the affected side.

## Operative Considerations

Before the cancer resection, a true superomedial pedicle is marked on the breast. The pedicle extends laterally past 12 o'clock and medially to 3–5 o'clock (Fig. 3). A 42-mm cookie cutter is used to demarcate the new areola. The oncologic surgeon should be present during this process to ensure that the new NAC does not extend into the excision bed. The remainder of the pedicle is de-epithelialized, and the superomedial pedicle is defined with electrocautery. The arterial pedicle will be 2–3 cm deep to the dermis, which permits liberal debulking on the deep glandular surface.

The nipple is marked at approximately 6 cm from the IMF. A triangle technique is used to facilitate symmetry. The pedicle of the neo-areola is rotated in a cephalad and medial direction into the new NAC. The medial-inferior border of the pedicle has now become secured to the

## Takeaways

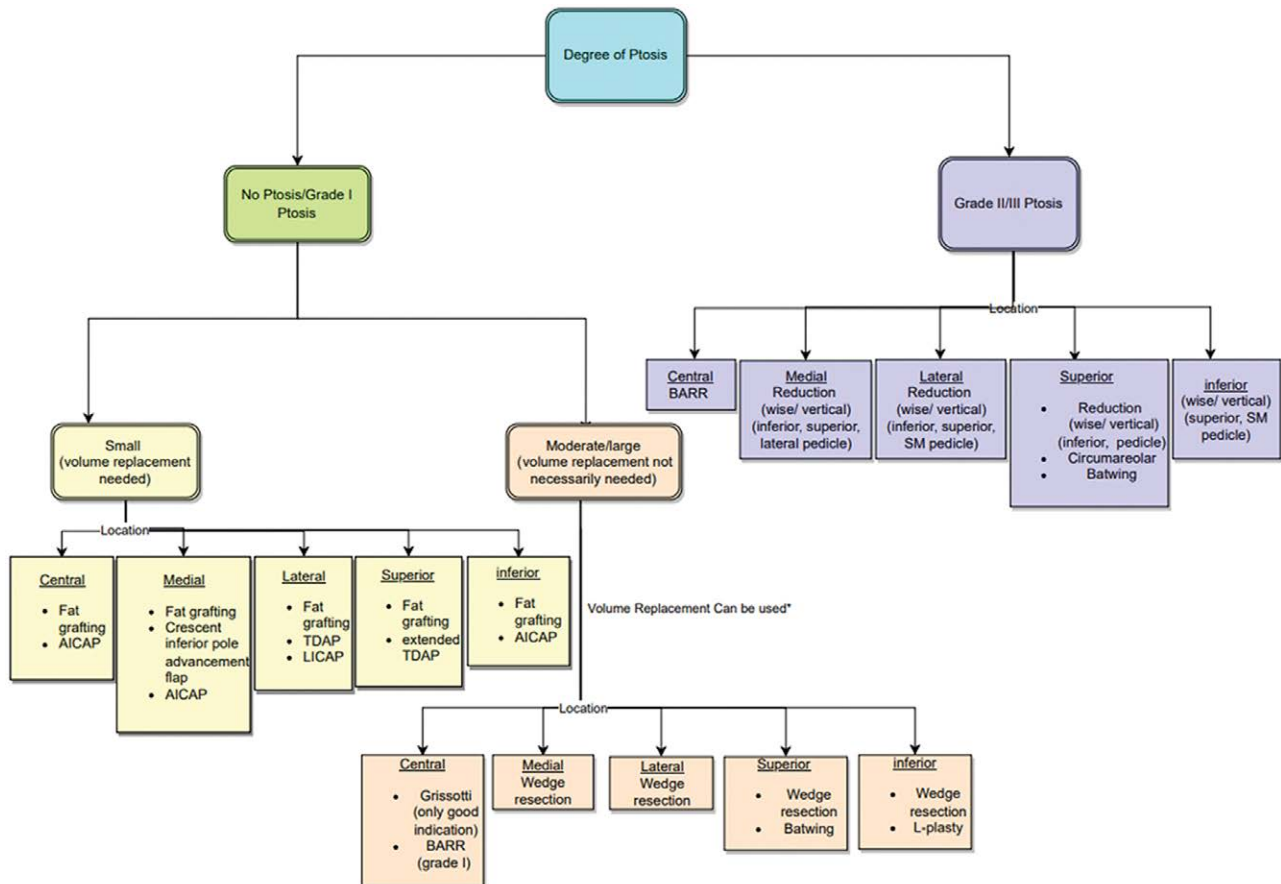
**Question:** Can central lumpectomy defects in ptotic breasts be treated with the breast-areola reduction/reconstruction technique?

**Findings:** This article highlights a practical approach for addressing oncoplastic breast defects, the technical considerations of the central lumpectomy defect, and a strategy for a successful reconstruction, as exemplified in the attached cases.

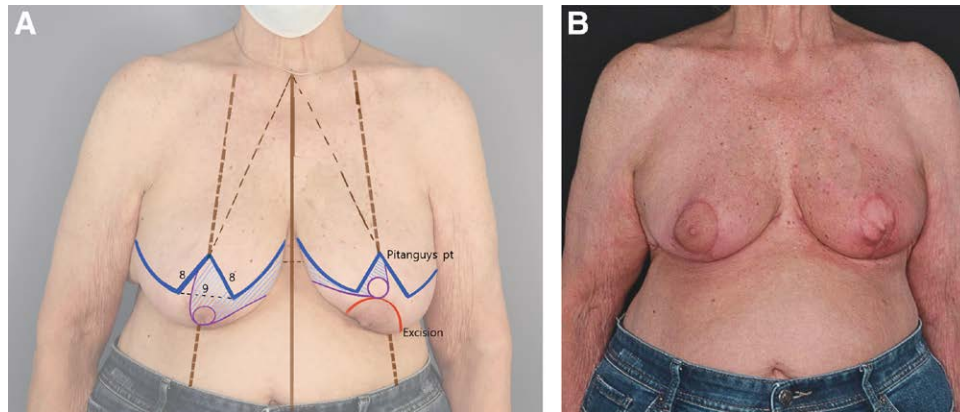
**Meaning:** The tenets of a superomedial pedicle breast reduction and a Wise-pattern closure can be used to address the challenge of central, retroareolar breast cancers.

lateral pillar of the breast. The contralateral reduction mammoplasty is completed. The surgeon may consider 10%–20% more glandular resection on the noncancer side, and a slightly higher lift to account for the downstream effect of radiation to the breast with cancer.

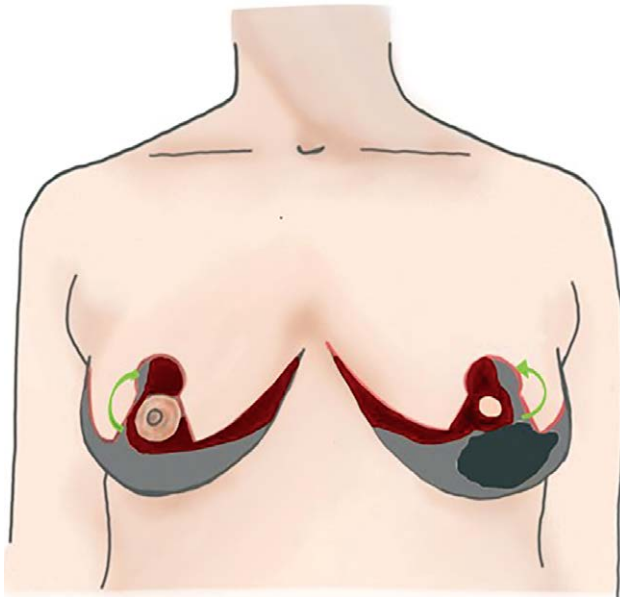
When creating the superomedial pedicle on the cancer side, a length discrepancy can arise between the medial and lateral pillars. In our experience, the bulk may enhance medial fullness and has not been problematic. However, irregularities may arise in a smaller breast



**Fig. 1.** Proposed algorithm for the management of postlumpectomy defects from breast conservation surgery.



**Fig. 2.** Markings. A Wise-pattern skin excision with a superomedial pedicle is designed. The BARR technique involves creation of a neo-areola with a simultaneous mastopexy/reduction mammoplasty depending on the breast volume of the patient. A, Preoperative patient with markings. B, Six months after completion of radiation therapy on the affected left side.



**Fig. 3.** The superomedial pedicles are rotated and advanced into the new position.

where the sternal notch to NAC distance is deficient, and we would not recommend the BARR. Unforeseen asymmetries can be mitigated with fat grafting downstream (Fig. 3).

## RESULTS

Our experiences reflect a series of five patients with unilateral invasive ductal carcinoma that met indications for BCT. Initial follow-up occurred at 2 weeks. Not all patients opted for nipple reconstruction, which we perform after at least 1 month. None of the patients that underwent nipple reconstruction developed malperfusion to the skin paddle. Otherwise, we observe follow-up at 3- to 6-month intervals until 6 months after the completion of radiation. We have experienced no wound complications

or significant asymmetries. Our patients have expressed excellent satisfaction with their results.

## DISCUSSION

Strategies for breast reconstruction rely on the patients' wishes, location and stage of the cancer, and the degree of breast ptosis. The added complexity with oncoplastic reconstruction is striving for aesthetic value. This philosophy necessitates the close collaboration of the oncologic surgeon, the reconstructive surgeon, and the radiation oncologist. As Grisotti delineated, radiation must be applied judiciously to avoid undue fibrosis of the skin and breast parenchyma. By accurately demarcating the surgical bed with radio-opaque clips, surgeons can assist the radiation oncologist to limit the breadth of radiation.<sup>9</sup> Soon, the oncological surgeon may even be able to identify candidates for the omission of radiation.<sup>10</sup> Although oncoplastic BCT remains an underutilized strategy, the paradigm may soon be changing.

Retroareolar defects are distinctly challenging to address. As a result, many of the surgeons have traditionally opted for a total mastectomy with implants in lieu of BCT. Although the Grisotti flap represents a step toward progress, the potential for lower pole contracture in patients with short N-IMF conflicts with aesthetic intentions. Alternatively, The BARR proposes a replicable aesthetic outcome, where the nascent NAC and the lower pole can be tailored. Like many other oncoplastic procedures, the BARR is inherently suited for grade II-III breasts or large nonptotic breasts. From the vantage point of reproducibility, the technical attributes of the BARR are fundamental to the superomedial reduction, which should shorten the curve for acquisition. We contend that the BARR should be considered as a durable and readily deployable option in the collective effort to deliver improved aesthetic outcomes for breast cancer patients with central tumors.

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## DISCLOSURE

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

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