Modern Approaches to Oncoplastic Surgical Treatment

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KEYWORDS

• Aesthetics • Breast cancer • Breast conserving treatment • Breast deformity • Oncoplastic • Lumpectomy • Partial mastectomy • Radiation

KEY POINTS

- Reconstruction of the partial mastectomy defect has many benefits over lumpectomy alone for patients with breast cancer.
- The indications continue to expand and include patients with large breasts, large tumors, greater than 15% tumor to breast volume ratio, or patients where poor cosmesis is anticipated with lumpectomy alone.
- The most common technique is using the principles of breast reduction or mastopexy and involves rearranging breast tissue to fill the defect while improving cosmesis.
- Although the initial driving force was to prevent poor cosmetic results, the benefits are now known to include wider margins, larger resections, fewer re-excisions, and broadening the indications for breast-conserving therapy.
- Modern approaches include the use of auto-augmentation flaps to fill remote defects and intraoperative radiation therapy to minimize long-term fibrosis and the benefit of new data on the topic.

INTRODUCTION

Oncoplastic surgery (OPS) refers to the surgical management of breast cancer which combines breast-conserving therapy (BCT) with plastic surgical techniques to optimize outcomes. The goals include (1) oncologic efficacy, (2) improved breast cosmesis, (3) a favorable safety profile, and (4) improved overall patient satisfaction compared with partial mastectomy alone. OPS has also been shown to have increased satisfaction compared with total mastectomy with immediate reconstruction.[1]

Oncoplastic techniques are relatively new and although initially more popular in the United Kingdom and Europe, they have recently gained traction worldwide. Werner Audretsch is credited for coining the term "oncoplastic" in the 1980s.[2] Indications were initially limited, with some oncologic breast surgeons having reservations about reconstructing a partial defect. As we learn more about the safety and efficacy of this approach, partial breast reconstruction today has become an important part of our reconstructive practices. A recent retrospective cohort analysis of data from the ACS-NSQIP database demonstrated an increase in the use of oncoplastic breast reconstruction of 241% from 2008 to 2016, a rate of increase of 11% per year, whereas the rate of partial mastectomy without reconstruction has remained relatively constant.[3]

OPS is now considered by many to be the "gold standard" following partial mastectomy.[4,5] Reduction and flap techniques have been around for a while and are still used in the oncoplastic approach. Innovations have brought refinements in technique, streamlined modalities to deliver radiation therapy, tumor biology testing to determine

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the value of adjuvant treatment, and more importantly a better understanding of outcomes and patient satisfaction as more evidence becomes available.

DEFINITION AND CLASSIFICATION

A recent consensus defined OPS as "a form of breast-conservation surgery that includes oncologic resection with a partial mastectomy, ipsilateral reconstruction using volume displacement, or volume replacement techniques with possible contralateral symmetry surgery when appropriate."[6] Although some surgeons still consider OPS to include any method of breast reconstruction after partial or total mastectomy, others (particularly in the United States) use the terms "oncoplastic surgery" in how it relates to partial breast reconstruction.[7,8]

Most classifications differentiate OPS into volume displacement and volume replacement techniques.[6,9] A level 1 volume displacement oncoplastic operation involves less than 20% of the breast tissue removed in the partial mastectomy and then reconstruction with local tissue rearrangement such as a doughnut mastopexy or crescent mastopexy.[6] A Level 2 volume displacement oncoplastic operation involves 20% to 50% of the breast tissue removed in the partial mastectomy followed by reconstruction typically using mastopexy or reduction patterns. Last, a volume replacement oncoplastic operation occurs when greater than 50% of breast tissue is removed in the partial mastectomy followed by reconstruction using local/regional flaps or implants. Most of the oncoplastic operations use this classification system as a useful algorithm for guiding selection of surgical technique.

Surgical Approach to Optimize Esthetics

The original driving force behind the popularity of the oncoplastic approach was preservation of esthetic results. A recent focus on esthetics has once again stressed the importance of this as a desired and valid outcome. In a recent series, the revision rate following oncoplastic reduction procedures with a follow-up of 3.8 years was 21%, with esthetic improvement as the most common reason for revision being performed in 13% of patients.[10] The surgeon needs refined techniques in their armamentarium to address shape, contour, symmetry, size, and nipple position in attempts to improve cosmesis and subsequently patient satisfaction. **Table 1** shows techniques that can be used to address esthetic concerns in OPS.

Breast shape is affected by both volume loss following tumor resection and radiation (XRT). XRT will often exaggerate a deformity, which is typically more pronounced when lumpectomy is performed without OPS.[11] Even with oncoplastic techniques, the potentially adverse esthetic effects of XRT are unpredictable. Regarding volume loss in a smaller breast, the easiest way to correct the defect is to fill it with equivalent local tissue. If the volume can be replaced, the shape and contour are more likely to be preserved, even after XRT. Overcorrection can be considered with a slightly larger volume flap than the actual defect to account for tissue contraction after XRT.

In women with larger or ptotic breasts, the oncoplastic reduction or mastopexy options have become an invaluable tool for many reasons.[12] The shape is dictated by reducing the breast size and incorporating the defect into a smaller, lifted breast. In these cases, although the original shape is not preserved, it is often improved. Contour is addressed by filling the defect with surrounding breast tissue and removing additional skin so that the skin/volume discrepancy with lumpectomy alone is corrected, thus additionally improving shape and contour.

Larger, more remote defects and defects in smaller breasts can be reconstructed using auto-augmentation flaps during oncoplastic reduction or mastopexy procedures.[13] This allows the rotation of tissue to fill the defect to preserve the contour in places where surrounding breast tissue is insufficient to reconstruct the defect (**Fig. 1**). Auto-augmentation options include extending the primary pedicle to rotate into a defect or creating a secondary dermoglandular pedicle to move independent to the pedicle containing the nipple-areolar complex. These options further extend the oncoplastic approach to patients who otherwise would not have good esthetic outcomes using regular oncoplastic procedures. In our recent series examining oncoplastic outcomes, auto-augmentation flaps were used 33% of the time with superomedial being the most common extended primary pedicle and lateral being the most common tumor location.[13] Inferolateral was the most common secondary pedicle used for lateral or upper outer defects. There were no significant differences in the overall complication rate with 15.5% in the regular oncoplastic group, 19.6% in the extended pedicle group, and 20% in the secondary pedicle group. **Fig. 2** depicts an algorithm demonstrating oncoplastic techniques based on breast size, defect size, and defect location.[13]

The timing of oncoplastic reconstruction deserves consideration. The advantage of performing a reduction or mastopexy as OPS are that this is done as a single operation which may

Table 1
Esthetic concerns that can be addressed through immediate oncoplastic procedures[10]

Esthetic Concern	Potential Oncoplastic Tools in Women with Small Breasts	Potential Oncoplastic Tools in Women with Larger Breasts
Shape Contour Size Symmetry IMF retraction NAC malposition	Regional autologous flaps, local tissue flaps, breast advancement flaps, periareolar of batwing mastopexy, distant flaps, fat grafting	Oncoplastic reduction, mastopexy, autoaugmentaion techniques, local and distant autologous flaps, local breast flaps, contralateral reduction, or mastopexy

Abbreviations: IMF, inframammary fold; NAC, nipple-areola complex.
From Losken A, Brown CA. How to Optimize Aesthetics for the Partial Mastectomy Patient. Aesthet Surg J. 2020;40(Suppl 2):S55-S65.

improve patient satisfaction and outcome, but if a healing complication should occur, this may delay the receipt of radiation. In addition, performing OPS as a single operation is preferable to performing a reduction on a breast that has already received radiation due to the risk of unpredictable healing and complications such as fat necrosis and seroma secondary to radiation.

Esthetics and Oncoplastic Breast Surgery

Objective data on oncoplastic breast esthetics are limited. Two large systematic reviews of oncoplastic breast procedures claim good cosmetic outcomes in 84% to 90% of patients.[14,15] In a prospective study of patients who underwent oncoplastic breast surgery (OBS), 94% of patients were "very satisfied" or "satisfied" with their cosmetic outcome, and 85% of patients rated their breasts as "nearly identical" or "slightly different," at 1 to 3 months postoperatively. Surgeon evaluation similarly categorized 89% of results as "good" or "excellent."[16] This work suggests good esthetic outcomes in the early postoperative period; however, long-term follow-up is lacking. Clough and colleagues used a three-member panel to evaluate results following OBS and reported good cosmesis based on symmetry, shape, nipple-areola complex (NAC), scars, and radiation changes in 88% and 82% of patients at postoperative years 2 and 5, respectively.[17] This work highlights the durability of esthetics in oncoplastic reduction procedures.

The use of latissimus dorsi flaps in immediate oncoplastic procedures yields favorable esthetic

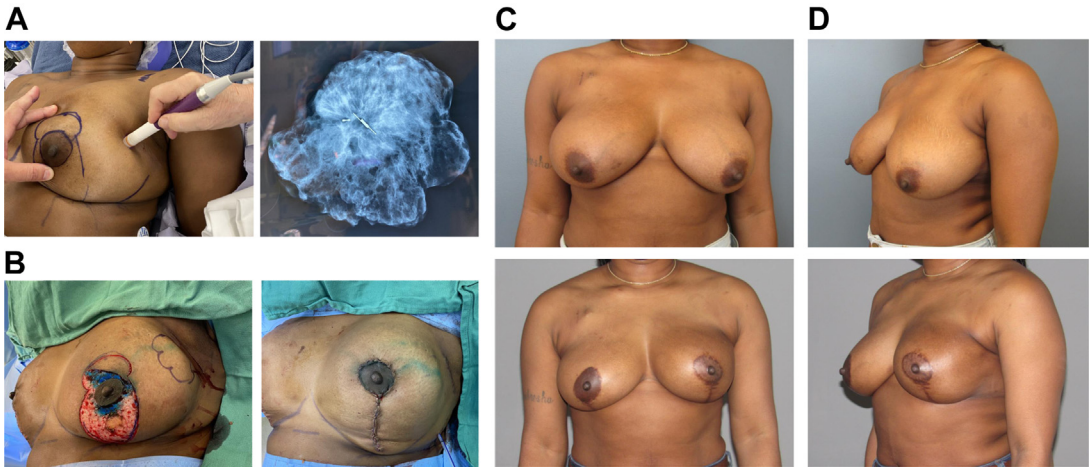

Fig. 1. A45-year-old patient with an early-stage left upper outer breast cancer. (*A*) Resection was performed using a Savi Scout reflector (Merit Medical) to localize the tumor. The reflector was placed preoperatively, and the lumpectomy was performed using a handheld device which localizes it using nonradioactive radar waves. The 54-g lumpectomy specimen with reflector is confirmed intraoperatively with imaging. (*B*) An extended superomedial auto-augmentation technique was used to fill the defect and an additional 20 g of tissue was removed for shaping. A contralateral mastopexy was performed removing 90 g for symmetry. (*C*) Top row is before surgery. Bottom row is result is shown 1 year following left whole-breast external beam radiation therapy.

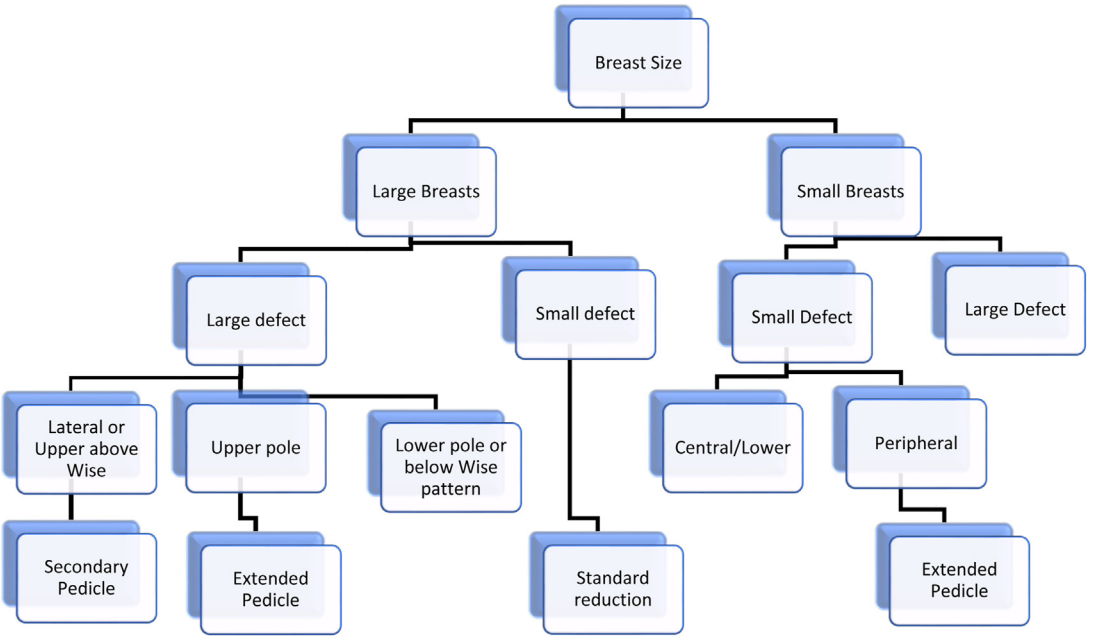

Fig. 2. Algorithm demonstrating oncoplastic techniques based on breast size, defect size, and defect location. *From* Losken A, Hart AM, Dutton JW, Broecker JS, Styblo TM, Carlson GW. The Expanded Use of Autoaugmentation Techniques in Oncoplastic Breast Surgery. *Plast Reconstr Surg*. 2018;141(1):10 to 19.

results according to patient-reported outcomes, clinical examinations, and panelist photographic assessment.[18,19] Hernanz and colleagues demonstrated good cosmetic outcomes by both patients and panelists, in which 81% of patients reported "excellent" outcomes and 19% reported "good" outcomes compared with a 44% "good" and a 56% "satisfactory" categorization by panelist assessment.[18] Although this study is limited in sample size (n = 16), it addresses revision rates for cosmesis. Out of 16 patients, 3 underwent revisions (1 for implant placement due to breast asymmetry and 2 for donor site scar revisions). Further research regarding the revision rate of oncoplastic procedures motivated by cosmetic as opposed to oncologic factors is warranted.

Veiga and colleagues prospectively compared patients who underwent oncoplastic breast surgery with traditional BCT without reconstruction via photographic assessment by a four-membered panel.[20] Esthetic elements evaluated included the following: volume, shape, breast location, inframammary fold, and scar. Superior scores were awarded to patients that underwent oncoplastic procedures. Of note, "volume" and "shape" were the two elements that received the lowest ratings in patients that underwent standard BCT without OPS. The esthetic result improved over time in the oncoplastic group, supporting the durability of OBS. In a comparison of OBS with "latissimus dorsi mini flap" and skin-sparing mastectomy with immediate latissimus flap reconstruction, the oncoplastic cohort received significantly higher panel scores compared with the mastectomy cohort (3.8–2.9, respectively).[21] It is important to consider that much of the beauty of plastic and reconstructive surgery is subjective, and although it is difficult to demonstrate esthetic improvement objectively, it has been shown that patient satisfaction can be an adequate proxy.

Radiation Delivery in Breast Conservation

Part and parcel of BCT is the delivery of radiation, with the purpose of reducing the risk of local breast cancer recurrence which has been studied extensively.[22] The traditional method of radiation delivery is whole-breast radiation via external beam initiated 6 weeks after the operation, provided the patient is completely healed at that time. Radiation can be delivered via conventional or hypofractionated method. The delivery of a boost of radiation to the tumor bed (area of lumpectomy) has been shown to reduce recurrence risk.[23] Patients who receive a radiation boost have been shown to experience increased pain, induration, fibrosis, and edema.[24,25] Because there are variations in tissue rearrangement and architecture of the breast with OPS, the feasibility of delivering boost radiation has been debated. However, Gladwish and colleagues determined

the ability to deliver boost radiation was not adversely affected comparing OPS with BCT.[26] Reliable placement of surgical clips to identify the resection bed is critical to accurately target boost radiation delivery.[27] Emerging technologies can help facilitate consistent identification of the resection cavity. Preliminary studies of three-dimensional bioabsorbable tissue markers placed at the time of surgery, including OPS, have shown promise with successful identification of the resection bed in preparation for boost radiation, in addition to low postoperative surgical site infection rates and preserved cosmetic outcomes.[28,29]

Accelerated partial breast irradiation (APBI) is a newer concept in comparison to whole-breast radiation. The risks of whole-breast radiation include damage to healthy breast tissue and toxicity to the heart and lungs. **Fig. 3** shows the progression of whole-breast radiation changes in a patient who underwent lumpectomy and oncoplastic reconstruction with reduction using inferior pedicle. Recurrence risk is highest at the site of the original tumor; therefore, delivery of radiation specifically to this area is the goal. ABPI can be delivered via brachytherapy, external beam radiotherapy, or intraoperative radiation therapy (IORT).[30] Few studies exist cataloging the effects of ABPI on the esthetic outcomes of OPS.

Brachytherapy for breast cancer treatment was introduced in the 1970s. It is performed under anesthesia by transcutaneous catheter insertion with subsequent radiation delivery through the catheters. Local tissue reactions at the catheter insertion sites are common, whereas this technique has been shown to be more protective of the thoracic organs. It is not done at many centers due to a steep learning curve and the invasive nature of the procedure.[31]

IORT is a single dose of radiation delivered at the time of surgery. The TARGIT-A trial showed no differences in oncologic outcomes between patients who received conventional whole-breast radiation and IORT.[32] Quality of life is improved and cost is reduced with the use of IORT as patients do not require repeat treatment visits. A study of 186 patients comparing whole-breast radiation to IORT in patients undergoing OPS showed a higher rate of fat necrosis and seroma with IORT, but no difference in cosmetic outcomes[33] (**Fig. 4**). Long-term breast fibrosis is not as common following IORT.

Recent research is focusing on identifying patients that would not benefit significantly from the receipt of radiation.[34] Although nomograms based on clinical and pathologic features were used to guide decision-making in the past, there are now

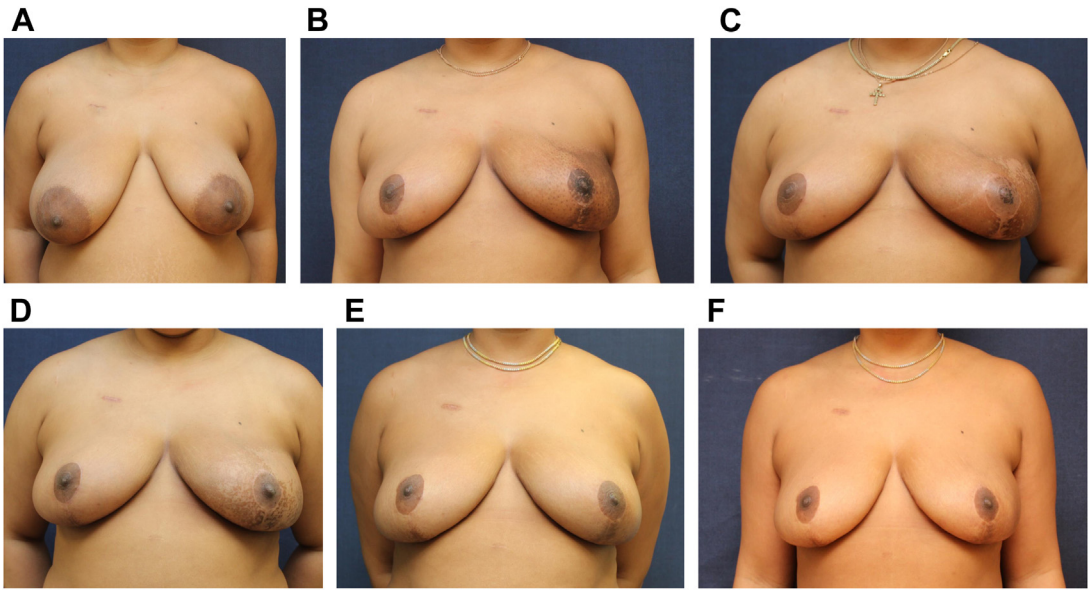

Fig. 3. A 37-year-old patient with macromastia and left invasive breast cancer who underwent neoadjuvant chemotherapy. (*A*) Before surgery. (*B*) After left lumpectomy with oncoplastic reduction using inferior pedicle and right symmetrizing reduction with inferior pedicle followed by completion of left whole-breast external beam radiation. Note hyperpigmentation of breast skin and loss of pigmentation of nipple-areolar complex. (*C*) Gradual recovery of left breast skin and nipple-areolar complex after radiation. (*D*) Continued recovery of left breast skin and nipple-areolar complex. (*E*) 1 year after surgery showing good symmetry and recovered pigmentation. (*F*) 2 years and 3 months after surgery showing stable result even with patient weight loss.

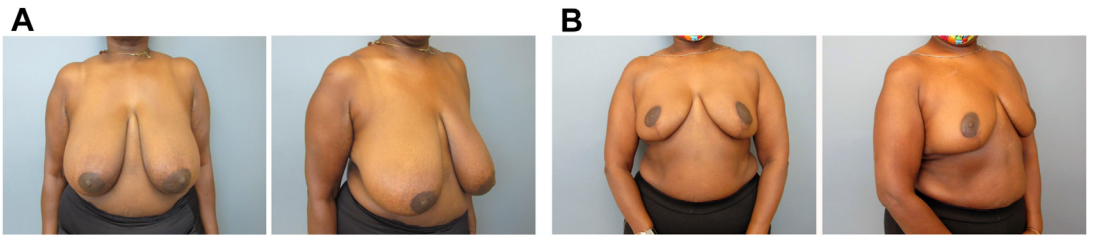

Fig. 4. A 59-year-old woman with right lower pole breast cancer who underwent a 75-g resection followed by IORT and a superomedial oncoplastic reduction with a total of 896 g resection. (*A*) Before surgery. She had a symmetrizing left reduction removing 920 g (*B*) Her result is shown at 1 year with good symmetry and minimal radiation fibrosis.

genomic molecular assays being used adjunctively to inform care. DCISionRT (PreludeDX, Laguna Hills, California) is a biomarker assay developed specifically for patients with ductal carcinoma in situ (DCIS), with the goal of de-escalating care and the need for radiation therapy in select patients.[35]

SAFETY OF ONCOPLASTIC SURGERY

OPS aims to optimize the final cosmetic appearance of the breast; however, breast esthetics are secondary in importance to oncologic efficacy and safety. Many oncoplastic techniques involve extensive rearrangement of local tissues, creation of additional incisions on the breast, or transposition of regional tissues into the tumor cavity. Legitimate concerns have been raised previously about how OPS techniques may affect overall risk of complications, subsequent delivery of adjuvant therapy, margin positivity, local recurrence, and survival. Patients should understand the risks and benefits of these techniques, and surgeons should have a shared understanding and agreement about the safety profile of these procedures. OPS is best done as a partnership between the ablative breast surgeon and the plastic surgeon, so that each can understand the goals and objectives of the other.

Surgical Complications Following Oncoplastic Breast Reconstruction

The overall complication rate following OPS ranges from 14% to 16% in systematic reviews and meta-analyses.[36,37] Common complications include delayed wound healing, fat necrosis, infection, nipple-areolar complex necrosis, seroma, and hematoma with individual incidence ranging from less than 1% to 4%.[36,38] Overall, the rate of complications requiring reoperation is likely around 3%.[37,39] In their NSQIP database analysis, Cil and colleagues identified multiple factors independently associated with a higher likelihood of developing a complication within 30 days of surgery including obesity, smoking, American Academy of Anesthesiologists category 3 or 4, diabetes, bleeding disorder, chronic obstructive pulmonary disease, and a longer operative time.[40] The presence of bleeding disorder had the highest association with postoperative complications (odds ratio 1.8). Although smoking and nicotine use in reconstructive operations adds both morbidity and cost to a health care system, the cost-effectiveness of performing an ipsilateral oncoplastic operation at the time of cancer excision is significant as there is a high risk of complications of delayed OPS on a radiated breast.[41,42]

Oncoplastic techniques may have a comparable or slightly lower rate of complications compared with standard breast conservation therapy alone. A meta-analysis performed by Losken and colleagues demonstrated a rate of complications of 15.5% in patients undergoing OPS, compared with 25.9% in patients undergoing standard BCT, though the average follow-up of patients in this analysis was longer for patients undergoing BCT alone (64 vs 37 months).[37] Cil and colleagues found that the 30-day rate of complications was similar between patients undergoing OPS (1.7%) versus standard BCT(1.9%).[40]

When complications occur, a significant delay in initiation of adjuvant therapy may result. Kapadia and colleagues retrospectively reviewed 118 patients who underwent OPS at a single institution.[43] Twenty-two percent of patients developed a complication including delayed wound healing, seroma, infection, and wound dehiscence. There was a statistically significant delay in initiation of radiation in patients who developed a complication versus those who did not (74 vs 54 days, $P < .001$). Similarly, in a retrospective review of 150 patients undergoing OPS published by Hillberg and colleagues, initiation of adjuvant radiotherapy was delayed in 8.2% of patients due to a postoperative complication, though the overall complication rate was relatively high in this study (37.5%).[44] In a recent retrospective review published by Deigni and colleagues, 429 patients

underwent OPS followed by either immediate contralateral symmetry procedure or symmetry procedure performed in a delayed fashion.[45] There was no significant difference in overall complications between the two groups. Although complications resulted in a delay in adjuvant therapy in 4.2% of patients overall, complications attributable to the contralateral symmetry procedure accounted for a delay in only 0.7% of patients. OPS in one study did not delay the time to delivery of adjuvant chemotherapy (29 days) when compared with lumpectomy alone (29.5 days).[46]

Local Recurrence, Disease Free, and Overall Survival

Given that OPS has only become a mainstream treatment option in the last two decades, long-term data about recurrence and survival are somewhat lacking. Numerous studies have demonstrated the significant impact that the oncoplastic approach has on improving margin control.[47,48] Margin positivity following partial mastectomy is known to predict local recurrence; however, tumor biology is also an important predictor of oncologic outcome. Oncoplastic surgical techniques extend the indications for breast conservation, including patients with larger and more aggressive tumors. In a retrospective cohort study of 1800 patients with breast cancer who underwent either standard breast conservation or oncoplastic breast conservation, Niinikoski and colleagues addressed the recurrence question.[49] After a median follow-up of 75 months, there was no difference in local recurrence-free survival between the two groups. Patients in the oncoplastic group had significantly larger tumors which were more often palpable and multifocal; in addition, their breast cancers had significantly higher histologic grade, T-stage, and lymph node involvement. There was no difference in positive margin rate between groups in this study. In a systematic review performed in 2016, De la Cruz and colleagues analyzed 6011 oncoplastic reconstruction patients with a mean follow-up of 50.5 months. Among 871 patients with at least 5 years follow-up, the rates of overall survival, disease-free survival, local recurrence, and distant recurrence were 93.4%, 85.4%, 6%, and 11.9%, respectively.[36] The investigators noted that these rates seem to correlate favorably with recurrence and survival rates after standard breast conservation, suggesting that surgical technique is not the primary predictor of oncologic outcome. The authors recently compared recurrence in 97 lumpectomy patients and 95 oncoplastic reduction patients with an average of 8 years follow-up and found that despite more advanced disease in the oncoplastic group there was a similar overall recurrence rate.[50] The multimodal treatment of breast cancer is such that more aggressive local control (as in a mastectomy) is not shown to reduce local/regional recurrence and that equivalent local/recurrence is often noted in the oncoplastic groups despite often having more aggressive cancers in those patients.[51]

In general, it seems that OPS techniques result in a generous resection and improved margin control, however, this does not translate into a recurrence benefit compared with standard breast conservation. Tumor recurrence, however, is not increased by the immediate reconstruction of these defects. OPS may be offered to patients with a broader range of tumor size and pathology, and the esthetic benefits of this approach do not seem to compromise cancer recurrence and survival.

Higher risk patients and more advanced disease are now not contraindicated when considering the oncoplastic approach (**Fig. 5**). Most studies have shown similar recurrence rates when compared with lumpectomy alone despite wider margins in the oncoplastic groups and higher risk patients (larger tumors, more human epidermal growth factor recepter (HER)2+ and triple negative, fewer estrogen recepter/progesterone recepter [ER/PR]+) in the oncoplastic groups. More aggressive local control with OPS might broaden the indications for breast conserving surgery (BCS), but the systemic and hormonal treatments have contributed to the recurrence safety in the oncoplastic approach. Although the true benefit on recurrence is difficult to demonstrate, there have been no studies showing it to be unsafe. The oncoplastic approach has allowed for more advanced disease to be treated with BCT. It has also found to be safe compared with mastectomy in tumors larger than 2 cm with similar overall survival rates (87.3 vs 87.1% at 10 years).[52] Several studies have shown similar locoregional recurrence and oncologic outcomes in large T2 tumors, locally advanced tumors, and DCIS when treated with oncoplastic breast conservation.[52–55] OPS has extended the indications even further with the technique being performed on patients with multifocal/multicentric tumors, extensive DCIS, or tumors greater than 5 cm with acceptable outcomes in a series of 39 patients.[56]

PATIENT SATISFACTION FOLLOWING ONCOPLASTIC SURGERY

The recent interest in patient-reported outcomes has generated some interesting data on patient satisfaction following OPS. Patient satisfaction

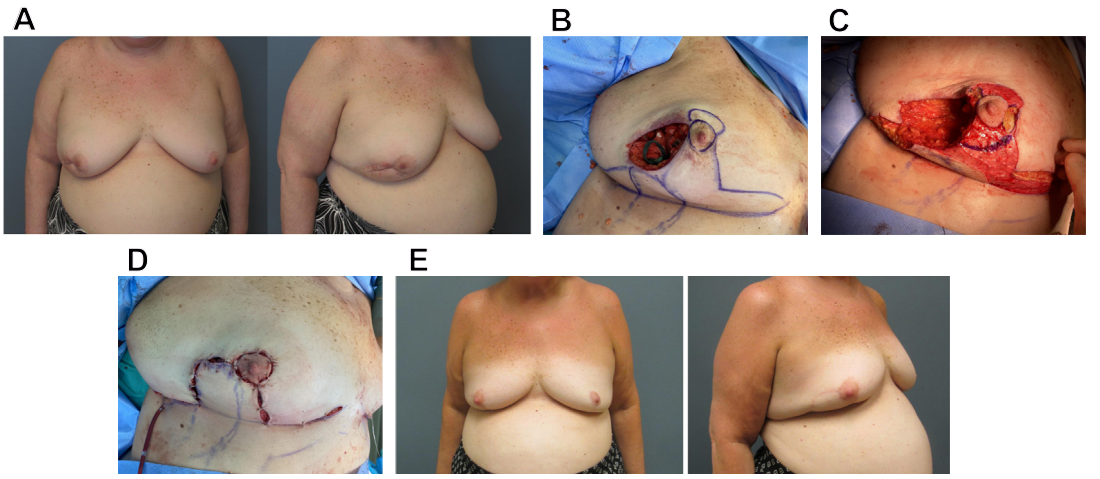

Fig. 5. A 56-year-old woman who underwent neoadjuvant chemotherapy for right ductal carcinoma in situ with comedonecrosis along with excisional biopsy. (*A*) Before surgery. (*B*) She underwent a 243-g quadrantectomy removing skin and breast tissue above the Wise pattern markings. (*C*) A superior pedicle was used for the nipple-areolar complex. (*D*) Skin was preserved from the lower pole of the breast to replace the resected skin. The symmetrizing left reduction removed 394 g of tissue. (*E*) Her result is shown 2 years following right whole-breast external beam radiation therapy with good symmetry.

following oncoplastic reconstruction has been shown to exceed satisfaction following standard breast conservation therapy, mastectomy alone, and mastectomy with reconstruction.[57–61] Rose and colleagues published the results of a survey study comparing patient-reported outcomes after OPS (107 patients) or standard breast conservation (657 patients).[57] Subjects were administered the Breast-Q validated questionnaire an average of 60.8 months from the time of surgery. The investigators found that despite having on average more advanced cancers, patients in the oncoplastic group had significantly higher self-reported psychosocial well-being. A comprehensive literature review of patient-reported outcome measures including Breast-Q was performed by Char and colleagues and found that OPS in general had the highest patient satisfaction scores among breast reconstructive choices.[61] Forty-three articles were included in this study looking at all forms of autologous tissue and implant-based reconstruction.

High levels of patient satisfaction have been reported after volume displacement techniques as well as volume replacement techniques.[58,62–64] In their survey of 624 patients undergoing a variety of different oncoplastic procedures, Rezai and colleagues demonstrated that there was no significant correlation between the method of oncologic reconstruction and the patient perception of the esthetic result.[65] Oncoplastic reconstruction with a reduction mammoplasty approach may have a particularly large impact on patient-reported quality of life after surgery. Losken and colleagues performed a retrospective review of 353 patients undergoing oncoplastic breast reconstruction with a breast reduction technique.[12] The average reduction weight of patients in this study was 545 g. The investigators used the Breast-Q validated questionnaire to show that, compared with preoperative baseline, women undergoing oncoplastic reduction had increased self-confidence, feelings of attractiveness, emotional health, and satisfaction with sex life over 1 year postoperatively.

There is some evidence that suggests that oncologic status may affect patient-reported outcomes more than surgical technique. In their study of 120 patients undergoing oncoplastic breast reconstruction with volume displacement techniques, Gardfjell and colleagues showed that lower patient satisfaction seemed to correlate with need for axillary dissection and neoadjuvant chemotherapy.[62] In their comparison of 379 patients undergoing OPS or breast conservation alone, Ojala and colleagues showed that larger tumor diameter, multifocality, and oncoplastic reconstruction were predictive of poor patient-reported esthetic result; however, in this study, patients undergoing oncoplastic reconstruction were more likely to have larger, multifocal tumors with lymph node involvement.[66]

Patients undergoing oncoplastic reconstruction have high levels of satisfaction with their appearance, mental well-being, and overall perception of health, comparing favorably to other surgical

breast cancer treatment modalities. This effect is somewhat expected and may be secondary to the attention to breast esthetics and symmetry that are the focus of oncoplastic techniques.

SUMMARY

Oncoplastic breast reconstruction is now a globally accepted option for treatment of breast cancer. This approach has a favorable safety profile and equivalent oncologic efficacy compared with standard breast conservation but has the major advantage of improved esthetic outcomes. Modern approaches include refinements in technique and a renewed focus on esthetics and outcomes including patient satisfaction and well-being. As more data are available demonstrating the safety of this approach, it is also being used on higher risk patients also with favorable outcomes.

CLINICS CARE POINTS

- In counseling patients about oncoplastic reconstruction in comparison with lumpectomy in the setting of breast-conserving therapy, plastic surgeons can inform patients that satisfaction with oncoplastic reconstruction is high and the risk of complications is low.
- When performing reconstruction of a lumpectomy defect, keep the principles of mastopexy, reduction, and auto-augmentation in mind to determine the best course of action.
- To avoid complications relating to radiation, it is advised to perform oncoplastic reconstruction before the receipt of radiation for breast-conserving therapy.
- To assess candidacy for oncoplastic reconstruction, plastic surgeons should consult with the breast surgical oncologist and radiation oncologist to formulate a multidisciplinary plan.

DISCLOSURE

Dr A Losken is a consultant for RTI surgical and has no relevant disclosures.

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