

## Immediate reconstruction following nipple-sparing mastectomy: one option for young breast cancer patients with early stage disease

Rachel L. Yang, Rachel R. Kelz, Brian J. Czerniecki

Department of Surgery, University of Pennsylvania, Philadelphia, PA, USA

### ABSTRACT

The article entitled “Application of immediate breast reconstruction with silicon prosthetic implantation following bilateral mammary gland excision in treatment of young patients with early breast cancer” published in *Journal of Thoracic Disease*, examined the oncologic and cosmetic outcomes of the aforementioned procedures. We aimed to describe the unique circumstances of young breast cancer patients with early stage disease and highlight the multitude of surgical treatment and reconstructive options available to these patients.

### KEY WORDS

Breast conservation; immediate breast reconstruction; nipple-sparing mastectomy; autologous breast reconstruction; prophylactic contralateral mastectomy

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We read with interest the article entitled “Application of immediate breast reconstruction with silicon prosthetic implantation following bilateral mammary gland excision in treatment of young patients with early breast cancer” published in *Journal of Thoracic Disease*. In this study, Tang *et al.* examined the oncologic and cosmetic results of nipple-sparing and skin-sparing mastectomy with contralateral prophylactic mastectomy followed by immediate implant reconstruction in young women with early stage breast cancer. Young breast cancer patients with early stage disease are certainly an important population to study, however, we would like to highlight the multitude of treatment options available to these patients, beyond those mentioned by the authors.

As the authors referenced, some studies have shown that younger age is associated with worse clinical outcomes for breast cancer, including higher risk of disease recurrence, metastasis, and death (1-4). However, other studies have shown that while young breast cancer patients do exhibit higher rates of disease recurrence, their overall survival is unchanged (5). While young breast cancer patients deserve special consideration, the conflicting data regarding clinical outcomes is not sufficient to

promote more radical surgical treatment in all young women. Nevertheless, it is known that specific breast cancer phenotypes, such as hormone receptor-negative cancers, have worse clinical outcomes and show benefit from contralateral prophylactic mastectomy (6,7). As such, contralateral prophylactic mastectomy might be more warranted in young women with these aggressive tumor phenotypes. With this in mind, we believe the current study would be strengthened by providing data regarding each patient’s tumor phenotype.

Young breast cancer patients tend to experience greater effects on their body image and sexuality following mastectomy (8,9), and thus breast reconstruction to provide acceptable cosmesis is important, if so desired by the patient. The authors, who report on the cosmetic outcomes following immediate implant-based reconstruction, hint at the aesthetic benefit of implant-based reconstruction following nipple-sparing and skin-sparing bilateral mastectomy. Several studies have shown that nipple-sparing and skin-sparing mastectomy is an oncologically safe option for women with early stage disease (10,11). Furthermore, it has been shown that bilateral mastectomy with implant reconstruction achieves lasting breast symmetry, which is known to be the most important factor affecting patient perspective regarding the aesthetics of their reconstructed breasts (12). Nonetheless, we believe that improved breast symmetry alone does not warrant the choice to encourage contralateral prophylactic mastectomy for young women.

In the current study of 21 women, the mean follow-up time was 30 months. The aesthetic results of the implant-based reconstructions were examined at both 6 and 12 months following the initial operation. Tang *et al.* found that no death,

Corresponding to: Brian J. Czerniecki, MD, PhD. Abramson Cancer Center, 3rd Floor West, 3400 Civic Center Blvd, Philadelphia, PA 19104, USA. Email: brian.czerniecki@uphs.upenn.edu.

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local recurrence or distant metastasis occurred. They also report that breast cosmesis, assessed by both clinicians and patients, had an excellent rate of 90%. Although these findings are encouraging, multiple studies have shown that local breast cancer recurrence and death from breast cancer most often occurs several years following initial treatment (1,5). Furthermore, a study by Clough *et al.* found that in patients who underwent immediate post-mastectomy implant reconstruction the cosmetic results deteriorated with time, with only 54% of patients having an acceptable cosmetic result at 5 years. As such, the current study was unable to capture such patients who experience poor oncologic or aesthetic outcomes several years later. With a study sample size of just 21 patients, the power to assess postoperative outcomes is quite limited. We believe the follow-up is too short to adequately address the oncologic and aesthetic outcomes measured, and thus a study with longer follow-up would be warranted.

When investigating the treatment of young women with breast cancer, the subject of germline BRCA mutations must not be overlooked. Studies have found that 15% to 30% of young breast cancer patients harbor BRCA gene mutations (13-15). While reading this article, we question if any of the subjects included in the study were BRCA mutation carriers. It would be pertinent for the authors to specify which subjects had hereditary breast cancer and which had sporadic tumors, if this information is known. It has been shown that development of contralateral breast cancer occurs much more frequently among mutation carriers (16). As such, a larger-scale study evaluating oncologic outcomes in young breast cancer patients may necessitate separate analyses for mutation carriers and non-mutation carriers, so to allow for a more clean assessment of the results.

The authors briefly mentioned the issue of racial disparities in the utilization of breast-conserving surgery. They report that Asian women are often “unlikely to meet demanding conditions for breast-conserving surgery”. As readers of the current article, we would like to inquire about the racial distribution of the subjects in this study, which was not outlined. Although it is true that some women are less likely candidates for breast conservation, it does not follow that these women should thus undergo more radical surgery such as prophylactic contralateral mastectomy. We want to bring attention to the range of treatment options available to all women, regardless of body habitus. While breast conservation surgery may not be immediately available to women with small breasts, neoadjuvant chemotherapy to reduce tumor size and can allow for a breast conserving operation at a later date (17). Additionally, for women who prefer a lumpectomy, oncoplastic surgery can be performed to maintain breast symmetry and cosmesis, even among women with smaller breasts (18,19).

The current study highlights the use of silicon implants

for young patients undergoing post-mastectomy breast reconstruction. However, this study does not explicate the potential benefit of autologous breast reconstruction for the young breast cancer patient. We believe autologous breast reconstruction is a valuable alternative to implant-based reconstruction for this patient population, and we encourage providers to discuss both procedural options with their patients. Not only is the cosmesis of autologous breast reconstruction often deemed superior to that of implant-based reconstruction (20), but it also relinquishes the need for multiple implant exchanges throughout one's lifetime. Since younger women will on average live more years following their initial operation, the burden of implant exchanges will be even greater for these patients. We believe that to provide comprehensive breast cancer care, providers must inform all women of their options for both autologous and implant-based reconstruction and educate them about both the advantages and disadvantages of each procedure.

In conclusion, we believe that for young breast cancer patients with early stage disease, there is a multitude of choices for surgical treatment and reconstruction, which ultimately should be selected based on the individual's preferences. For those women who elect for mastectomy, nipple-sparing and skin-sparing mastectomy is a safe option, if so desired by the patient. The choice to undergo contralateral prophylactic mastectomy is also a personal decision, yet one that should be influenced by tumor phenotype and not by a patient's age alone. Furthermore, for patients undergoing mastectomy, implant-based reconstruction remains a viable option, however, there are many known benefits of autologous reconstruction for young women. Finally, for those women who prefer breast conservation, breast size should not be a deterrent from discussing this feasible option, especially given the possibility of neoadjuvant chemotherapy. We thank the authors for sharing this study on the application of nipple-sparing and skin-sparing bilateral mastectomy with immediate implant reconstruction in young women with early-stage breast cancer, and hope we have educated the readers on the vast array of surgical treatment and reconstructive options available to each patient.

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