Breast-conserving surgery (BCS) has replaced mastectomy as the standard treatment for early breast cancers because it has the added advantage of preserving the breast while ensuring comparable oncological safety as mastectomy (1, 2, 3). However, larger tumor size (4), a greater volume of radiation and more complex tumor locations (5) is associated with suboptimal oncological outcomes. The need for satisfactory cosmetic results without compromising oncological safety has paved the way for oncoplastic surgery (OPS). OPS is an amalgamation of breast-conserving surgery and plastic surgery, making it an alternative treatment option for larger breast tumors that would otherwise be inexcised via mastectomy. OPS incorporates plastic surgery strategies such as decreasing scar visibility, volume replacement (removing the breast tumor and approximating the remaining tissue to reshape the breast using mastopexy techniques) and volume replacement (reconstructing a large volume of the breast, and recontouring it using autologous flaps or implants) to achieve better cosmetic outcomes (6). Literature comparing OPS with standard breast conservation has shown similar results in terms of recurrence rate and surgical margins (7, 8) and better cosmetic outcomes (8).

Oncoplastic breast conserving surgery is a new concept in Pakistan as there are few trained Oncoplastic Surgeons. So far, no study addressing the outcomes of OPS has been done in Pakistan. With this study, we sought to compare surgical outcomes of OPS to BCT in terms of recurrence rate and surgical margins.

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Methods

A retrospective multi-institutional cohort study was conducted from August 1st 2016 to August 31st 2018 and identified patients with newly diagnosed breast cancer Stage I through III who underwent OPS or BCT. Patient and tumor characteristics, volume of tumor resected, and margin positivity rates were evaluated. A tumor free margin was considered negative. We compared operative performance for those undergoing in vivo and 24-to-48 hour administrations rates of complications. Data was analyzed using SPSS version 22. Chi-square test was used to evaluate significance between variables. A P value of < 0.05 was considered significant.

Results

In our study, the difference in mean volume of tumor resected between the two groups was 56.4 cm3 (p < 0.001). Furthermore, the median tumor size in the OPS group was 3.2 cm greater than the BCT group. Although this result was statistically significant, the slight difference in size may not be clinically important when determining the type of procedure to be performed. Our results indicate that oncoplastic surgery has better oncological outcomes when compared to breast conservation surgery in terms of margin positivity and volume of tumor resected, which is in congruence with other studies (9, 10). A meta-analysis comparing OPS to BCT by Losken et al. demonstrated a positive margin rate of 12.3% in the OPS group, which was significantly lower than the 23.6% in the BCT group (11). In our study, positive margins and tumor recurrence were found in both the BCT (p = 0.003) and OPS group (p < 0.001) which was consistent with the results of Chauhan et al. OPS has a higher number of short term complications, with the most commonly reported rate being 25% (5-7). This may be due to the larger volume resection, longer operating time and greater skill required to perform the procedure. A subtotal OPS enables breast conservation with excision of larger volume of breast tissue, and no re-excision for larger tumors when compared to BCT.

Discussion

In our study, the difference in mean volume of tumor resected between the two groups was 56.4 cm3 (p < 0.001). Furthermore, the median tumor size in the OPS group was 3.2 cm greater than the BCT group. Although this result was statistically significant, the slight difference in size may not be clinically important when determining the type of procedure to be performed. Our results indicate that oncoplastic surgery has better oncological outcomes when compared to breast conservation surgery in terms of margin positivity and volume of tumor resected, which is in congruence with other studies (9, 10). A meta-analysis comparing OPS to BCT by Losken et al. demonstrated a positive margin rate of 12.3% in the OPS group, which was significantly lower than the 23.6% in the BCT group (11). In our study, positive margins and tumor recurrence were found in both the BCT (p = 0.003) and OPS group (p < 0.001) which was consistent with the results of Chauhan et al. OPS has a higher number of short term complications, with the most commonly reported rate being 25% (5-7). This may be due to the larger volume resection, longer operating time and greater skill required to perform the procedure. A subtotal OPS enables breast conservation with excision of larger volume of breast tissue, and no re-excision for larger tumors when compared to BCT.


