The Role of Oncoplastic Breast Surgery in Breast Cancer Treatment

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ABSTRACT

The aim of this study is to discuss indications, advantages, disadvantages, oncologic and aesthetic results of Oncoplastic Surgery (OBS). Pubmed and Medline database were searched for articles published between 1998 and 2014 for keywords: oncoplastic breast surgery, therapeutic mammoplasty, oncoplastic breast reduction, synchronous reconstructions. Role of OBS in breast cancer surgery, its aspects to be considered, its value and results have been interpreted. This technique has advantages by providing more extensive tumourectomy, yielding better aesthetic results compared with breast conserving surgery, allowing oncoplastic reduction in breast cancer patients with macromastia, with higher patient satisfaction and quality of life and by being inexpensive due to single session practice. As for its disadvantages are: re-excision is more difficult, risk for mastectomy is higher, it is depend on the Surgeon's experience, it has a risk for delay in adjuvant therapies and its requirement for additional imaging studies during management. Main indications are patients with small tumour / breast volume, macromastia, multifocality, procedures which can disrupt breast cosmesis such as surgeries for upper inner breast quadrant tumours. Contraindications are positive margin problems after wide excision, diffuse malign microcalcifications, inflammatory breast cancer, history of radiotherapy and patients' preferences. Despite low evidence level, Oncoplastic Breast Surgery seems to be both reliable and acceptable in terms of oncologic and aesthetic aspects. Oncoplastic Breast Surgery increase the application rate of breast conserving surgery by obviating practical limitations and improve the results of breast conserving surgery. Correct patient and technique choice in OBS is vital for optimization of post surgical

Keywords: Breast cancer, oncoplastic breast surgery, breast conserving surgery

Introduction

Breast cancer is the most common cancer in women throughout the world (1). Breast-conserving surgery (BCS) and radiotherapy (RT) have been shown to provide similar local control and survival rates to radical procedures in the surgical treatment of early breast cancer (2). The primary aim of BCS is preservation of the breast while adhering to oncologic principles, with the secondary objective to provide breast aesthetics. In recent years, with advances in early detection and adjuvant therapy life expectancy has prolonged in breast cancer prolonged and quality of life issues have gained importance (3).

There are some problems in terms of oncologic and aesthetic perspective in BCS. Despite advances in surgical techniques, positive margin rates in breast cancer following BCS is reported as 20-30% (4,5). The rate of aesthetic problems in conservative surgery that are not amenable for surgical correction have been reported as 30% (6). In the past, breast cancer in women with macromastia was accepted as partial contraindication to BCS. There were problems related to dose distribution of RT following lumpectomy in women with large breasts (7). These shortcomings resulted in low patient satisfaction and poor quality of life (6,8). It is reported that up to 40% of women with breast cancer have large breasts (9). In a breast cancer patient with large breasts, lumpectomy with simultaneous bilateral reduction mammoplasty were performed as a solution for problems related to BCS in patients with macromastia in 1994, and oncoplastic breast surgery (OBS) was defined for the first time (10). Regarding the use of breast reconstructive techniques, simultaneous applications have been shown to provide a better quality of life than delayed procedures (11).

Currently, the concept of OBS is used to define simultaneous application of lumpectomy and reconstructive techniques in patients undergoing breast-conserving surgery for cancer. OBS helps in local control with wider excision without compromising oncologic principles, and provides esthetic closure of the formed glandular defect by plastic techniques. The debate on the role and importance of OBS application continues.

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Figure 1. An early stage breast cancer in a patient with macromastia, centrally located with nipple retraction. Grisotti flap and oncoplastic reduction was planned. Pre-operative planning and drawings

The aim of our study was to evaluate the indications, contraindications, advantages, disadvantages, technical features, and oncologic and aesthetic results of OBS in breast cancer treatment together with recent data.

Material and Methods

PubMed and Medline Internet information sources were searched for 'breast cancer, oncoplastic breast surgery, therapeutic mammoplasty, oncoplastic breast reduction, simultaneous breast reconstruction, partial breast reconstruction' keywords between January 1998 and February 2104. Out of the results, 78 publications appropriate to the purpose of our study were selected. Concurrent non-BCS breast reconstructions and non-English language publications were excluded. The role, importance, and results of OBS in conserving surgery were evaluated.

Current Status and Oncologic Breast Reconstructions; Due to the positive results obtained in the surgical treatment of breast cancer, the prevalence of this technique is increasing throughout the world and our country. There was an approximately 2.3-fold increase in OBS publications over the last five years (12). The rate of OBS among general surgeons who practice breast cancer surgery in Turkey was reported as 49% (rarely 24%, sometimes 16%, often and always: 9%) (13). It was emphasized that patient preference and the technical possibilities of the institutions they are working in had an effect in the application of the technique (13).

In the majority of patients with breast cancer, BCS is applied without any oncological and aesthetic problem. In some cases, due to the size and location of the tumor, undesired esthetic results can be encountered when attempting to remove the tumor with safe borders. The main part of the esthetic problem after BCS is caused by scar contraction and glandular defects (6). Oncoplastic techniques are used for the repair of resulting glandular defects. The contralateral breast can be also included in the operation to provide breast symmetry. Oncologic breast reconstructions can be classified depending on the oncological procedure performed and the timing of breast reconstruction. There is no consensus on either the classification to be used in defects that can occur in breast cancer surgery or the ideal OBS technique to be used for correction of this problem (14,15). Although many authors have made some algorithm suggestions on this subject, most breast cen-

Figure 2. Clinical T2NoMo patient, sentinel lymph node sampling performed with blue dye. Incision according to planned procedure and preparation of the false nipple

ter use algorithms based on their own experience. The current, widely used OBS techniques are divided in two main groups as simultaneous volume displacement and breast volume replacement.

a- Breast volume displacement; This method is closure of the breast defect that resulted from tumor resection with glandular or dermoglandular flaps prepared within the breast. Although many different techniques have been defined, it basically includes defining the appropriate incision location, creation of a flap consisting of subcutaneous tissue, nipple and areola complex (NAC), preparation of glandular flap and reshaping the breast (15,16).

- Incision choice is important in terms of aesthetics and oncology. In certain clinical situations, skin incisions such as grisotti flap, J-mammoplasty, round block, bat-wing incision have been defined to allow easier resection of breast tumor (17-19). In the Grisotti technique, central resection and false nipple is created from breast skin for subareolar tumors or those with nipple involvement (19). Figures 1-7 demonstrate grisotti flap application in centrally located breast cancer. Round block technique is recommended for moderate breast ptosis or tumors in the periareolar areas in medium sized breasts (18). Bat-wing incision is usually defined for the excision of upper quadrant and lateral located breast tumors (17). Incisions should not be at the upper part of the breast, and should remain especially in bra field if possible.

- Glandular advancement flaps, are used to close the defect created by resection of a tumor located in any quadrant without resection of the skin of the breast usually with parenchyma (17,20). This technique is efficient in correction of small defects, especially preventing dimpling after lumpectomy.

- Radial Technique, is often used in breast tumors located laterally or medially. Skin resection can be made. The excised area is supported by glandular flap and/or subcutaneous tissue (21).

- Oncoplastic breast reduction is the first defined, and probably the most widely used OBS technique. It is used to improve oncological and functional results in women with large breasts. Lower, upper inner, upper outer pedicle flap containing NAC are prepared according to tumor location. After preparation of the flap containing NAC, significant amount of breast tissue and skin are removed with wide excision of the tumor. The similar procedure is done in the contralateral breast (22,23). This procedure provides breast symmetry that is

Figure 3. Wide excision of the tumor with areola, and breast reduction

Figure 4. Clipping the tumor bed for radiotherapy

one of the most important criteria of breast aesthetics in breast cancer patients with medium and large sized breasts. During oncoplastic reduction, the breast containing the tumor is shaped 10% greater than the other breast due to shrinkage after RT (24).

-Mastopexy is used in central, upper and lower quadrant tumors in pendulous or medium-sized breast. The NAC is raised and repositioned in the midline without excision of too much breast and skin

Figure 5. Localization of the false nipple and skin closure

Figure 6. View of the breast on the 4th postoperative day

tissue. The same process is applied to the contralateral breast for breast symmetry (15,25).

b-Breast volume filling; is filling the breast defect with the patient's own tissues from areas away from the breast. It is used in patients with large tumor/breast volume ratio, those with deficient breast volume after resection, and those with significant breast defect. With this approach, myo-cutaneous, myo-subcutaneous tissue or fat tissue is transferred to the defect site.

-Latissimus Dorsi (LD) myocutaneous flap is the most common method used to fill the breast defect in women with small breasts. The LD muscle is moved along together with the skin above. The skin defect is also replaced. A similar technique, myosubcutaneous LD flap (mini LD flap) fills in the defect with LD flap, the skin is not transferred in this technique (5,26). Endoscopic LD mini flap applications are being developed with access sites from the breast and axilla (27). It is frequently used for defects in the upper, inner and lower outer quadrants.

-Subaxillary fat pad flap is used especially in closing large defects resulting from excision of tumors located in the upper and lower outer quadrant. The breast is supported laterally with subaxillary fat tissue (15,26).

-Transfer of free tissues with either a pedicle or microvascular anastomosis that aim to fill the volume from areas away from the breast for partial breast reconstruction have also been defined. Free flaps are quite popular in recent years. OBS techniques such as transverse rec-

Figure 7. View of the breast on the 17th postoperative day

tus abdominus myocutaneous (TRAM) flap, deep internal epigastric perforator flap, superficial gluteal artery perforator flap, omental flap etc. have been defined (28,29). Larger breast defects can be closed with this method.

Definition of Breast in Terms of OBS; three main issues physicians and patients are focused on after the diagnosis of breast cancer are survival, oncologic local control and quality of life. Oncoplastic techniques improve the last two main subjects. The three important factors in the decision of OBS are: breast, tumor, and technique. Preoperative assessment should include the size of the breast (small, medium, large, huge), the shape of the breast (ptotic), structure (parenchymatous breast, lipomatous breast etc.), previous operations (biopsies, previous surgery), systemic additional morbidity risks (diabetes mellitus (DM), obesity, smoking habits, etc.) and requests and preferences of the patient. The importance of measurement of breast size, planning of removed and remaining breast volume in patients with large breasts, and selection of flaps including NAC have been shown (30). Since the breast will rise on the anterior chest wall following lumpectomy and RT in ptotic breasts, the opposite breast may need to be elevated for breast symmetry. During OBS, previous biopsy scar and related parenchymal area should also be removed. Obesity, diabetes mellitus and smoking increase the rate of postoperative complications (31,32). These factors cause delay in wound healing and perfusion problems in the flap, especially in those containing NAC. Tobacco use should be discontinued 6-8 weeks prior to OBS procedures with NAC containing flap oncoplastic reduction and volume expansion. Despite oncological and aesthetic benefits, patient preference regarding simultaneous OBS varies with age, race, education and socio-economic status (33). Potential oncologic and aesthetic risks should be explained to the patient in an appropriate and unbiased manner. This approach will significantly affect post-procedure results. The size of the tumor, tumor/breast volume ratio, tumor location (upper, inner quadrant), progression rate (inflammatory carcinoma), stage of the cancer, and the size of the area to be excised with the tumor should be evaluated. The choice of oncoplastic technique according to these breast and tumor

related characteristics are debated (15,16). The addition of the skills and preferences of surgeons make the decision even more complex. Preoperative decision on BCS and OBS should be planned individually for each patient.

OBS Advantages

Oncoplastic surgery provides excision of breast tumor with wider limits and in a more secure way (16). It has been shown that using this technique, especially in cases with removal of large tumors and locally advanced breast cancer, improves outcomes (34,35). The meta-analysis by Losken that compared oncoplastic applications with BCS in breast cancer, reported the average breast tissue removed as 64 gr. in BCS and as 184-249 gr. in those with oncoplastic surgery. In addition, the positive margin rate was 20.6% in the BCS group as compared to 12.3% in the OBS group (12). In addition to improving cosmetic results in breast cancer surgery, OBS reduces oncological problems associated with BCS. This status is extremely valuable in the evolution of breast cancer surgical treatment from mastectomy to BCS, and then to OBS.

Mastectomy rate is decreased and organ loss is reduced by application of OBS techniques (36,37). The implementation of these techniques avoids mastectomy and the associated wider reconstructive methods as well as additional complications related to these procedures (38). Safe oncologic and acceptable aesthetic results are provided especially in centrally located breast tumors (39,40). Previously, NAC involvement or proximity was accepted as a relative contraindication for BCS. These limitations were overcome with the development of oncoplastic techniques such as grisotti flap. Also with this method, if breast reduction is planned, it can be performed easily by the surgeon.

Breast aesthetics that identifies and complements the female body is important. OBS improves aesthetic results in the surgical treatment of breast cancer (12,18,41). BCS allows conservation of the breast in cancer surgery, while OBS that was defined to solve aesthetic problems of the protected breast reduces these problems up to 7% (42). The results of aesthetic evaluation were found to have higher rates of good and excellent results with the use of oncoplastic techniques (12).

Wide lumpectomy with bilateral breast reduction (oncoplastic breast reduction) is applied in breast cancer patients with macromastia. Problems related to diagnosis, surgical treatment and radiotherapy applications of breast cancer in women with large breasts are well-known (7,24). The tumor field cannot be fully determined in these patients and higher doses of RT are required, which result in sharpening of breast boundaries due to extensive fibrosis and elevation of the breast mound on the chest wall, thus, breast aesthetics is impaired (43-45). That is why previously macromastia in breast cancer patients was considered as a relative contraindication to BCS. Macromastia leads to chronic shoulder, neck, back and breast pain, recurrent rash under the breast and severe restrictions in movement (46). Over time, the symptoms of macromastia are neglected by patients, and chronic problems are often overlooked. Wider resection of the tumor is possible with OBS, and the excessive breast tissue is removed. The similar procedure is applied in the opposite breast. After pathological evaluation of the contralateral breast and breast symmetry is provided. In this patient group, symptoms of macromastia are significantly decreased with oncoplastic reduction, and functional results are improved (47,48).

Worse aesthetic results and higher complication rates have been reported in OBS performed after RT as compared to simultaneous techniques (37). Simultaneous application of oncoplastic procedures

in breast cancer patients has been shown to provide better patient satisfaction than delayed applications (11). Therefore, the most appropriate correction time of breast defects is simultaneous procedures in selected patients.

Breast aesthetics, which is valuable for women's self-confidence and physical attractiveness, is protected with a single operation without increasing psychological burden due to cancer. Single-session procedures reduce the workload of surgeons, more importantly, increase the quality of life in breast cancer patients. Single-session practices are also economically advantageous. In a study, it was reported that delayed breast reconstruction was 62% more expensive as compared to simultaneous reconstruction (49). Economic advantages of OBS are also important, in a time where health financing and savings are discussed more often.

It has been shown many times that OBS can be safely used for both oncologic and aesthetic results in the surgical treatment of locally advanced breast cancer (50-52). Application of OBS can be advantageous in terms of oncologic and aesthetic results if removal of a large breast mass is considered in patients who are less responsive to neoadjuvant chemotherapy.

Disadvantages

Additional resections in patients requiring re-excision due to postoperatively identified positive margins on pathological evaluation cause a problem due to dermo-glandular flaps. Positive margin rate in OBS practices are reported as 7-12% (12,14). Risk factors for positive margins are young patients, large tumor size and presence of in situ cancer (14,34). It has been shown that mammographic and pathologic evaluation of the tissue removed during surgery decrease problems related to margins (14,53). Diligent implementation of these methods in OBS cases will help in achieving higher rates of negative surgical margins. Although re-excision can be an option in margin positivity, some cases may require mastectomy. Mastectomy risk should be shared with the patient.

Due to high survival rates in breast cancer, increased patient awareness and patient demand, there is increasing interest in aesthetics and OBS applications. Every surgeon dealing with breast surgery should be familiar these techniques and practice them. OBS technique in practice often depends on the skill and experience of the surgeon. The availability of a team of supportive health personnel who can assist in patient communication and patient care in both pre- and postoperative period will contribute positively to the process.

The aesthetic expectations of patients undergoing oncoplastic techniques have been reported to be higher than BCS (54). Poor cosmetic result rate in OBS application has been reported as 5-15% (45,47). Patients should be informed on possible problems such as scar and asymmetry, as well as the rare NAC necrosis. They should be informed about requirements for secondary breast correction surgery. It should be emphasized that the aim of OBS is not perfect breast shape but the correction of possible breast defects.

The operation time of OBS, including oncoplastic reduction and volume expansion, lasts longer than classic BCS. OBS has more complications than conventional BCS (12). The complication rate rises to 20-25% especially in oncoplastic reduction (12,24). Complication after oncoplastic reduction may cause a delay in adjuvant treatment (43,55). Clough KB et al. reported the rate of patients with delay in adjuvant treatment due to wound healing problems as 4% (56). The experience of the surgeon has a strategic importance in patient and technique selection.

During the long oncologic follow-up, breast magnetic resonance imaging (MRI) and breast biopsy may be required in addition to mammographic evaluation in patients with OBS (especially oncoplastic breast reduction) (43). Patients with oncoplastic reduction are those who require extremely careful follow-up.

Despite increased interest in recent years, the majority of the oncoplastic literature consists of case series with short follow-up, with an evidence level of 3.4. Proponents of this technique have ethical reservations about the patient group to be compared with patients who are predicted to have defects due to BCS and who will require correction (34). Almost every OBS publication emphasizes that OBS procedures should not preclude oncologic procedures (12,14,53). Absolute indications of OBS and technical algorithms have not yet been identified by consensus. Long-term oncologic and aesthetic follow-up data have not been published. The long term results are required to prove that this operation aiming at improving aesthetic results without compromising oncologic aspects actually meet these expectations. An important criticism in terms of RT can be overcome by marking the tumor bed with metal clips for irradiation of the correct area with the accurate dose. The literature generally lacks specification whether the tumor bed was clipped or not for RT (55). The question on who should perform OBS is still being debated. The approaches on this issue vary significantly. Given that the breast is an aesthetic organ, oncoplastic techniques may be required in all breast cancer operations. Currently, breast surgeons dealing with breast cancer surgery are performing most OBS. It has been demonstrated that surgeons can perform many OBS applications without the need for a plastic surgeon, by learning basic plastic techniques (57). Surgeons may correct most breast defects by learning the required techniques in plastic surgery during breast cancer surgery that they have already been doing. Advantages and disadvantages of OBS are summarized in Table 1.

Indications and Contraindications to OBS

The main indication is breast cancer patients with possible breast deformity following standard BCS. Removal of more than 20% of breast volume leads to significant deterioration in breast aesthetics (56). Patients with multi-focal tumors, macromastia, large tumor/breast volume, and are low responsive to neoadjuvant therapy are potential candidates for OBS. OBS techniques are more frequently used in central, upper and inner quadrant tumors due to aesthetic problems (17,58,59). Relief of macromastia symptoms and surgical treatment of cancer are provided in a single session in patients with symptomatic macromastia and breast cancer (60). Patient and physician preference are also indications for OBS.

Oncoplastic surgery is contraindicated in cases that require mastectomy due to margin positivity. Large T4 tumors, multicentric tumors, patients with diffuse malignant microcalcifications fall into this category (34,60,61). OBS techniques should not be applied in inflammatory breast cancer. OBS is not recommended when there is not enough remaining breast tissue after tumor resection (18). It should not be used in patients with previous history of RT, or those in whom RT cannot be administered. In patients with diabetes and heavy smoking, especially cases requiring pedicle flap, may not be eligible for OBS. Correction of these risk factors require time. In addition, preference of the patient and the surgeon's experience are also contraindications. Oncologic outcomes may deteriorate with insufficient experience in oncoplastic reduction and volume expansion methods. Surgical poor technique often causes skin scars and glandular defects.

Table 1. Advantages and disadvantages of Oncoplastic Breast Surgery as compared to Breast Conserving Surgery

Oncoplastic Breast Surgery as compared to Breast Conserving Surgery	
Advantages	Disadvantages
Wider tumorectomy	Difficulty in re-excision
Lower rate of margin positivity	Dependent on skills and expertise of the surgeon
Better local control	High complication rate
Better aesthetic outcome	Delay in adjuvant treatment
Lower mastectomy rate	Requirement for correction
Ease of radiotherapy in the reduced breast	Longer operation time
Obtaining breast symmetry	Requirement for additional imaging during follow-up
Single session	High risk of mastectomy in case of margin positivity
Better quality of life	
Higher patient satisfaction	
Sampling of the contralateral breast	
Cheaper than delayed reconstruction	

The implementation of OBS techniques in in situ breast cancer is controversial. It is stated that OBS should not be performed due to the diffuse pattern of in situ cancer, its multifocality, intermittent duct involvement, common micro-calcifications and the resultant oncological margin safety problems (12,53,62). It is also advocated that, with mammographic control of the removed tissue and margin control with frozen section evaluation, the resulting large defect can be replaced by OBS techniques (18,24,34). In this way, more extensive tissue can be removed while avoiding possible breast deformity. Preoperative careful clinical assessment of the patient, applying oncologic principles in the operation, and with patient consent, OBS can be applied to in situ breast cancer with expectation of breast deformity. OBS indications and contraindications are summarized in Table 2.

Oncologic and Esthetic Evaluation

Improving breast aesthetic without compromising basic oncological principles was the starting point of OBS. In their meta-analysis, Losken et al. reported the rate of margin positivity as 12.3% for OBS, 20.6% for BCS, and the local recurrence rate as 3.6-4.7% for OBS and 7% for BCS (12). In another study comparing patients with BCS and OBS, the tumor size were reported as 17mm and 24mm, surgical margins as 6 mm and 14 mm, and re-excision rates as 29% and 5.4%, respectively. It was concluded that the oncoplastic approach improved oncologic outcomes without increasing the complication rate (34). Schaverin MV et al. (62) reported that oncoplastic techniques reduce margin safety issues and provided high satisfaction in patients with multifocal and large tumors. As a result of all these efforts, OBS not only improves aesthetic and patient satisfaction outcomes, but also oncologic outcomes of breast cancer surgery, especially in patients with multifocal and large tumors. The use of oncoplastic methods provides better margin control by removal of larger tumors. Rietjens et al. reported 93% survival rate at 74 months follow-up of 148 patients (63). The 15-20 year long-term local recurrence and survival data of oncoplastic procedures in breast cancer have not been published so far. The surgical treatment of breast cancer according to molecular subtypes, and choice of OBS technique remains unclear. Luminal B / HER2 positivity, triple negative subtype and body mass index higher than 25 were shown to be risk factors for local recurrence (64). Despite all these risk factors, potential application of these techniques can be considered when required in all patients eligible for BCS.

OBS in breast cancer surgery is known to improve quality of life by improving aesthetic results (3,65). There is no consensus on methods or timing of postoperative breast aesthetic evaluation (66). Aesthetic evaluation methods by the patient, surgeon or panel consisting of 3-5 person have been described (53,66). Although the patient's perception and aesthetic evaluation are important, successful methods such as BREAST Q have been developed for objective aesthetic evaluation (67). However, most of the current literature does not consist of objective aesthetic evaluation data. Postoperative good and/or excellent results of OBS were reported as 84-89% (61). Fitoussi et al. reported the cosmetic results of patient satisfaction rate as 98% at postoperative 1 year, and as 90% at 5 years (68). Development of more fibrosis in large or heavy breasts, especially after RT, leads to breast reduction and as a result reduces esthetic appreciation rate in 5 years (69). Over time, the high aesthetic appreciation rate in the first period declines due to RT, weight gain and so on. In spite of all these, the benefits of oncoplastic reduction method in these cases are obvious.

Postoperative Approach; It has been reported that OBS does not influence the selection and timing of postoperative adjuvant therapy (41,70,71). It was demonstrated that complications in patients with oncoplastic reduction or volume expansion did not delay adjuvant treatment (70,71,72). In a similar group of patients, there are publications stating that serious complications such as flap nutritional problems resulted in a few weeks of delay in adjuvant treatment (55,73). This state may compromise oncological local control. The surgical team should be careful about possible complications particularly during the learning period.

The importance of additional RT dose to the tumor bed in local control of breast cancer is well-known (74). In patients with OBS, the position of the tumor changes due to glandular flaps, changes in NAC position, and breast elevation in the anterior chest wall. Marking the tumor bed with 4-5 pieces of metal clips is extremely strategic in RT process. Recent data suggest that the clips may be displaced in upto 50% of patients with oncoplastic methods, and thus the actual tumor bed receives insufficient RT to provide local control, or a higher dose of radiation will be required since the actual site of the tumor cannot be fully determined leading to more fibrosis and bad cosmetics

Table 2. Indications and contraindications of Oncoplastic Breast Surgery

Oncoplastic Breast Surgery	
Indications	Contraindications
More than 20% volume excision	Positive margin requiring mastectomy
Large tumor size	Insufficient remaining breast volume
Central, upper and inner quadrant tumors	Diffuse microcalcifications
Presence of macromastia	Multicentric tumor?
Low response to NAC in locally advanced cancer	Inflammatory breast cancer
In situ cancer presence?	Previous radiotherapy
Multifocal	Concomitant disease (Diabetes, smoking)
Patient and surgeon preference	Patient and surgeon preference

(55.75). Therefore, it is recommended that a multidisciplinary team including the radiotherapist should preoperatively evaluate patients undergoing OBS. The benefits of sharing the oncoplastic operation and location of the tumor with shared radiotherapists have been shown (55). Oncologic principles must always be primary.

OBS does not affect the selection and type of CT. The impact of CT on the aesthetic results of OBS are not clear (39).

It has been reported that glandular flaps and small-scale displacements do not pose a significant problem in follow-up of patients with breast cancer (71.76). It has been reported that mammography may be adequate for monitoring patients with oncoplastic flap, however, failure of mammography and requirement for breast MRI was emphasized in patients with oncoplastic reduction (77). Careless surgical technique and complications can add to this negative situation. Additional biopsy may be required in the diagnosis of lesions such as postoperative fat necrosis and fibrosis (78).

Conclusion

OBS, despite the low evidence level in relevant publications, is both reliable and acceptable in terms of oncology and aesthetics. This technique provides more than aesthetic correction, which was the first starting point, by reducing oncological problems. Together with its current indications and benefits, it increases the application rate of BCS. Selecting the proper patient and technique is extremely important for the optimization of postoperative period in all applications. Single-session procedure provides significant economic benefits due to ease of application. Reports on long-term results and prospective randomized trials can eliminate reservations on OBS.

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