

# Oncoplastic Breast Conserving Surgery: Aesthetic Satisfaction and Oncological Outcomes

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## ABSTRACT

**Objective:** Oncoplastic breast conserving surgery (BCS) involves radical excision of tumors while maintaining the natural breast contours. In this study, we present the results of the oncoplastic BCS surgeries performed in our clinic.

**Material and Methods:** 13 breast cancer patients who had undergone oncoplastic BCS were included in this retrospective study. Postoperative photographs and retrospective chart reviews were used to evaluate the results. Aesthetic satisfaction level was verbally obtained from the patients.

**Results:** Oncoplastic BCS was performed using superomedial, superolateral, superior and inferior pedicles. All the patients were highly satisfied with the final aesthetic results and tumor free at the postoperative 12 months.

**Conclusion:** Oncoplastic BCS can achieve favorable results regarding the final aesthetic appearance and tumor control.

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

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## Introduction

Oncoplastic breast conserving surgery (BCS) involves maintaining aesthetically natural breast contour while performing the radical resection of the tumor in patients with breast cancer (1-3). This principle could be adapted to all breast cancer patients except the ones requiring total mastectomy.

Breast-conserving surgery together with radiotherapy has been accepted as standard treatment for early stages of breast cancer (4-6). Despite successful adaptation of conventional BCS in the treatment of early-stage breast cancer in the last few decades, it has been the case that many cases ended up in aesthetical non-pleasing results (7, 8). The incidence of these cases has been reported up to 30% in some of the series. Poor aesthetic results have been associated with central-medial tumor location, large tumor size, and radiotherapy (9-11).

Oncoplastic BCS can be defined as the combination of reduction mammoplasty and mastopexy techniques with breast conserving surgery. This combination can effectively reduce the number of aesthetically displeasing results of BCS in patients with macromastia while maintaining adequate margin for the tumor excision (12, 13). In recent studies, oncological safety of this approach has been found comparable to conventional BCS (14-16). In this paper, we introduce our results with therapeutic mammoplasty.

## Materials and Methods

13 patients operated between 2014 and 2015 were included in the study. Informed consents were obtained from all the patients. Ethical committee approval was not required. Mean age of the patients was 49 (36-65). All the patients had macromastia and were exclusively chosen for oncoplastic BCS. 53% of the patient was obese, and 30% of the patients had diabetes. Tumors were located in upper medial

Table 1: Descriptive analysis of the results

Clinical Parameters	
<b>Patient characteristics</b>	
Mean age	49 (36-65)
Obesity	53.8% (n=7)
Diabetes Mellitus	30.7% (n=4)
<b>Tumor location</b>	
Upper medial	15.3% (n=2)
Inferior	46.1% (n=6)
Lateral	30.7% (n=4)
Central	7.6% (n=1)
<b>Tumor size</b>	
T1	23% (n=3)
T2	76.9% (n=10)
<b>Lymph node involvement</b>	
N0	92% (n=12)
N1	7.6% (n=1)
<b>Distant metastasis</b>	
M1	0% (n=0)
<b>Surgical Procedure</b>	
Bilateral oncoplastic breast reduction	92% (n=12)
One sided oncoplastic breast reduction	8% (n=1)
<b>Complications</b>	
Nipple necrosis	0% (n=0)
Wound dehiscence	8% (n=1)
Postoperative debridement	8% (n=1)
<b>Postoperative follow-up 12 months after the surgery</b>	
Patient aesthetic satisfaction-high	100% (n=13)
Tumor relapse	0% (n=0)

(n=2), inferior (n=6), lateral (n=4) and central (n=1) sections of the breast. Postoperative photographs and chart reviews were used to evaluate the results. Aesthetic satisfaction level survey was verbally obtained from the patients (0: Not satisfied, 1: Low, 2: Moderate, 3: High rate of satisfaction). All clinical parameters are presented in Table 1.

**Statistical analysis**

Descriptive analysis was performed using GraphPad Prism software (GraphPad Software, Inc. La Jolla, CA 92037 USA).

**Results**

Bilateral oncoplastic breast reduction was performed on all patients except in one patient in whom one-sided reduction was conducted to preserve lactation (lateral pedicle). Nipple-areola complex was re-located to its new location on a chosen pedicle. The pedicle was selected according to the tumor location. In inferior location tumors superior pedicle, in lateral locations superomedial pedicle, in upper-

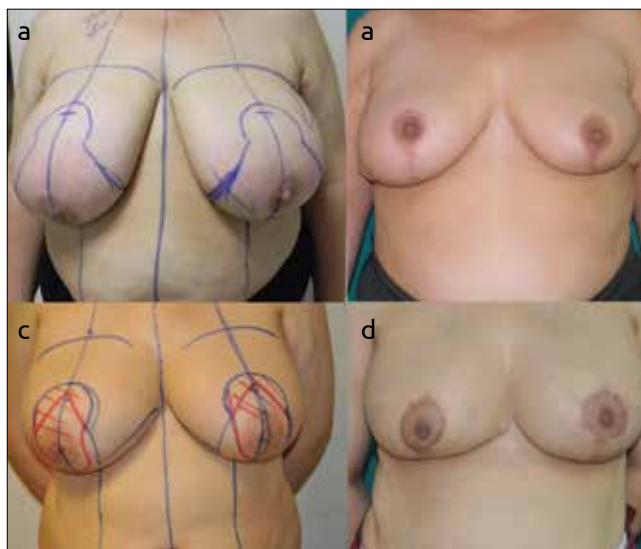


Figure 1. a-d. Two cases with superior pedicle oncoplastic breast reduction. Preoperative photograph (a-c). Postoperative photograph (b-d)

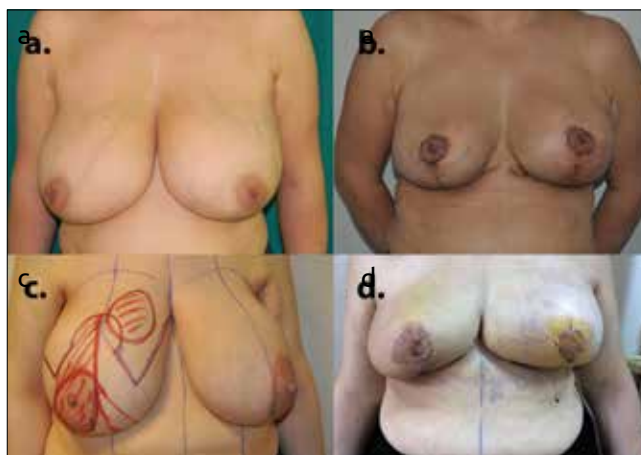


Figure 2. a-d. Preoperative (a) and postoperative (b) photographs of a superomedial pedicle oncoplastic breast reduction patient. Preoperative (c) and postoperative (d) photographs of a superolateral pedicle oncoplastic breast reduction patient

medial locations superolateral pedicle was used. In one patient with a central localization, tumor nipple areola was not preserved. Especially tumors with the upper medial location were more challenging. Pedicle design was modified to obtain longer and a wider pedicle. Pedicle was anchored to the pectoral fascia to achieve fullness in the excised area (Figure 1-2).

In the postoperative follow-ups, one patient encountered wound healing problems after radiotherapy. After debridement, the wound closure was delayed for secondary healing. The complete closure of the wound was observed three weeks after the debridement. No other complications were seen in the other patients. 12 months after the surgery all the patients were tumor free and were aesthetically satisfied.

**Discussion and Conclusions**

We believe that this approach to BCS in patients with macromastia has many advantages. It improves the final aesthetic results by maintaining

natural breast contours. This has been a problem with conventional BCS in recent decades (13). Especially in large tumors maintaining the breast contour after resection has proven to be challenging. It has been reported in earlier studies that more than 15-20% reduction in the breast volume, depending on the tumor location, can decrease the aesthetic outcome of the surgery significantly (5, 17). This volume was reported to be low as 5% for medial tumor locations (18).

In our series all the patients were aesthetically satisfied. These patients were also relieved from their symptoms related to macromastia such as back and neck pains, which increased their overall satisfaction. Higher rate of patient satisfaction undergoing oncoplastic BCS was reported in earlier studies when compared to conventional BCS (11, 13, 19). It was more challenging to achieve aesthetically pleasing results in tumors with central and upper medial locations as reported previously (3, 20).

Another advantage of this approach to BCS is the increase in the surgical exposure during the tumor resection. We believe that the exposure and the resection of the tumor was much easier and wider excision was possible when compared to conventional BCS with the implementation of oncoplastic breast reduction. There is a risk of 4% contralateral second primary among the survivors of breast cancer (21). Although not currently supported by the literature, we believe that risk of secondary primary might decrease with the oncoplastic BCS since the contralateral breast volume is reduced. We also believe that the efficiency of radiotherapy might increase after oncoplastic BCS since the total breast volume is decreased, but there are no studies up to date to support this idea.

In conclusion, we believe that oncoplastic BCS can achieve satisfactory results regarding the final aesthetic appearance and tumor control. Further randomized controlled studies to compare oncoplastic BCS with conventional BCS are required to prove these findings.

**Ethics Committee Approval:** Ethics committee approval was not requested for this study.

**Informed Consent:** Written informed consents were obtained from all patients who participated in this study.

**Peer-review:** Externally peer-reviewed.

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