



ORIGINAL ARTICLE

Usefulness of breast-conserving surgery using the round block technique or modified round block technique in Japanese females



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Summary *Background:* The round block technique (RBT) is an oncoplastic technique in which only the perimamillary scars remain visible. We have performed RBT in cases that require resection of the breast tissue under the nipple–areola complex (NAC) and a modified round block technique (MRBT) in peripheral cases in which performing resection of the breast tissue under the NAC is unnecessary. We herein report the usefulness of these techniques.

Methods: The study participants consisted of 18 patients who underwent breast-conserving surgery (BCS) using MRBT or RBT between July 2010 and July 2011. In the cases using RBT, de-epithelialization between the outer and inner incision lines was performed and the dermis was cut at the side of the tumor location. For MRBT cases, the dermis was cut in all parts of the inner and outer circles, and the skin between the inner and outer incision lines was resected.

Results: Cosmetic results were found to be excellent in three cases, good in eight cases, fair in five cases, and poor in two cases. In this study, the cosmetic results were unacceptable (fair and poor) in patients who underwent $\geq 25\%$ resection or in whom the resected area was part of the lower portion of the breast.

Conclusion: These techniques are useful for performing BCS in the upper portion of the breast. However, if the excision volume is $>20\%$ or excision of part of the lower portion of the breast is required, other procedures should be considered.

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1. Introduction

Breast-conserving surgery (BCS) is the standard procedure used to treat breast cancer. The primary goal of BCS is to control cancer as effectively as mastectomy, with the additional goal of achieving cosmetic results that are

acceptable to patients. However, achieving good cosmetic results is sometimes difficult. The important factors considered to influence cosmetic results include excision volume, tumor location, and glandular density.¹

Oncoplastic techniques can allow for good cosmesis even after large excisions of breast volume, and many oncoplastic volume displacement techniques for partial mastectomy have been reported.^{1,2} Oncoplastic volume displacement techniques using reduction mammoplasty are best suited for Western females with large-sized breasts and usually require surgery to be performed on the contralateral side for symmetrization. The breast size of most Japanese females is relatively small, and many Japanese breast cancer patients do not wish to undergo contralateral breast surgery. Both these reasons make reduction mammoplasty unsuitable for Japanese patients.

The round block technique (RBT)^{1,3–6} is a mastopexy technique. It is also known as doughnut mastopexy or periareolar mastopexy, which is another oncoplastic volume displacement technique used in BCS. Patients with small-to-medium-sized breasts without any major ptosis and who may not require contralateral breast surgery for symmetrization are considered to be most appropriate to undergo this procedure. The procedure begins by making two concentric periareolar incisions, resulting in a periareolar scar only. The nipple–areola complex (NAC) can be moved using this technique, depending on the distance of the outer incision from the new areola incision. As a result, this technique is thought to be highly appropriate for Japanese patients.

In the original RBT, the dermis is cut only on the side where the tumor is located because the NAC is supplied by dermal vessels from all sides. Therefore, this technique is difficult to perform in patients with tumors located in peripheral areas of the breast. However, Zaha et al⁷ reported the use of a modified round block technique (MRBT) in which the dermis is cut on all sides, to remove tumors located in peripheral areas of the breast. In cases in which the breast excision area does not include the area under

the NAC, an excellent view can be secured because the dermal flap can be made by incising around the entire outer circle. Because the view is very good, not only partial mastectomy, but also breast reshaping, can be performed easily using MRBT. We performed the original RBT in cases requiring resection of the breast tissue under the NAC and the MRBT in peripheral cases that did not require such a resection. The aim of this report is to describe the efficacy, indications, and problems of these oncoplastic techniques in Japanese breast cancer patients.

2. Methods

2.1. Participants

A total of 18 patients were evaluated in this study: 11 patients underwent MRBT and seven patients underwent RBT between July 2010 and July 2011 (Tables 1 and 2). The average age of the patients was 57.2 years (range: 41–79 years). Eight patients who underwent MRBT and seven patients who underwent RBT had undergone sentinel lymph node biopsies in which no metastasis was detected in the sentinel lymph nodes, enabling them to avoid axillary lymph node dissection. Two MRBT patients with lymph node metastasis diagnosed prior to surgery underwent axillary lymph node dissection and one MRBT patient underwent partial mastectomy only. Each surgery was performed by breast surgeons without the aid of plastic surgeons.

Preoperative evaluations were performed by the breast surgery group. This procedure was indicated for patients whose excision volumes were 10–40% of the total breast volume. Because filling large defects in the lower pole of the breast is difficult using only these techniques, patients with cancer in the lower pole of the breast were not included. Furthermore, patients in whom the position of the NAC could be moved in order to maintain the symmetry of the bilateral breasts were selected. We performed MRBT

Table 1 Summary of patients of modified round block technique.

No.	Age (y)	Operation	Location	Breast density ^a	Excision volume (%) ^b	Breast size	Postoperative complication	Cosmetic result ^c
1	70	Bq + SNB	A	Heterogeneously dense	15	Medium		Excellent
2	52	Bq + SNB	A	Extremely dense	20	Medium		Excellent
3	51	Bp + SNB	A	Heterogeneously dense	10	Large		Good
4	41	Bp + Ax	AC	Heterogeneously dense	20	Large		Good
5	60	Bp	C	Heterogeneously dense	20	Small		Good
6	58	Bq + SNB	C	Heterogeneously dense	20	Medium		Good
7	61	Bp + SNB	C	Scattered fibroglandular	15	Medium		Good
8	61	Bp + SNB	AB	Scattered fibroglandular	15	Medium		Fair
9	43	Bp + SNB	AB	Heterogeneously dense	20	Medium		Fair
10	44	Bp + Ax	CD	Heterogeneously dense	20	Medium		Fair
11	68	Bq + SNB, re-excision	C	Scattered fibroglandular	25	Medium	Margin positive	Poor

^a Breast density was classified into four categories based on the Breast Imaging Reporting and Data System (BI-RADS).

^b Excision volume compared to the total breast volume was estimated by using the photograph of preoperative marking of a partial resection area.

^c The cosmetic result was evaluated based on photographs taken 1 year after the operation.

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