



ORIGINAL ARTICLE

Technical tricks to improve the cosmetic results of breast-conserving treatment

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Received 16 May 2006; received in revised form 29 August 2006; accepted 29 August 2006

KEYWORDS

Breast cancer;
Plastic surgery;
Breast-conserving
therapy;
Oncoplastic

Summary The paper describes different manoeuvres and surgical details that may help the general surgeon to improve the aesthetic outcomes after breast-conserving treatment for cancer. Among them, the pre-operative planning, the position of the patient in the operative room, the mobilisation of the glandular tissue when the tumour has been removed. All these manoeuvres contribute to achieving better symmetry with the healthy breast and to improve the final aesthetic result, minimising the surgical conflict between large resections and defects for optimal control of local disease and the consequent breast deformities.

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Introduction

The purpose of breast-conserving treatment for early cancers is to preserve the mammary gland guaranteeing a satisfactory outcome of the preserved breast, providing a similar chance of cure compared with mastectomy.^{1,2} The support of a plastic surgeon has been recently advocated to avoid poor cosmetic results after large quadrantec-

tomies. Oncoplastic surgery consists of a new concept that associates breast-conserving surgery with techniques of breast reshaping.^{3–6} It provides the opportunity to improve the final cosmetic results and, moreover, to expand the indications for conservative treatment without decreasing oncological safety.⁷ Several techniques of partial breast reconstruction require complete training in plastic surgery.^{8–11} On the other hand, this specific training is not mandatory since the majority of conservative treatments are proposed for small tumours and they result in limited glandular defects. In these cases, however, the final outcome

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can be impaired because of bad scarring, scars that are too visible, asymmetry of the areolas and localised glandular defects.¹²

In this paper, the authors present several surgical tricks for general surgeons with no specific training in plastic surgery to improve the final cosmetic result of breast-conserving treatment.

Pre-operative drawings

The day before surgery, a discussion between the patient and surgeons is strongly recommended to plan the surgical approach and the final location of the scars.

The breasts should be analysed with the patient in the standing position and any existing asymmetry of shape, position or size should be noticed (i.e. congenital or acquired asymmetries caused by increased breast volume due to the tumour or residual oedema or haematoma after previous biopsies).

The positions of the skin incisions should be drawn with a permanent marker. There is a general agreement regarding performing radial incisions in the lower mid-part of the breast and circumareolar ones in the upper mid-part. In fact, a circumareolar incision in the inferior quadrants could create a disabling crease between the areola and the inframammary fold ("double bubble" profile). On the contrary, a radial incision in the upper part of the breast may be too visible above the décolleté line. The periareolar incision provides good results if the tumour is located close to the areola, otherwise the extended skin undermining can leave disabling skin retractions. When the tumour is located in the upper outer quadrant, a radial incision allows good exposure of the tumour site and it can be prolonged forward to the axilla for lymph node dissection.

The necessity of skin removal generally depends on the possible connections between superficially located tumours and the dermis. This is primarily discussed with the breast surgeon pre-operatively.

Finally, when the tumour is deeply located, the best surgical view is the inframammary approach. The skin incision should be drawn parallel to the inframammary fold, 1 cm above to be hidden under the bra. The length is about 5–6 cm and can be prolonged toward the axilla for node examination. An extended deeply undermining of the breast through this incision allows the exploration of the whole gland and the removal of any tumour in any quadrant, without creating modifications of the breast shape.

In every patient, the mid-line should be drawn between the two breasts as well as the inframammary fold. These marks will be important in the operating theatre for checking the final symmetry.

Operating procedure

The patient should lie on a surgical table that allows the sitting position during surgery to check the final symmetry of the two breasts. Therefore, the two breasts should be included in the operative field even if no procedure on the healthy breast is scheduled.

The surgical incisions will follow the drawing performed the day before. Sharp skin incisions are recommended in order to preserve a good blood supply of the dermis and perfect approximation of the skin margins. Lumpectomy or quadrantectomy should be performed with at least 1 cm of healthy glandular tissue around the tumour. Glandular resection should go straight down to the pectoralis fascia. The histological analysis of the specimen will be more accurate if the margins have a straight cut. The closure of the glandular defect is really important although several authors suggested leaving it open, but this increases the risk of haematoma or seroma, which will immediately fill up the defect, but after several days the defect will again be visible under the skin. It is usually performed by simple approximation of the glandular pillars. It can be facilitated by glandular undermining above the pectoralis fascia. This procedure creates the opportunity to manually check the deeper part of the gland and sometimes to discover occult lesions. Of course, any suspicious nodules should be sent to the pathologist.

We recommend the repair of the glandular defect especially in the lower quadrants of the breast, where the glandular tissue is thicker than in the upper pole, otherwise skin retraction to the fascia occurs resulting in unaesthetic outcomes. On the contrary, in the upper pole the closure of the defect is not mandatory (Fig. 1). A "pyramid fashion" resection is recommended and a smooth skin depression can result, which usually does not bother the patient.

To provide a better cosmetic result with no skin retraction, superficial undermining between the glandular tissue and the skin envelope can be performed, preserving the skin blood supply. In cases of simultaneous superficial and deeper undermining of the gland, the blood supply of the glandular flap can be decreased, especially in the case of fatty breasts. Consequently, secondary

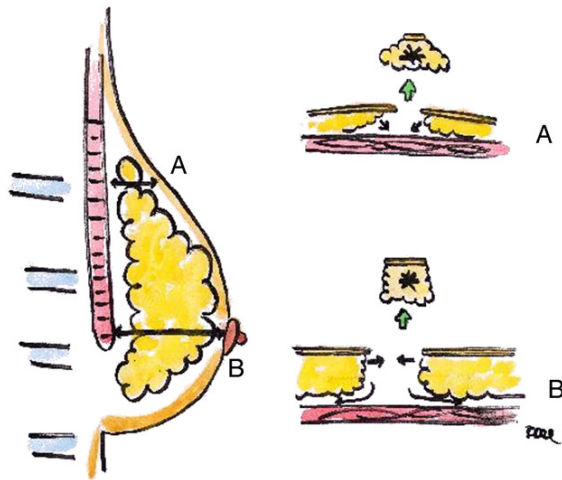


Figure 1 Different glandular thickness in different parts of the breast.

glandular and fat necrosis can occur several days after surgery.

Finally, the skin sutures should be performed following the rules of plastic surgery: approximation of the dermic layer with interrupted absorbable stitches and intradermal continuous 4 or 5/0 absorbable suture.

A drain should be used when a wide undermining has been performed.

The symmetry with the contralateral healthy breast should be checked before the skin suture, when the glandular defect has been already corrected. The skin can be temporarily approximated with staples.

How to check the symmetry

From several viewpoints: The surgeon should move to the head and to the feet of the patient and compare the shape of both breasts. With the patient in the supine position, these views allow a good evaluation of breast projection, width and areola position. With the patient in the sitting position, the surgeon moves to the feet to evaluate the final symmetry: the level of the two inframammary folds, the level of the areolas, and the width of the breasts. The lateral view is not sufficient for a correct evaluation, as demonstrated by the comparison between the lateral view and the front view pictures (Fig. 2).

How to improve the symmetry

Several variables can cause nipple and areola malpositioning, different sizes or positions of the

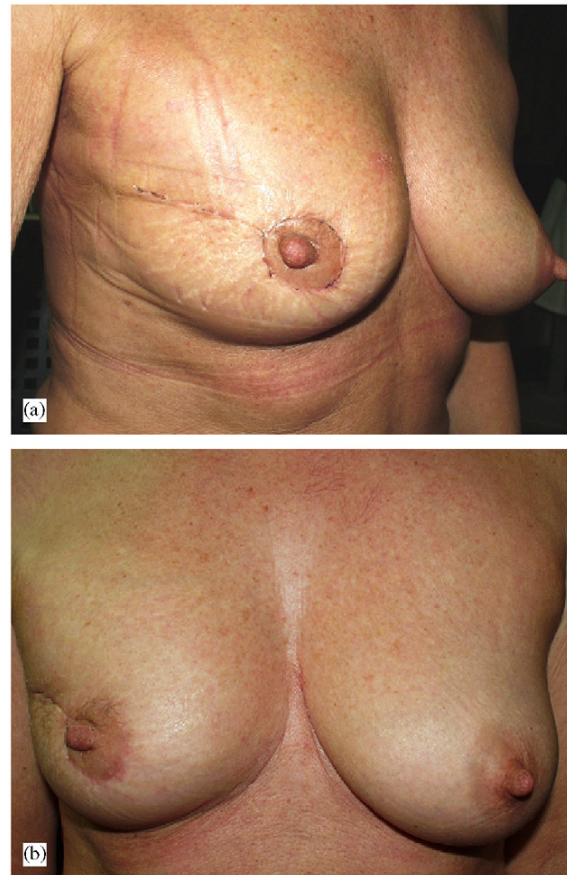


Figure 2 (a) Apparently good cosmetic result from the lateral viewpoint. (b) Asymmetry between the two areolas is evident from the frontal viewpoint.

two breasts. The first inconvenience is very frequent and can be improved without any specific training in plastic surgery. Nipple and areola centralisation can be obtained by an asymmetrical periareolar de-epithelialisation (Fig. 3). A croissant-shaped piece of de-epithelialised skin is cut around the areola on the opposite side of the quadrantectomy. Afterwards, the skin is sutured using thin, intradermal, absorbable stitches.

When the lack of symmetry is due to the different position and volume of the two breasts the improvement generally requires the competence of a plastic surgeon. Only in cases of mild shape asymmetries can simple correction of the contralateral breast be planned safely without any training in plastic surgery. A periareolar symmetrical de-epithelialisation is recommended to correct a mild ptosis since the reduction of the skin envelope provides a certain degree of mastopexy. However, this procedure may cause a flattening of the breast due to the tension in the areolar region.

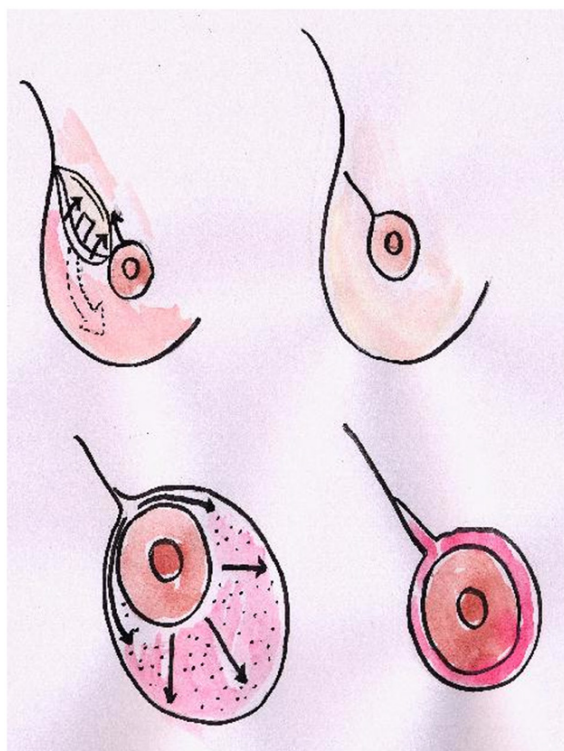


Figure 3 Technique of areola centralisation by periareolar de-epithelialisation.

When the asymmetry results from an upper outer quadrantectomy performed with an oblique incision, it is possible to improve the symmetry with the "mirror lumpectomy" technique.¹³ The same glandular resection is performed on the healthy breast in the upper outer quadrant (similarly to the previous quadrantectomy). Moreover, to avoid the common dislocation of the areola towards the axilla, we suggest centralising the areola or to length the linear, wound with a Z plasty. The "symmetry procedure" on the healthy breast is the opportunity to check the glandular tissue. Any suspicious glandular area should be removed and sent to the pathologist.¹⁴

Conclusion

Different technical details have been described to improve the results of breast-conserving treatment with no specific training in plastic surgery. How-

ever, the most important advice is to first perform an oncologically safe resection of the cancer and afterwards evaluate the final cosmetic results. In fact, aesthetic outcomes should not influence the principles of the cancer surgery based on radical tumour excision. Vice versa, the ability to carry out breast remodelling provides more confidence for performing wide quadrantectomies and even more radical cancer surgery.

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