

Breast Conserving Surgery with Random Rotational Flap

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Abstract

The random rotation flap in breast conserving surgery relies on a volume replacement concept using the random skin flaps from the lateral chest wall to cover the wide excisional defects to decrease deformity. The advantage of this operation is its simplicity, and requires a short operating time with a satisfying aesthetic outcome. However, a too wide random rotational flap may lead to a higher incidence of necrosis. In conclusion, this is an interesting and simple option to substitute for a latissimus dorsi musculocutaneous flap with a good aesthetic result.

Keywords: Breast-conserving surgery, Random rotational flap, Local flap, Reconstructive procedure, Breast deformity

INTRODUCTION

Recently, the role of oncoplastic surgery in breast cancer treatment has been changed from the past, which focused more on survival of the patient. Currently, quality of life and aesthetics are perceived to be just as important.¹ Some cases are eligible for breast-conserving therapy whereas others require mastectomy with a reconstructive procedure to improve their quality of life and self-esteem. There are many types of surgery to remove breast cancer which depend on various factors such as patient's demand, tumor burden, and breast shape^{1,2}. Here, we focus on breast conserving surgery.

Oncoplastic breast-conserving surgery can be categorized into two types^{2,3}. The first one uses volume displacement which reshapes residual breast tissue to minimize deformity. Another is volume replacement which uses local or musculocutaneous flap rotation to close the defect. Tumor removal in Asian women with small breasts often results in breast deformity, thus vol-

ume replacement is an important technique. This article mentions how to use local flap from the lateral chest wall to cover wide excisional defects at the lateral site.

MATERIALS AND METHODS

Basic Principles and Step-by-Step Procedure

Random flap from the lateral chest wall uses the rotational flap concept to cover the subcutaneous gap and skin defect and to prevent twisted skin suturing by rotating skin and subcutaneous tissue from the lateral side of the breast to replace the removed skin and soft tissue area³.

The initial step is preparing a patient who comes with a breast mass with suspicious skin involvement at the lateral side of the breast. (Figure 1,2)

1. Draw incision line over the tumor area that mostly is circular or elliptical shape, extend this and create a lateral rotational flap in which the aspect ratio

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Figure 1 The tumor locates on the lateral side of the right breast with skin dimpling.

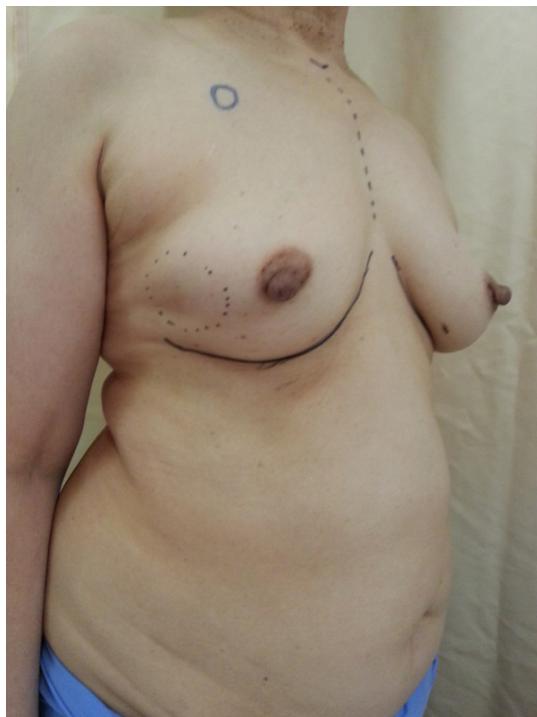


Figure 2 The lateral side view shows that the tumor locates on the lateral side of the right breast with skin dimpling. (The dotted circle shows tumor area.)

of the width to the length of the flap is less than 1:1. In the case of a flap with its feeding vessel, the length can be longer. (Figure 3)

2. Incise skin along the line around the tumor area deep through all layers of skin and subcutaneous tissue and then excise the mass in a cylindrical shape. (Figure 4)

3. Mark specimen with metallic clips to facilitate orientation. (Figure 5)



Figure 3 Drawing the lines for removing a mass and creating a random flap



Figure 4 Incisions following the preoperative drawing

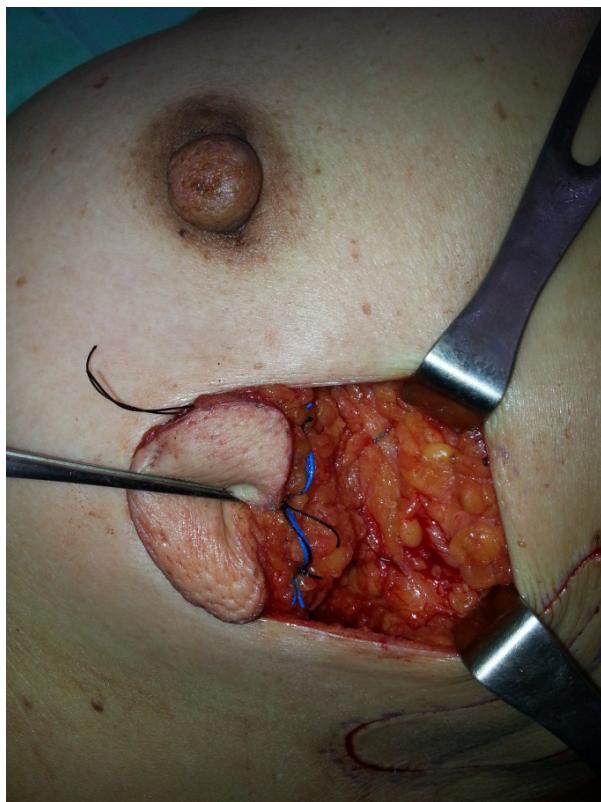


Figure 5 Suturing metallic clips for tumor orientation



Figure 6 After tumor removing, the metallic clip was placed

4. Place metallic clips at the tumor bed. (Figure 6) Simple defect closure without any technique could result in breast deformity. (Figure 7, 8)

5. Incise along the marked lines for the flap, through the skin and subcutaneous tissue, respecting its blood supply. (Figure 9)

6. Rotate flap to replace the excisional gap, and close the wound by suturing layer by layer. (Figure 10, 11)

7. Obtain specimen mammogram for evaluating surgical margin adequacy. (Figure 12 A-B) Discharge the patient home 2 to 3 days after the operation. (Figure 13 A-D)

RESULTS AND DISCUSSION

Random skin flap from lateral chest wall is appropriate for the following indications:

1. A single lesion with suspicious skin involvement
2. No contraindication for breast-conserving therapy
3. Tumor location at the lateral side of the breast
4. Not too wide skin defect



Figure 7 Simple closure causes a deformity (Lateral view)



Figure 8 Simple closure causes a deformity (Anterior view)



Figure 9 Dissecting the skin and subcutaneous tissue of the flap

The main advantage of this technique lies in its simplicity. The operative time is short and may be appropriate for elderly or high-comorbidity patients. Using the lateral local skin and subcutaneous tissue flap does not result in a deformity at the donor site. This might result in a faster recovery time, a shorter hospital stay, and the wounds might even heal faster.

However, one limitation is that there are no named or fixed vessels supplying the flap, thus the name random flap. The wider the skin flap, the a higher the incidence



Figure 10 Rotation of the flap to the defect



Figure 11 Final appearance after a complete operation

of necrosis, so that large defects, and suturing with excessive tension, should be avoided.

Our limited experience with this flap has been quite satisfactory. No major complications have occurred and the cosmetic results have been adequate so far.

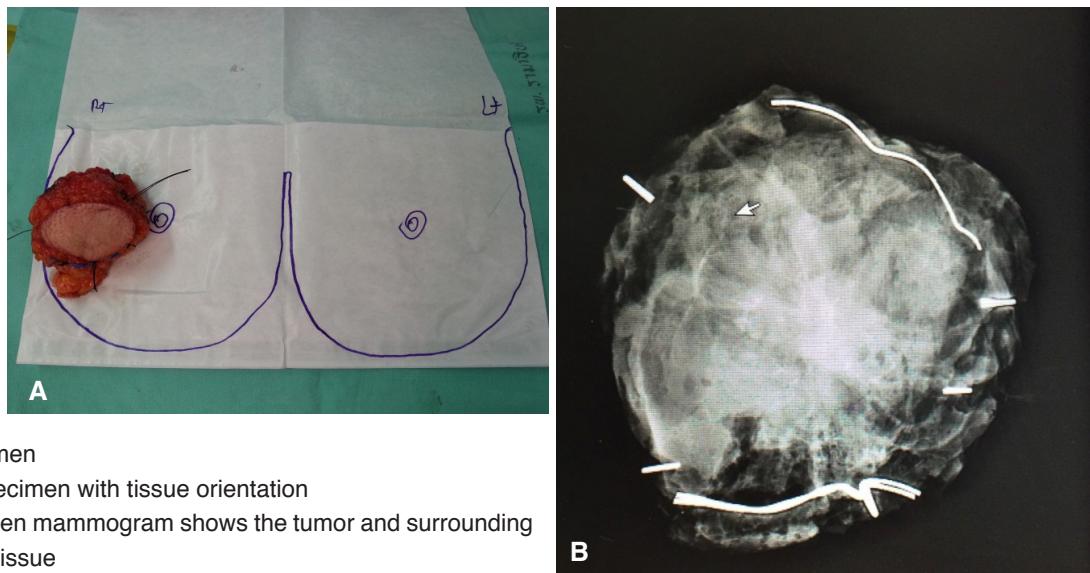


Figure 12 The specimen

A: The specimen with tissue orientation
B: Specimen mammogram shows the tumor and surrounding breast tissue



Figure 13 After breast-conserving therapy with a random skin flap from the lateral chest wall shows no deformity

A: Lateral view, 1-week post-surgery **B:** Anterior view, 1-week post-surgery
C: Lateral view, 1-month post-surgery **D:** Anterior view, 1-month post-surgery

CONCLUSION

Oncoplastic techniques have an important role in breast-conserving therapy. The random lateral chest wall flap is one such technique, and has good esthetic results. This is a simple technique able to replace latissimus dorsi musculocutaneous flap in certain situations, especially those in which tumors are located at the outer part of the breast.

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