Oncoplastic Breast Surgery

A Guide to Clinical Practice

Second Edition

Florian Fitzal
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Contents

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Introduction

1

Florian Fitzal and Peter Schrenk

In the book *Oncoplastic Breast Surgery: A guide to clinical practice* (edited in 2010), oncoplastic breast conservation surgical techniques as well as immediate reconstruction after mastectomy were described in detail. Based on these techniques, the current book describes 64 cases of oncoplastic surgery presented by different authors.

Contrary to other books, the authors present not only cases with a good outcome, but an emphasis is put on complications and poor cosmetic results.

Each case presentation is followed by a comment of the author discussing why the surgical technique used provided a good outcome as well as what went wrong in case of an inferior result. The poor cases are critically analyzed with respect to patient and case selection, the surgical technique used, and the experience of the surgeon. Possible solutions are provided on how to improve or correct a poor result or, more important, how a poor outcome may have been avoided.

Case selection in this book primarily comprises oncoplastic breast conservation surgery but also refers to new techniques like matrix-assisted breast reconstruction, lipofilling, or problems associated with postsurgical radiation treatment.

The book should help the reader to obtain good clinical and cosmetic results and to avoid making the same mistakes as other surgeons have done before and should help in decision-making and problem-solving in case of postoperative complications.

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Part I

Breast Conserving Oncoplastic Techniques: Round Block or Doughnut Technique

Round Block Lumpectomy

2

Hisamitsu Zaha

2.1 The Patient

A 41-year-old woman had a palpable mass in the upper inner quadrant of her left breast. Radiological workup and biopsy showed an invasive ductal carcinoma with triple-negative features which was 3.7 cm in size. After 6 months of neo-adjuvant chemotherapy, the tumor achieved clinical complete response; then, breast-conserving surgery became possible. She had small-sized breasts without ptosis, and the original tumor location was 5 cm away from the nipple. Thus, we decided to perform a modified round block technique (MRBT) (Zaha et al. 2013). This technique permits distant tumor excision without excision of the periareolar skin and also gives the surgeon the opportunity to use adequate adjacent breast tissue to fill the breast defect even in a small-sized breast.

2.2 Surgery

After a sentinel lymph node biopsy, a circumferential periareolar incision was made along the outer wedge of the areola, and deep subcutaneous dissection was carried out via the incision (Fig. 2.1). Unlike classical RBT (Benelli 1990; Fitzal 2010), the periareolar skin was neither excised nor deepithelialized. Subcutaneous dissection was extended not only to the tumor-bearing upper quadrants but also to the entire breast including the inferior quadrants, which made it easy to access the distally located tumor without periareolar skin excision. The nipple-areola complex (NAC) was then completely detached from the surrounding skin flap, and a wound retractor was placed to widen the periareolar round wound (Fig. 2.1b). The NAC and breast parenchyma were pushed downward (Fig. 2.2a), and partial mastectomy could easily performed with a good field of view (Fig. 2.2b). Partial mastectomy defect was repaired by

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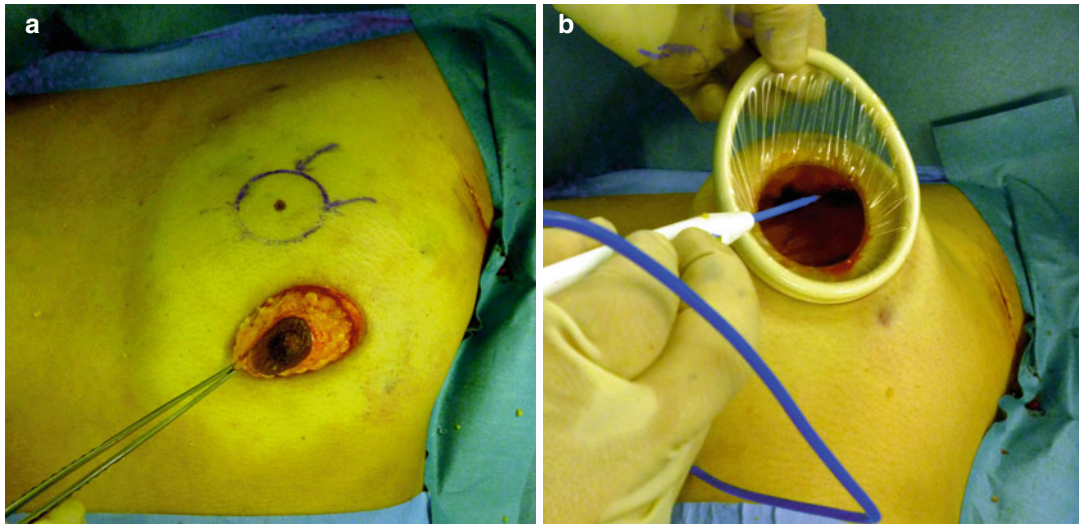

Fig. 2.1 (**a**) A circumferential incision was made without excision or deepithelialization of the periareolar skin. Although the areola was 3.5 cm in diameter, the wound automatically became wider after a full-thickness periareolar incision. (**b**) Subcutaneous dissection was extended to the entire breast including the lower quadrants. A wound retractor could widen the wound and facilitated entire subcutaneous dissection

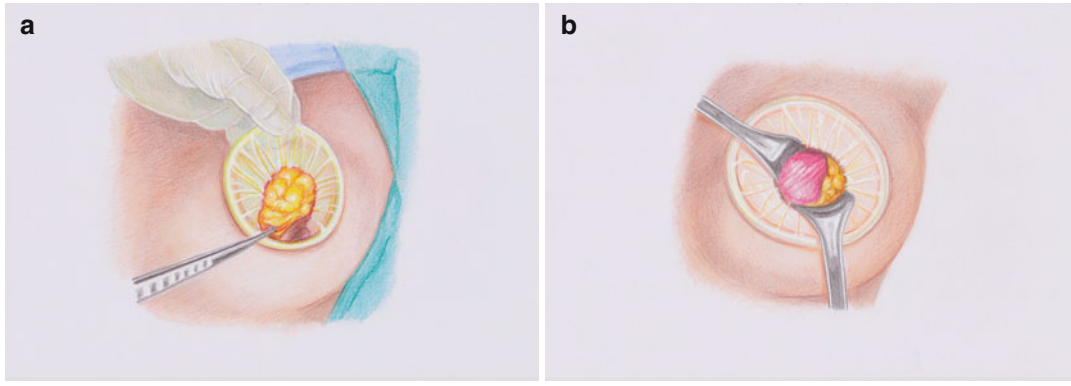

Fig. 2.2 (**a**) The nipple-areola complex (NAC) was pushed downward, and the wound was moved above the tumor. (**b**) Partial mastectomy was completed with a good field of view

mobilizing and suturing the surrounding breast parenchyma (Fig. 2.3). It was very easy to mobilize the residual breast parenchyma because it had been already widely dissected from the skin flap. After remodeling of the breast was completed, the wound was easily closed with the NAC with continuous subcuticular absorbable suture without any tension around the wound.

2.3 (Clinical and Cosmetic) Outcome

The postoperative follow-up was uneventful. Pathological analysis revealed pathological complete response. The cosmetic result was rated excellent by the surgeon as well as by the patient 1 year after surgery (Fig. 2.4).

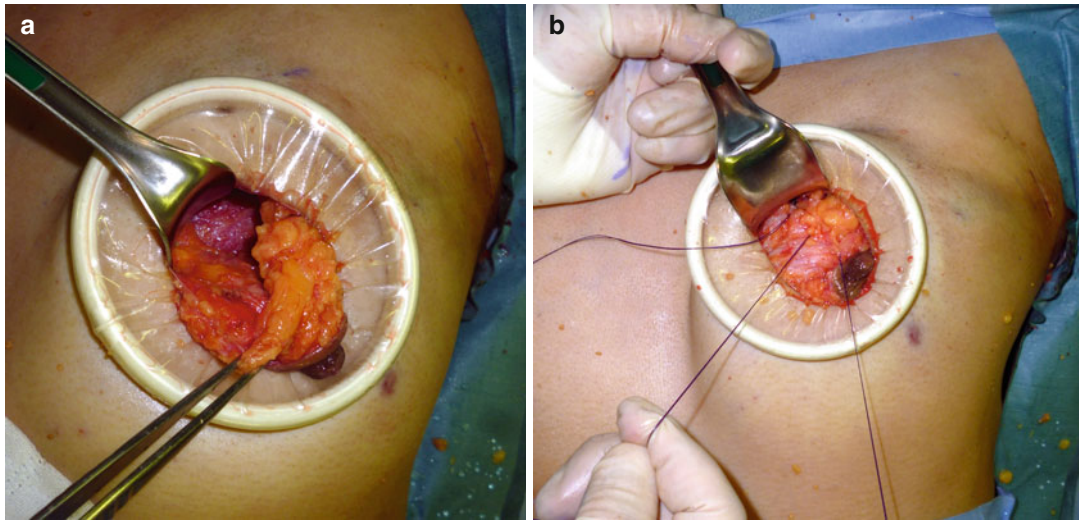

Fig. 2.3 (**a**) The residual breast parenchyma of the upper outer quadrant was dissected from the underlying pectoralis muscle and mobilized into the defect. (**b**) Suturing and remodeling of the breast were completed

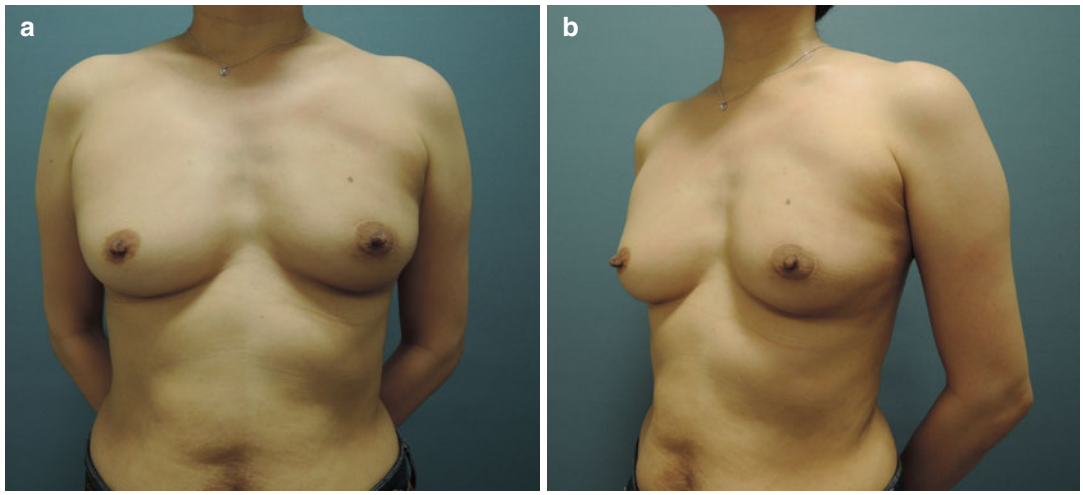

Fig. 2.4 One year after surgery. (**a**) Both shape and location of the NAC were almost the same with those of contralateral one. (**b**) Barely visible scar aroung the areola

2.4 Comment of the Author

MRBT is best suited for patients with small- to medium-sized breasts with areolae that are smaller than 3 cm in diameter or when the tumor is located peripherally. Characteristic steps that are distinct from RBT are omission of the excision or deepithelialization of the periareolar skin and extensive subcutaneous dissection of the entire breast (Zaha et al. 2013). Problems of late-onset scar widening and changes in both shape and position of the NAC can be minimized in MRBT even in small-sized breast.

Extensive subcutaneous dissection including the inferior quadrants allows easy access to the tumor by detaching the NAC from the surrounding skin flap and by moving the wound above the tumor. A round periareolar wound can be widened up to at least 5 cm in diameter through application of a wound protector, even without excision or deepithelialization of the periareolar skin. Extensive subcutaneous dissection also enables

easy remodeling of the breast; however, dissection between the residual breast parenchyma and the pectoralis muscle should be limited only to the upper half of the breast parenchyma to maintain the vertical blood supply to the NAC, when remodeling is performed.

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Round Block Lumpectomy with Resection of the Nipple

3

Peter Schrenk

3.1 The Patient

A 53-year-old postmenopausal woman was diagnosed with a 10 mm tumor in the left breast 3 cm from the nipple in the upper outer quadrant. Clinically the patient presented with bloody nipple discharge; mammography found small clusters of suspicious microcalcifications peritumorally. The breast was of small size and nonptotic (Fig. 3.1a, b).

3.2 Surgery

A round block quadrantectomy was done, and this included resection of the nipple and the breast duct with the nipple discharge. This duct was identified through ductoscopy and marked with a thin wire inserted through the ductoscope. The medial and lateral pillars of breast tissue were mobilized off the skin and the pectoralis muscle fascia and closed to avoid any dead space. The skin of the areola complex was dissected off the breast tissue and the wound closed as a round block quadrantectomy (Fig. 3.2a–e).

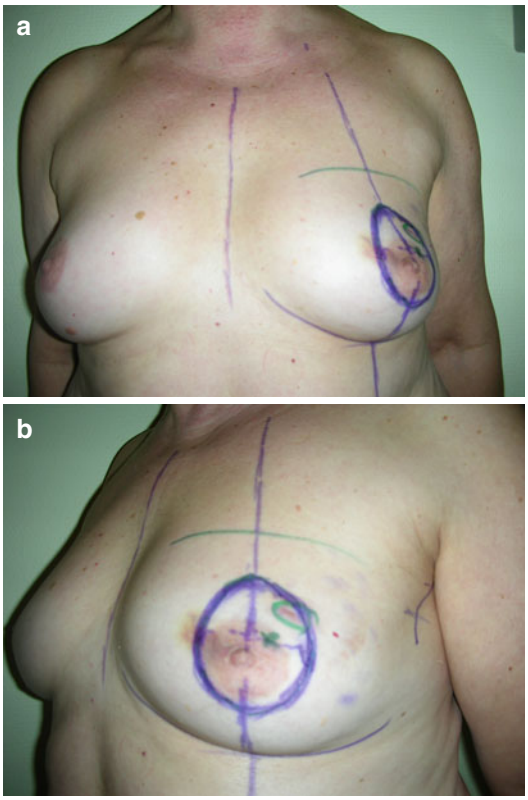

Fig. 3.1 (**a**, **b**) Preoperative view. A 53-year-old patient had a small invasive cancer and intraductal carcinoma in situ in the upper outer periareolar region of the left breast

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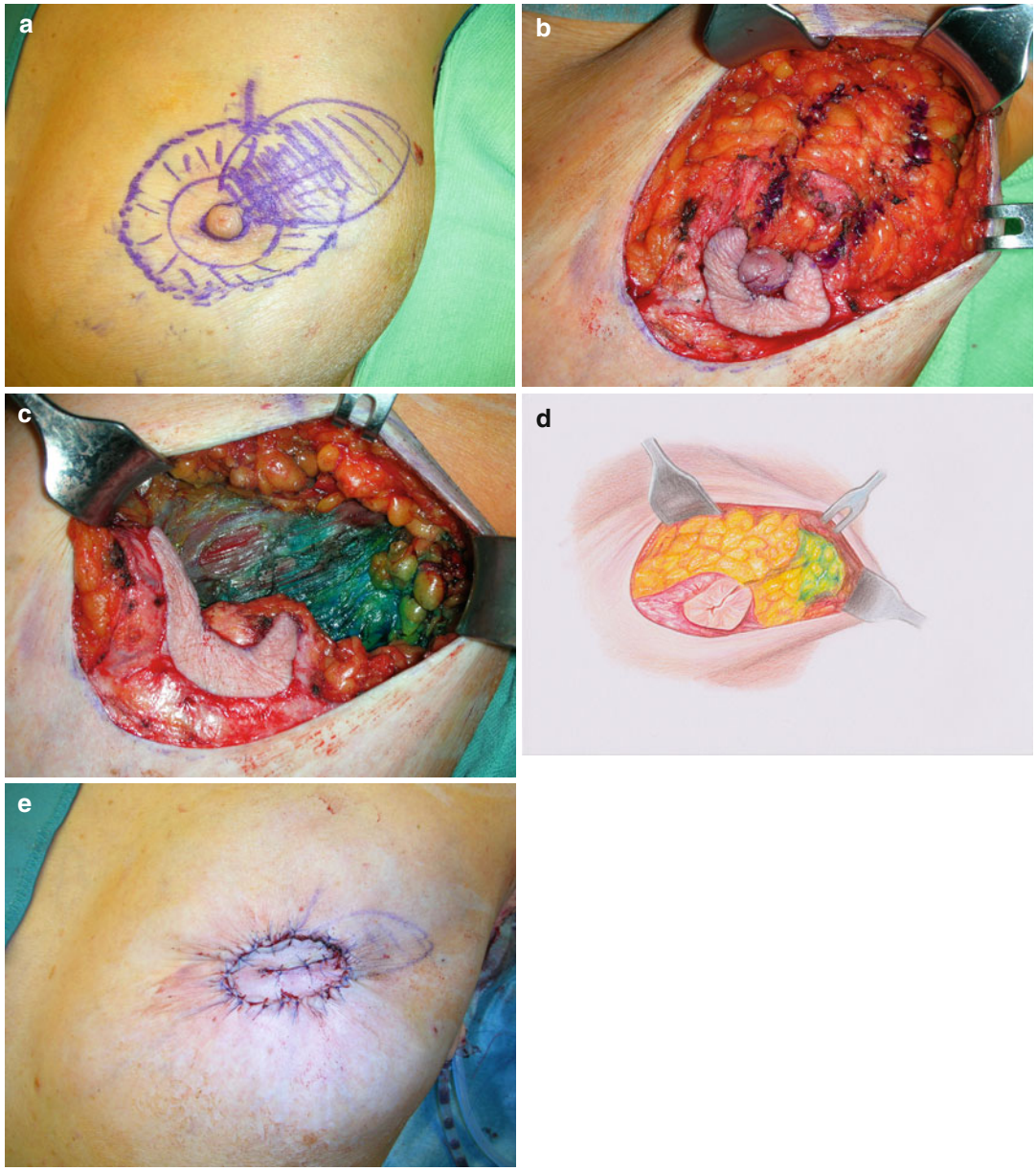

Fig. 3.2 (**a**–**e**) Intraoperative view. (**a**) The new areola is outlined (*inner circle*), another circular incision is in a 15 mm distance. The tissue and the nipple to be resected are outlined on the skin. (**b**) The subcutaneous tissue is dissected off the skin. The tissue to be resected is marked on the breast. (**c**) The tumor is resected together with the nipple, and the skin of the areola is mobilized from the subcutaneous tissue. (**d**) The skin of the areola and the breast tissue are closed. (**e**) Immediate postoperative result

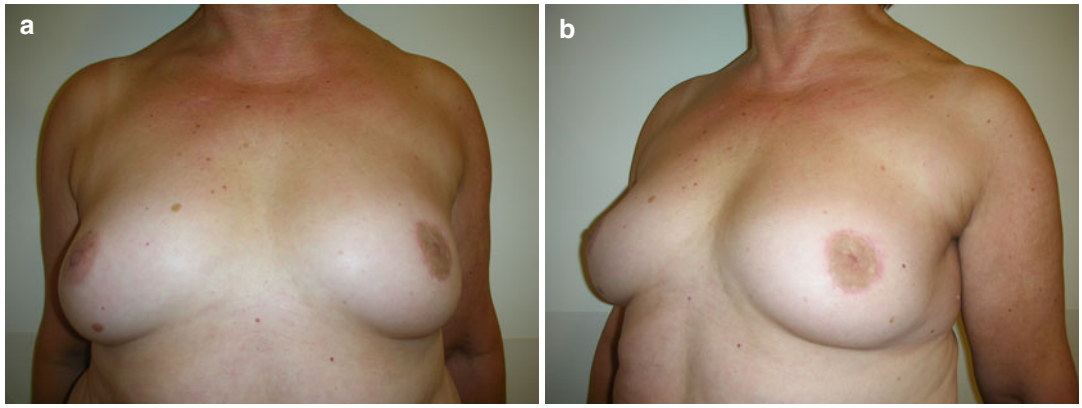

Fig. 3.3 (**a**, **b**) The postoperative result after 5 years shows good volume and breast symmetry

3.3 Clinical and Cosmetic Outcome

The postoperative course was uneventful. Final histology found a 10 mm invasive cancer (G2, receptor positive, Her-2-neu negative, Ki67: 5 %) and a 20 mm ductal carcinoma in situ of intermediate grade both completely removed. Postoperatively the patient underwent radiation and endocrine treatment. The cosmetic result 5 years after surgery was judged as excellent by both the patient and the surgeon (Fig. 3.3a, b).

3.4 Comments of the Author

- In this patient the nipple was excised due to nipple discharge and intraductal carcinoma in situ close to the nipple-areola complex. The discharging breast duct was identified intraoperatively with ductoscopy and through wire guidance, which allowed selective excision of the discharging duct.

  In case of malignant microcalcifications not closer than 20 mm to the nipple, we would try to preserve the nipple and make further resections dependent of the final histologic result.
- The most appropriate patients for a round block quadrantectomy are those with medium-sized breasts and a moderate degree of ptosis. The tumor should be defined to one quadrant or otherwise the resection results in large defects, and the pedicles to be mobilized for adequate closure have to be undermined too much with the risk of fatty tissue necrosis or increased tension on the tissue resulting in tissue defects and a poor cosmetic result.

Doughnut Lumpectomy: Caveat I

4

Florian Fitzal

4.1 The Patient

A 57-year-old woman had a palpable mass in the upper outer quadrant of her right breast. Radiological workup showed a 1 cm unilateral lesion. Breast conservation was possible, and biopsy showed an invasive lobular endocrine responsible breast cancer. She had a medium-sized cup D breast and no ptosis (Fig. 4.1). The nipple-areola complex (NAC) is situated at the right place, and the patient did not want any contralateral symmetrization. Any type of oncoplastic surgery using breast reduction would have yielded in major asymmetry. Thus, we decided to perform a classical doughnut mastopexy. This technique leaves the NAC in place and gives the surgeon the opportunity to use adjacent breast tissue to fill the breast defect after oncologic resection.

4.2 Surgery

After sentinel node biopsy using patent blue, the skin around the NAC has been deepithelialized in a typical fashion. We used a 40 mm cone for the new NAC diameter. After incision of the dermis, the breast parenchyma was dissected from the skin. The tumor-bearing breast lump was undermined, and under palpable control, the left and right resection margins were dissected with the scalpel to minimize coagulation so the pathologist can investigate the margins easily. The lump was resected after dissection of the caudomedial margin. The defect within the breast is shown in Fig. 4.2.

Fig. 4.1 Preoperative picture of a 58-year-old patient with a 1 cm invasive lobular breast cancer in the upper outer quadrant of her right breast

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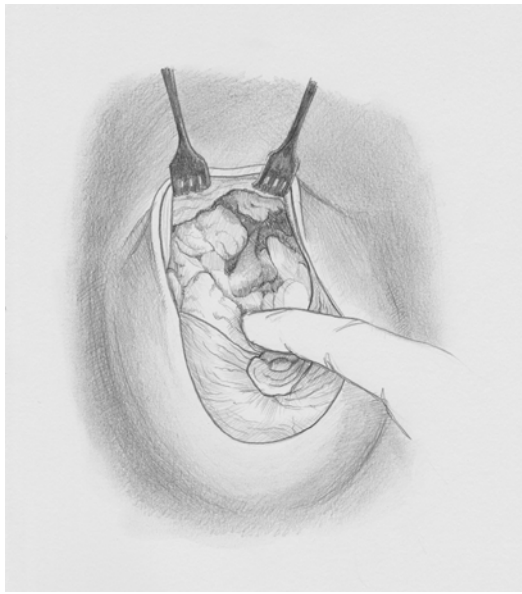

Fig. 4.2 This figure shows the defect after doughnut mastopexy and resection of the upper outer breast lump. On both sides of the defect, the breast parenchyma is not adequately freed from the skin and the pectoralis fascia. No sutures have been placed to approximate the breast lumps adjacent to the defect. This resulted in inadequate defect reconstruction

4.3 (Clinical and Cosmetic) Outcome

After surgery, the cosmetic result seemed to be quite good (Fig. 4.3). Already 20 days later, a small defect was visible in the upper outer quadrant of the right breast. This defect increased after radiotherapy and was quiet visible 1 year after surgery (Figs. 4.4 and 4.5).

4.4 What Went Wrong or What Was the Problem?

In this case the patient was suitable for a doughnut mastopexy. The medium breast size and the location of the tumor were good indications. A reduction mammoplasty with a vertical technique might have also been appropriate. However, the patient initially refused any type of contralateral symmetrization surgery, which would have been necessary to finally achieve a good result.

Fig. 4.3 Directly after closing the skin, there seemed to be no defect within the breast

Fig. 4.4 One year after surgery, the defect is visible

During doughnut surgery, as seen in Fig. 4.2, the breast tissue medial and lateral from the defect has not been adequately dissected from

Fig. 4.5 One year after surgery, the defect is visible

the skin and the pectoralis fascia. The defect has not been closed using parenchymal sutures. However, both steps are necessary to achieve a good result.

4.5 Comment/Possible Solution

In order to improve the result, adipose tissue infiltration may be an option. A second option would be to perform bilateral reduction mammoplasty. In this case the patient refused both options.