Skin-Sparing Mastectomy and Immediate Breast Reconstruction: A Prospective Cohort Study for the Treatment of Advanced Stages of Breast Carcinoma

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Background: Recent published series demonstrate the safety and effectiveness of skin-sparing mastectomy (SSM) with immediate reconstruction for the treatment of early-stage breast carcinoma. Although several reports have retrospectively evaluated outcomes after breast reconstruction for locally advanced disease (stages IIB and III), no study has specifically considered immediate breast reconstruction after SSM for locally advanced disease.

Methods: From 1996 to 1998, 67 consecutive patients with breast carcinoma underwent SSM with immediate reconstruction and were prospectively observed. From this group of patients, those with locally advanced disease (stage IIB, n = 12; stage III, n = 13) were analyzed separately. Tumor characteristics, adjuvant therapy, type of reconstruction, operative time, complications, hospital stay, and incidence of local recurrence and distant metastasis were noted.

Results: Breast reconstruction consisted of a transverse rectus abdominis myocutaneous flap (n = 22) or a latissimus flap plus an implant (n = 4). The median operative time was 5.5 hours; the average hospital stay was 5.2 days. Complications required reoperation in three patients (12%): partial skin flap necrosis in two and partial abdominal skin necrosis in one. Surgery on the opposite breast for symmetry was required in one patient (4%). Postoperative adjuvant therapy was not significantly delayed (median interval, 32 days). With a median length of follow-up of 49.2 months (range, 33–64 months), local recurrence was present in only one patient (4%), with successful local salvage treatment, and distant metastasis was present in four patients (16%).

Conclusions: SSM with immediate reconstruction seems safe and effective and has a low morbidity for patients with advanced stages of breast carcinoma. Local recurrence rates and the incidence of distant metastasis are not increased compared with those of patients who have had modified radical mastectomies without reconstruction.

Key Words: Skin-sparing mastectomy—Breast reconstruction—Advanced breast cancer.

In 1991, Toth and Lappert introduced the term skin-sparing mastectomy (SSM) to describe an approach of maximizing skin preservation to facilitate breast reconstruction. In most cases, only the nipple/areola complex is visibly sacrificed, without additional scars across the breast; this maintains the inframammary fold and improves the cosmetic result (Fig. 1). The primary concerns surrounding the use of this technique have included the increased morbidity (e.g., skin flap necrosis) of a mastectomy that is technically more difficult to perform reliably and the risk of local tumor recurrence and delay of its diagnosis.

Recently published series have demonstrated the safety of SSM with immediate reconstruction for the treatment of early-stage breast carcinoma. Local recurrence rates are comparable to those of patients with either a delay in their reconstruction or no reconstruction at all. With a median follow-up of 5 years, recurrence rates ranged from 0% to 7%. Furthermore, the diagnosis of local recurrences does not seem to be delayed. The
SKIN-SPARING MASTECTOMY

METHODS

From 1996 to 1998, 67 consecutive patients at the Mt. Zion Breast Cancer Center undergoing modified radical mastectomy with immediate reconstruction were prospectively observed after undergoing SSM with either a transverse rectus abdominis myocutaneous (TRAM) flap or a latissimus myocutaneous flap plus an implant for reconstruction. Patients were all counseled before surgery on risks and benefits, pre- and postoperative expectations, and reconstructive options by a multidisciplinary team consisting of a general surgeon, plastic surgeon, oncologist, and nursing care specialist. Patients were able to examine photographs of patients who had undergone various types of reconstruction and were given the opportunity to speak with individuals who had chosen immediate reconstruction. Contraindications to SSM included only those cancers with either direct skin involvement or cancers too close to the skin to achieve adequate margins. The choice between a TRAM flap and the latissimus dorsi flap was based on the patient’s wishes and the nature of her abdominal donor site. If adequate tissue was available on the abdomen, a TRAM flap was preferred.

Ages ranged from 29 to 75 years (mean, 48 years). Preoperative staging was as follows: stage 0, n = 27; stage I, n = 10; stage IIA, n = 5; stage IIB, n = 12; stage IIIA, n = 9; and stage IIIB, n = 4. From this group of patients, those with locally advanced disease, defined as stages IIB and III, were analyzed separately and form the basis for this study. Tumor characteristics, adjuvant therapy, type of reconstruction, operative time, complications, hospital stay, and follow-up (including local recurrence and distant metastasis) were recorded. The median length of follow-up was 49.2 months (range, 33–64 months). The results for local recurrence rates, the interval to postoperative chemotherapy, and the incidence of distant metastasis were compared with historical data in the literature for patients who underwent modified radical mastectomies without reconstruction for stage IIB and III breast tumors.

RESULTS

Patient Characteristics and Treatments

The tumor characteristics of the 25 patients with locally advanced disease revealed that 48% of the tumors were estrogen receptor positive and that 60% of the tumors had an anaplastic nuclear grade (Table 1). The superficial tumor margin of the breast was measured on the pathology specimen and recorded for each patient. The average for all specimens was >.70 cm and was