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Recurrence Rate After Skin Sparing Mastectomy and Immediate Reconstruction

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Background: We present local recurrence (LR), systemic recurrence (SR) & disease-free survival (DFS) after Skin-sparing mastectomy (SSM − removal of all breast tissue including nipple-areola complex with preservation of breast skin) in operable breast cancer as there is relative lack of evidence in recent literature regarding its safety in light of increase in in-situ disease and advances in adjuvant hormone therapy (especially aromatase inhibitors).

Materials and Methods: Prospectively recorded database of 95 patients who had SSM over 4 years period (April 2006-July 2010) were reviewed. 13 patients were excluded as they had either risk-reducing (for high-risk family history) or prophylactic (after contra-lateral cancer) SSM.

Results: 81 patients with median age of 51.7 (31.5–66.1) years had 82 SSM with immediate reconstruction (58 implant based; 23 LD flap). Decision for SSM was based on tumour size relative to breast size, multi-focality (n-12), unclear margin at conservation surgery or simply patient choice. Tumor quadrants involved were multi-quadrant (34%), upper outer (21%), central (17%), upper inner (11%). Tumour types were invasive ductal (37.8%), invasive lobular (7.3%), DCIS alone (37.8%). Median tumour size was 22 (1−86) mm including pure in-situ disease of 20 (1−85) mm. Median clear distance was 5 (0−45) mm including pure in-situ disease of 5 (0−40) mm. Sentinel node was positive in 18.3% (excluding pure in-situ disease). Median NPI was 3.54 (2.1–6.98), ER positive (84%, pure in-situ-70.6%), HER2 positive (8.5%). 17.1% patients received Radiotherapy to breast & 37.8% patients received hormone therapy (tamoxifen-24.4%, upfront AI-4.9%, switch regime-8.5%, tamoxifen to exemestane at 2 years). 8 (9.6%) patients had infection/wound healing problems with loss of implant in 3 (3.6%). At a median Follow-up of 23.8 (8−64) months, there were no LR and 2 SR following invasive disease (brain & liver-1; liver-1) with a median DFS of 24.4 (6.1–61.9) months (26.9, 10.8–61.9 in pure in-situ disease).

Conclusions: The LR and SR rates are lower than current literature (minimum 6% LR & 7% SR) for T1-T2 tumors. It also confirms that immediate reconstruction does not compromise adjuvant therapy and that adjuvant radiotherapy does not compromise immediate reconstruction. Therefore, SSM with immediate reconstruction appears to be even safer option both surgically and oncologically in light of advances in adjuvant therapies.

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Partial Mastectomy Reconstruction During Breast-conserving Surgery − Classification of Oncoplastic Techniques

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Background: Most patients presenting with breast cancer are treated by breast-conserving therapy (BCT). Some of these patients present with poor cosmetic results after surgery. To avoid partial defects after BCT a wide spectrum of reconstructive techniques have been published during the last years − a concept termed oncoplastic breast surgery. To improve clinical utility of oncoplastic breast-conserving surgery we developed a classification of oncoplastic techniques with standardization of indications and surgical performance.

Materials and Methods: We prospectively defined five major principles in oncoplastic breast surgery (Krämer et al., Breast Care 2007; 2: 299–306) based on the localization, size of the segmental resection defect, size of the breast and the necessity for skin resection during breast-conserving therapy. These major principles are: BCT-glandular rotation, BCT-dermoglandular rotation, BCT-tumoradapted reduction mammoplasty, BCT-thoracoepigastric flap, BCT-latissimus dorsi flap. We analyzed the clinical practicability and the cosmetic results. All patients received adjuvant postoperative radiotherapy. Systemic adjuvant treatment was applicated according to international guidelines. 35% of the treated patients received neoadjuvant chemotherapy. A tumor-free resection margin was mandatory and achieved in 91% during first surgery, while in 5% secondary mastectomy was required.

Results: Between November 2008 and November 2011 we performed 952 breast-conserving operations in 913 patients. For reconstruction of the partial resection defect during segmental resection the defined five oncoplastic principles were used as follows: glandular rotation (n = 549; 58%), dermoglandular rotation (n = 149; 16%), tumoradapted reduction mammoplasty (n = 135; 14%), thoracoepigastric flap (n = 27; 3%) and latissimus dorsi flap (n = 92; 9%). Partial mastectomy defects could be reconstructed during BCT with these five oncoplastic principles in 97%. The cosmetic results were good or excellent in 95%.

Conclusion: The use of five defined oncoplastic principles allows the reconstruction of segmental resection defects during breast-conserving therapy with highest clinical applicability and results in favourable esthetic outcomes. This approach might be useful in extending the indications for breast-conserving therapy.

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Single Center Experiences with Intraoperative Radiotherapy as a Boost During Oncoplastic Breast-conserving Surgery

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Background: Breast-conserving surgery followed by external beam radiation therapy (EBRT) to the whole breast in combination with external boost radiation therapy has become the standard of care for most patients with localised early breast cancer. Breast-conserving surgery (BCS) is performed in an oncoplastic approach with tumor-specific immediate reconstruction of the partial mastectomy defect (Krämer et al., Breast Care 2007; 2: 299–306). In the attempt to further improve local outcome in breast-conserving therapy we introduced intraoperative radiotherapy (IORT) with low-kilovoltage X-rays as a boost during oncoplastic BCS followed by EBRT.

Material and Methods: Between February 2010 and July 2011, a total of 100 patients were treated with IORT as a boost (20 Gy, 50 kV x-rays; Intrabeam System, Carl Zeiss Surgical, Oberkochen, Germany) during primary oncoplastic breast-conserving surgery, followed by whole-breast radiotherapy. After segmental resection of the tumour during oncoplastic BCS and frozen-section analysis to reveal tumor-free resection margins the adequate size of the bowel-applicator for IORT-boost was evaluated. After mobilisation of glandular tissue the segmental resection borders were narrowed to the applicator using purse-string sutures. Resection defects were definitely reconstructed after IORT-boost using the predefined oncoplastic principles to achieve optimal esthetic results after BCS.

Results: Median age was 61.8 (range 30−74) years. There were T1 and T2 tumours in 76 and 24 patients, respectively, and N0, N1 and N2 disease in 69, 21, and 10 patients, respectively. The used radiation applicator-sizes ranged between 25 and 40 mm in 79% of the patients. The mean radiation time was 21 (range 18−32) minutes. IORT boost radiotherapy was combined with oncoplastic principles for partial mastectomy reconstruction: glandular rotation (n = 86), dermoglandular rotation (n = 7), tumoradapted reduction mammoplasty (n = 7). With a median follow-up of 7.6 months 1 patient had a chronic skin toxicity with percutaneous fistula, while 2 patients developed liponecrosis and 3 patients a seroma which was punctured.

Conclusion: IORT as a tumour bed boost with low-kilovoltage x-rays is clinically applicable with low toxicity and complication rates. The method supports the close interdisciplinarity between radiation therapy and breast surgery and can be combined with oncoplastic principles in BCS.

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Lymph Node Metastases Detection by FDG-PET and Sentinel Node Biopsy in Breast Cancer Patients: Clinical and Biological Meaning

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Background: Sentinel node (SN) biopsy has become the reference method for the evaluation of axillary involvement in breast cancer (BC), for decision of the need of axillary surgery and/or adjuvant treatment. Positron Emission Tomography (FDG-PET) is a non-invasive tool able to evaluate the regional nodes in BC by a metabolic-dependent, bio-molecular related way. In 1999, after our previous PET experience on nodal involvement in BC we started a prospective non randomised study in order to compare the two methods in terms of sensibility, accuracy and predictive value. The main aim was to evaluate the prognostic information given by PET, due to the work