percentage of patients can keep their NAC. If the breast tissue and all galactophoric ducts can be seperated completely from the NAC during subcutaneous mastectomy (SCM), conservation of the NAC is feasible even in large, central and retroareolar tumors. The only condition is that the skin is not infested by malignancy.

Material and Methods: From July 2003 to April 2006, we performed 109 SCMs on 96 patients. 96 of these breasts showed indications for modified radical mastectomy (MRM) or ablatio simplex. 78 due to invasive carcinoma (MRM indication) and 16 of whom had extensive DCIS (indication for simple ablation). At least 33 of the breasts had malignancy within the areola margin. After dissection of the complete mammary gland tissue, the skin envelope with the areola is folded inside out and all galactophoric ducts and any subjacent tissue on the areolar base are precisely dissected under the surgeons' visual control. Of this tissue, frozen sections and HE histopathologic examinations are requested to decide whether the NAC can be preserved or not.

Results: We found the need to resect the NAC in 13 (12%) of 109 breasts, altering the procedure to a skin sparing mastectomy (SSM). After a follow-up of 20−54 (median 34) months no recurrence within the NAC was observed. One local recurrence was detected on the thoracic wall and 2 of 96 patients developed distant metastases. One death was recorded. Occasionally, partial necrosis of the nipple occured, leaving a depigmentation of the skin but maintaining a good or excellent cosmetic result in most cases. Necrosis of the NAC which had to be subjected to surgical intervention occurred in only one patient.

Conclusion: SCM, including NAC conservation, may be performed according to MRM indications if an intraoperatively frozen section (and the corresponding HE-histopathology) of the NAC closest tissue is free of tumor. The remaining contraindications for SCM are: extensive tumor involvement of the skin, inflamatory breast cancer, and clinical suspicious nipple. The suggested technique of SCM could supersede MRM and ablatio simplex. Thus, it helps to decrease mutilation in patients especially with large and/or central tumors.

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Results of breast conserving treatment including perioperative HDR brachytherapy boost or including HDR boost following full teleradiotherapy regimen

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Aim: The comparison of early breast cancer treatment results in patients receiving HDR brachytherapy boost perioperatively or receiving the boost after full course of external radiotherapy.

Material and Methods: Between January 1998 and May 2003, 40 breast cancer patients received intraoperative Ir 192 HDR brachytherapy as part of their breast conserving treatment. The second group of 75 women received brachytherapy boost after completing full teleradiotherapy regimen. No statistically significant difference in age, tumor size or pTNM was observed between these groups. All patients had tumorectomy and axillary lymph node dissection performed. In the first group, brachytherapy catheters were implanted during the operation and HDR boost was performed immediately. Later these patients received full course of teleradiotherapy to the entire breast via tangential fields to a total dose of 4250 cGy (250 cGy per fraction) or 5000 cGy (200 cGy per fraction). In the second group the boost was performed after the teleradiotherapy (using the same regimen). The dose of boost was 10 Gy in 1 fraction in both groups.

Results: The median follow-up was 115 months. No local recurrence was observed in the first group. Three patients of the second group (receiving the boost after teleradiotherapy) developed local recurrences and had simple mastectomy. Distant metastases were observed in 3 cases in the first group and in 6 cases in the second one. Five patients died: 2 in the first group (the cause of 1 death was uterus cancer) and 3 in the second (1 patient died in a car accident). No data is available in 5 cases. The volume of irradiated tissue during HDR boost was different between two groups ($p < 0.001$). The cosmetic effect, as measured by 4-point scale, was satisfactory and comparable in both groups.

Conclusions: The perioperative HDR brachytherapy boost is a safe procedure. The overall survival and cosmetic outcome in both groups is similar.

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Double vascular anastomosis in DIEP free flap reduces morbidity in breast reconstruction – A prospective study about 173 patients

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Objective: In order to evaluate, in our experience, the morbidity of the abdominal skin and fat microsurgical free flap (DIEP), using a double vascular anastomosis, arterial and venous.

Patients and Methods: DIEP was used for 173 consecutive breast reconstructions (BR). One hundred fifty patients (86.7%) had an immediate breast reconstruction (IBR) and twenty three patients (13.3%) a delayed breast recontruction (DBR). In 167 (96.5%) cases BR was unilateral and in 6 cases bilateral (3.5%).

The mean age at time of surgery was 52 years (youngest 28 ans, oldiest 72 ans). One patient out of three had a BMI > 25. Among 26 patients, a primary chemotherapy was done, followed by a skin sparing mastectomy with IBR. For microsurgical vascular anastomis, we used an artery and vein duplication on internal mammary or thoraco dorsal pedicles.

Results: Immediate morbidity was: 9 re-anastomosis (5.2%), 8 flap necrosis (4.6%) and 5 total necrosis (2.9%), 6 hematomas (3.6%). Secondary morbidity was: 3 abdominal donor site necrosis (1.7%) and 2 eventrations (1.1%), 6 hernias (4.8%). The average hospital stay was 9 days.

Conclusion: DIEP free flap and twice vascular anastomosis can be performed with an acceptable complication rate in multidisciplinary team who realise frequently microsurgical breast reconstruction procedure, after primary chemotherapy as well. Delayed breast reconstruction procedure in our experience must be reconsidered.

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A comprehensive approach to measure cosmetic and functional results of breast conserving therapy – design and first results of a pilot study

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Background and Aim: Cosmetic and functional outcomes as important influencing variables of quality of life can be measured subjectively (qualitatively) and objectively (quantitatively). There is no generally accepted way to study and report these outcome variables. Therefore, in our study we assess different approaches to measure cosmetic and functional results.

Material and Methods: Eligible for participation in the study are patients who are scheduled for breast conserving surgery of primary, one-sided breast cancer. In respect to the above described subjective and objective aspects regarding cosmetic and functional outcome of breast conserving therapy we apply three different study instruments: 1. Patient questionnaires: We use the EORTC QLQ C 30-BR 23, a generally accepted tool to measure quality of life in breast cancer patients. Further, we introduce a German version of BCTOS (Breast Cancer Treatment Outcome Scale) which is specifically developed to assess cosmetic and functional variables after breast conserving therapy. 2. BCCT.core (breast cancer conservative treatment cosmetic results) software to analyze standardized photographs. It measures all well-known indices correlated with the overall aesthetical result. 3. Clinical examination: We measure both differences in arm circumference and the range of motion of the shoulder. Every patient will be assessed using all three methods at different times: Pre- and postoperatively, before and after radiation and at long term follow-up visits.

Results: Since 01 September 2007 (until 15 January 2008), 109 patients entered our department who met the inclusion criteria (primary, one-sided breast cancer, planned to get breast conserving surgery). Out of those we included 103 patients into the study. 91 patients completed the surgical part of the procedure. So far, there are 15 patients who had to undergo a second or third operation. To summarize: we included 95% of screened patients; during the first part of the study, i. e. pre- and postoperative visits, there is only a drop out rate of 4%. Regarding the second part of the study, i. e. the visits before and after radiation, there is no conclusion yet to be drawn du to the short enrolment of the study.

Conclusions: These first results underline that it is possible to evaluate different aspects and instruments of cosmetic and functional outcome in a prospective setting.