patient groups had poorer functioning and more depression ($P < 0.001$). Among the patient groups, the LD group reported lower scores for body image ($P = 0.007$) and future perspective ($P = 0.023$) than the BCS group. In the LD group, patients who received neoadjuvant chemotherapy reported lower scores for future perspective and higher scores for depression than those who did not receive neoadjuvant chemotherapy ($P < 0.001$).

Conclusion: The BCS and LD groups did not differ in oncologic outcome, and the QoL of patients in the LD group was not always good. Mastectomy with immediate reconstruction should be considered carefully and tailored to the patient's needs and characteristics.

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Skin reducing mastectomy

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Background: we propose an alternative technique to reconstruct large and medium sized ptotic breasts in a single stage procedure using anatomical permanent implants and a dermal-muscle pocket.

Material and Methods: we enrolled 60 patients fulfilling the oncological criteria for skin-sparing mastectomy and presenting with large or medium size breasts whose areola-to-inframmary fold distance was more than 8 cm and notch-to-areola distance was more than 25 cm. All operations were performed as a single-stage procedure. After a careful preoperative assessment, conventional incisions for breast reduction (wise pattern) were used with the preservation of an inferior dermal flap. Subsequently this was sutured to the inferomedial fibers of the pectoralis major muscle to create a dermo-muscular pocket. An anatomical prosthesis was then allocated into the pouch, that was closed laterally with the serratus anterior fascia. Skin flaps were finally closed down to the inframmary fold.

Results: a total of 71 procedures were performed on 60 patients. The medium size of the anatomical implants employed was 444.3 cc. A contra-lateral procedure was carried out on 37 patients. In 83.7% of them a reduction of the contralateral breast was performed. At a median follow-up of 35 months, the implant removal rate was 16.9%. The overall complication rate was 22.5% (infection-skin necrosis). When the procedure was accomplished in smokers a higher, although not statistically significant, complication rate was demonstrated (27.2% smokers vs. 22.7% non smokers).

Conclusion: The results of this study confirm our previous reports about implant based breast reconstruction. All breast, irrespectively of mammary shape and size, can be reconstructed with medium size implants and, if required, contralateral adjustments. A one stage procedure could also allow immediate radiotherapy on permanent prosthesis if post-operatively required. The overall complication rate is in keeping with data on inverted T mastectomies reported in literature. Improvement in this field could be obtained with more restricted inclusion criteria. It is advisable to avoid this procedure in smokers or women with skin of poor quality. Alternatively a temporary expander in the first stage of a two stage procedure may avoid tension and sufferings of the dermal flap at the T junction.

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A prospective observational study on the oncological outcome and patient satisfaction with skin sparing mastectomy and immediate breast reconstruction

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Introduction and Background: The management of early breast cancer (BC) with skin-sparing mastectomy (SSM) and immediate breast reconstruction (IBR) is not based on level-1 evidence. In this study, the oncological outcome, post-operative morbidity and patients' satisfaction with SSM and IBR using the latissimus dorsi (LD) myocutaneous flap and/or breast prosthesis is evaluated.

Methods: 137 SSMs with IBR (10 bilateral) were undertaken in 127 consecutive women, using the LD flap plus implant (n = 86) or implant alone (n = 51), for early BC (n = 130) or prophylaxis (n = 7). Nipple reconstruction was performed in 69 patients, using the trefoil local flap technique (n = 61), nipple sharing (n = 6), skin graft (n = 1) and Monocryl mesh (n = 1). Thirty patients underwent contra-lateral procedures to enhance symmetry, including 19 augmentations and 11 mastopexy/reduction mammoplasties. A linear visual analogue scale was used to assess patient satisfaction with surgical outcome, ranging from 0 (not satisfied) to 10 (most satisfied).

Results: After a median follow-up of 36 months (range = 6–101 months) there were no local recurrences. Overall breast cancer specific survival was 99.2%, 8 patients developed distant disease and 1 died of metastatic BC. There were no cases of partial or total LD flap loss. Morbidities included infection, requiring implant removal in 2 patients and 1 patient developed marginal ischaemia of the skin envelope. Chemotherapy was delayed in 1 patient due to infection. Significant capsule formation, requiring capsulotomy, was observed in 87% of patients who had either post-mastectomy radiotherapy (PMR) or prior radiotherapy (RT) compared with 13% for those who had not received RT. The outcome questionnaire was completed by 82 (64.6%) of 127 patients with a median satisfaction score of 9 (range = 5−10).

Conclusion: SSM with IBR is associated with low morbidity, high levels of patient satisfaction and is oncologically safe for T(is), T1and T2 tumours without extensive skin involvement.

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Extended indications for skin conservation of the nipple areola complex during subcutaneous mastectomy

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Background: Conventional breast cancer surgery in case of a non breast conserving procedure still includes the routine excision of the nipple areolar complex (NAC) optional followed by nipple reconstruction. Numerous authors consider multiple predictive factors to decide whether the Nipple Areola Complex (NAC) can be conserved or not during mastectomy. These are: tumour-nipple distance, tumour size, axillary lymph-node status and lymph vascular invasion. Thus only a very limited percentage of patients can keep their NAC.

If the breast gland tissue and all galactophoric ducts can be separated completely from the NAC during subcutaneous mastectomy (SCM), conservation of the NAC is feasible even in large, central and retroareola tumours.

Patients and Methods: (www.clinicaltrials.com ID: NCT00641628) From July 2003 to Mai 2006, we performed 109 SCMs on 96 patients. 94 of these breasts showed indications for modified radical mastectomy (MRM) or ablatio simplex. 78 due to invasive carcinoma (MRM indication) and 16 of them had extensive ductal carcinoma in situ (DCIS), (indication for simple ablation). At least 33 of the breasts had malignancy underneath the skin within the areola margin (central located tumours). After dissection of the complete mammary gland tissue, the skin envelope with the areola is folded inside out an all galactophoric ducts and any subjacent tissue on the areola base are precisely dissected under the surgeons' visual control. Of this skin-closest retroareola 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 dissect the NAC in 13 of 109 breasts (12%), altering the procedure to a skin sparing mastectomy (SSM). Necrosis of the NAC which had to be subjected to surgical intervention occurred in only one of the conserved 96. After a follow-up of 20−54, median 34 months no recurrence within the NAC was observed. One local recurrence on the thoracic wall and one axillary recurrence were detected. 2 of 96 patients developed distant metastases. One death was recorded. Occasionally, partial necrosis of the nipple occurred, 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 tumour. The remaining contraindications for SCM are: extensive tumour involvement of the skin, inflammatory breast cancer and clinical suspicious nipple.

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Criteria of oncoplastic approach of local advanced breast cancer after neoadjuvant chemotherapy

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Introduction and Background: It is considered that the neoadjuvant chemotherapy (NC) offers several advantages in the treatment of local advanced breast carcinoma (LABC), especially as the possibility of conservative surgical treatment. Yet the literature is scarce and controversial and this study seeks to clarify criteria that indicate an oncoplastic treatment after neoadjuvant therapy.

Material and Methods: Cross-sectional study, prospective, nonrandomized. Between the period 2008 to 2009, evaluated 79 female patients, those with LABC, included in a research protocol for specific treatment NC at HOSPITAL DE CANCER BARRETOS. We evaluated the variables related to breast imaging studies, measures tumor (dermatography) and the distance between the tumor and the skin, which were related by correlation analysis, with the gold standard values of the pathological anatomy. An analysis with descriptive purpose of evaluating the different points between the measures was also made.

Results: We evaluated 79 patients, excluded from the protocol 40 (50.6%), 16 remain under treatment and 23 completed chemotherapy and underwent surgery. The average size of tumors was 8.4 cm (4−17). The clinical response showed a complete response, partial, stable disease and progression in 8.7%, 60.9%, 13.0% and 17.4% of patients. In clinical and radiological complete response was observed, observing a partial response, stable disease and progression in 65.2%, 21.7% and 13.0% of patients. Held 13% of skin-sparing mastectomy, 17.4% of quadrantectomy with glandular remodeling, 4.3% were contralateral breast lift, but were made radical mastectomy 39.1% and 30.4% modified radical mastectomy. The pattern of pathological response was different, occurring macrofragmentation of single and multiple tumor, with or without carcinoma in situ.

Conclusions: The pathological findings showed a wide range of possibilities. Futhermore they corroborate the need for resection of the tumor area defined before chemotherapy. Most of the remaining findings showed lesions often not palpated or hidden methods of image. The oncoplastic technical approach, as well as skin-sparing mastectomy with immediate reconstruction strategy allows a wide and safe resection, including always the previous tumor area.

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Updated results of a monocentric phase II trial of Axillary Reverse Mapping (ARM) in breast cancer

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Background: The aim of axillary reverse mapping (ARM) is to preserve arm lymphatics in breast cancer patients submitted to surgical axillary staging.

Materials and Methods: From June 2007 to November 2009, 61 patients requiring axillary dissection (AD) were submitted to ARM. One ml of Patent Blue dye was injected in the ipsilateral arm and all blue nodes identified during AD were sent separately for pathological examination. Main variables associated with the detection rates of blue lymphatics, the pathological status of blue and non blue nodes and the complications of the procedure were analyzed. The study is ongoing and more patients are being recruited.

Results: Identification rates of blue lymphatics and blue nodes were 70% and 54% respectively. Blue node identification was influenced by the time elapsed between injection of blue dye and surgery ($p = 0.002$), but not by the learning curve of the procedure. Although the blue node was clear of metastases in 29 out of 33 patients, 5 cases with extensive nodal metastatic involvement (pN2a and pN3a) showed breast cancer metastatic cells in the blue nodes as well. The only side effect of the procedure was represented by skin tattooing at the injection site, which disappeared within 4 months in almost 80% of the cases. More updated results will be presented at the meeting.

Conclusions: In patients with clinically negative axillary nodes further study is warranted to assess whether ARM may be used to spare the lympathics from the arm, whereas in the presence of extensive nodal disease this technique may identify metastatic blue nodes, demonstrating that there is not reliable separation of arm and breast lymphatic pathways.

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Phase I and II studies on radiofrequency ablation for early breast cancer patients

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Background: To evaluate the safety and reliability of thermal ablation therapy instead of breast-conserving surgery (BCS), we are performing radiofrequency ablation (RFA) for early breast cancer patients.

Patients and Methods: First, we conducted phase I study for T1N0 breast cancer patients without extensive intraductal components. Under general anesthesia, RFA followed by BCS was performed. Resected specimens were examined at 5-mm intervals by hematoxylin–eosin (H&E) staining and nicotinamide adenine dinucleotide (NADH) diaphorase staining.

Results: Thirty of the 34 eligible patients were enrolled. RFA-related adverse events were observed in 9 patients: 2 skin burn and 7 muscle burn. Twenty-six cases (87%) showed pathological degenerative changes in tumor specimens with H&E staining. In 24 of the 26 cases (92%) examined by NADH diaphorase staining, tumor cell viability was diagnosed as negative.

Conclusions: As RFA proved to be reliable and feasible, phase II study started for T1 and sentinel node-negative breast cancer patients with or without primary chemotherapy. Primary endpoint is breast deformity after RFA and secondary endpoints are ipsilateral breast tumor recurrence and quality of life. We will discuss future direction of RFA in early breast cancer.

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Revision and contralateral surgery rate after skin-sparing mastectomy with immediate breast reconstruction

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Background: Immediate breast reconstruction (IBR) after mastectomy using silicone implants or autologous tissue is the most effective procedure to decrease psychological trauma in breast cancer patients.

With the lapse of time, skin-sparing mastectomy with different reconstructive options was advocated as an oncologically safe method with very good aesthetic results. But late results of this surgical approach, including the rate of complications, revision surgery and contralateral surgery aimed at achieving symmetry are not well established.

Materials and Methods: From 1995 to 2008, 144 skin-sparing mastectomies with IBR were performed in 141 breast cancer patients.

Three patients have DCIS, 19 have I stage of breast cancer, 105 − II stage and 14 − III stage. Locoregional recurrence rate was 2.8%, in patients with median follow-up 6.5 years.

All patients were divided in two groups according to the reconstruction type. There were 76 reconstructions using TRAM-flap, and 68 with silicone implants.

Results: Overall complication rate in group of TRAM-flap was 17.1% including skin necrosis, partial flap necrosis and abdominal wall bulging. Seroma, skin flap necrosis and capsular contracture were established as complications in implant group and they were more frequent (20.5%).

Complications and asymmetry of reconstructed and contralateral breast were the indications for 17 secondary surgeries in TRAM-flap group. There were also 9 revision surgeries including abdominal wall repair, flap lift and creation of inframammary fold in new position in cases of flap ptosis. In 2 cases the volume and the projection of the reconstructed breast were enhanced by a silicone implant. Contralateral surgeries were performed in 7 patients.

In implant group 35 cases required a secondary surgery. In 10 patients the implant was removed due to seroma or skin flap necrosis with implant exposure. Six implants were changed with capsulectomy due to capsular contracture Baker grade III-IV. There were three successful delayed implant-based and one TRAM-flap breast reconstructions after failed implant reconstructions.

Thirteen patients have undergone the correction of the opposite breast to achieve symmetry. As a result, revision rate in TRAM-flap group vs. implants group was 11.8% and 32.3%, and contralateral surgery aimed at achieving symmetry was 10.5% and 19.1% respectively.

Conclusions: IBR is a complex surgical procedure, often requiring additional revision or correction of the opposite breast to obtain the same volume and shape in both breasts.

As we have seen, implant related complications such a seroma and capsular contracture make some limitation of the implant-based reconstruction method in contrast with TRAM-flap, despite of less cost and traumatic effect. Same tendency observed, when we compare revision rate and frequency of contralateral surgeries to obtain symmetry.

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Locoregional and systemic recurrence of breast carcinoma after breast conserving surgery versus modified radical mastectomy

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Background: Breast Conserving therapy (BCT) has been shown to be as effective as mastectomy in the treatment of early stage (I, II) breast cancer. However evidence of its safety and efficacy over long term in patients with tumors larger than 5 cm or stage III_A patients are limited but it is exclusively related to Breast size.

This study was designed to compare locoregional recurrence (LRR) and distant metastasis (DM) in the two treatment groups: Breast conserving surgery plus radiation versus modified radical mastectomy. Also it addresses the effect of locoregional and systemic recurrence on overall and disease free survival in the treatment arms.