

from deprived areas were not offered IR, but the ones who refused had equal distribution.

**Conclusions:** none of the reasons for not offering IR represent absolute contraindications. Decisions about refusal are based mostly on patients' subjective intuitions. Further, a greater proportion of patients from deprived areas were not offered IR, while from affluent areas were more likely to be offered. We believe, therefore, that detailed counselling about reconstruction of each patient is an absolute necessity.

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Poster

#### **Incomplete Tumour Excision Margins During Therapeutic Mammoplasty – Assessment of Predictive Factors**

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**Introduction:** Pathologically clear tumour resection margins are particularly important during therapeutic mammoplasty (TM), since re-excisions may not be oncologically safe. Therefore, most patients with incomplete margins will undergo completion mastectomy. In this study our aim was to identify predictive factors for incomplete excisions in TM.

**Methods:** Data of 62 patients who underwent TM were retrospectively analysed. Patients' and tumour characteristics and operative techniques were correlated with assessment of pathological margins (Fischer exact and t-tests).

**Results:** 11 of 62 patients (17.7%) had incomplete pathological margins on final histology. Incomplete tumour resection margins correlated with pathological whole tumour size (incomplete: 36.7 mm [12–62] vs. complete: 25.5 mm [8–55];  $p=0.023$ ), presence of multifocal cancers (incomplete: 5/11 vs. complete: 5/51;  $p=0.012$ ) and presentation (incomplete: 11 symptomatic vs. complete: 19 screening, 22 symptomatic;  $p=0.005$ ). Application of intraoperative specimen X-ray favoured complete excision, too (spec. X-ray: 12.5% incomplete vs. no spec. X-ray: 20%). However, there was no statistical association found with patients' age, BMI, tumour location, radiological tumour size, techniques of TM, weight of excised specimen or tumour grade.

**Conclusions:** Although the above patient number is relatively low, our data suggest that more precise oncosurgical planning is advised in case of large and multifocal cancers. Perhaps routine use of intraoperative specimen X-ray would facilitate complete excision during TM.

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Poster

#### **Ultrasound-guided Lumpectomy is Associated with Clear Resection Margins in Palpable Breast Cancer**

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**Background:** Palpation-guided lumpectomy often results in an unnecessarily wide resection of adjacent healthy breast tissue, while the rate of tumor-involved resection margins is still high. The purpose of this study was to evaluate ultrasound guided surgery for palpable breast cancer with comparing the standard palpation-guided surgery in terms of the extent of healthy breast tissue resection, the percentage of tumor-free margins, and cosmetic outcomes.

**Materials and Methods:** Patients with breast cancer undergoing lumpectomy with using ultrasound were included. Ultrasound margins measured intraoperatively were prospectively recorded and compared with pathology margins. A cohort of 80 women who underwent palpation-guided lumpectomy as used for a comparison group. Data included patient age, BMI, menopausal status, tumor type, size and location, N stage, tumor grade, the presence of lymphovascular invasion and multifocality, and receptor status. Intraoperative findings and cosmetic outcomes were also analysed.

**Results:** A total of 84 women underwent US-guided lumpectomy, and 80 women underwent palpation-guided lumpectomy. There were no difference between 2 groups with respect to patient demographics and tumor characteristics. The rate of re-excision was 17% for palpation-guided surgery group, and 6% for US-guided surgery group ( $p=0.03$ ). There was good correlation between closest margins recorded by US and pathology margins ( $r=0.76$ ,  $p=0.01$ ). Comparing resection volume with calculated from detailed postoperative pathology reports, we found that the volume of resection was significantly larger in the palpation guided group despite the similar size of tumor ( $p=0.048$ ). Cosmetic outcome of surgery was

equivalent between groups. Fifty-five of 60 patients (92%) in the palpation-guided lumpectomy group and 67 of 71 patients (94%) in the US-guided group has been rated the cosmetic outcome good or excellent.

**Conclusions:** Ultrasound-guided lumpectomy for palpable breast cancer is a simple, convenient, and accurate technique to ensure adequate margins while keeping the resection volume to a minimum. Most importantly, US-guided surgery decreases the need for second surgeries. Just as US has become a standard tool of the breast surgeon's office practice, we propose the role of intraoperative US during excision of palpable breast tumors as well.

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Poster

#### **The Fleur-de-lys Modification for Latissimus Dorsi Flap Breast Reconstruction**

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**Background:** The fleur-de-lys modification of latissimus dorsi (LD) breast reconstruction has been described to address skin deficiencies in the delayed setting when achieving projection and a rounded inferior pole is challenging, particularly after chest wall radiotherapy.

**Methods:** Retrospective casenote review of patients undergoing LD breast reconstructions performed consecutively by the same Consultant between January 2005 and June 2011.

**Results:** Eighty-two patients underwent 42 immediate and 52 delayed LD breast reconstructions (25 conventional and 27 modified fleur-de-lys). The median age was 53 (21–65 years) with a mean BMI of 26.4 (19.5–42.5 kg/m<sup>2</sup>). Follow-up ranged from three to 77 months. The median length of stay after unilateral immediate, delayed conventional and delayed fleur-de-lys was 7 days. No patient experienced latissimus dorsi flap loss. There were 5 minor complications in the immediate group, 3 in the conventional delayed and 7 in the modified fleur-de-lys delayed group – of which 5 had received radiotherapy. These were delayed healing of LD flap skin anteriorly (1), delayed healing of donor site (1), haematoma (2) and infection (3).

**Conclusion:** A fleur-de-lys modification is a safe reproducible adjunct to consider when planning latissimus dorsi breast reconstruction, particularly after radiotherapy in the delayed setting.

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Poster

#### **Phase II Study on Radiofrequency Ablation for Early Breast Cancer Patients**

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**Background:** We previously conducted phase I study on radiofrequency ablation (RFA) followed by breast-conserving surgery (BSC). Complete pathological ablation of breast tumour was shown in 26 of the 30 patients registered (87%). RFA was feasible and reliable for T1N0 breast cancer patients without extensive intraductal components (Breast, 18:130–4, 2009). To examine clinical utility of RFA instead of BCS, we started a phase II trial in 2009.

**Patients and Methods:** T1 and sentinel node-negative breast cancer patients treated with or without primary chemotherapy were enrolled. Primary endpoint is breast deformity after RFA and secondary endpoints are ipsilateral breast tumor recurrence and quality of life examined with FACT-B. RFA was performed using a LeVeen electrode and an RF-2000 generator (Boston Scientific Corporation, USA) following Izzo's protocol (Cancer, 92:2036–44, 2001). Breast deformity and breast imaging were recorded at 3, 6 and 12 months after RFA.

**Results:** As of October 2011, 16 of the 19 eligible patients agreed to undergo RFA. There were no severe adverse events in all patients except pain relief with NSAID for a few days. Most patients received adjuvant therapy and breast irradiation. MR mammography showed degenerative change with ring enhancement that was consistent with red ring observed in the margin of ablated breast specimen at phase I study. All patients have been disease-free at the median follow-up of 18 months.

**Conclusions:** RFA is a promising technique for local control of breast cancer. MR mammography is also useful for monitoring ablated breast lesion.

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Poster

#### **Trans-nipple Z-plasty with Interceed Insertion Technique for Focal Defect of Breast**

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**Introduction:** Numerous oncoplastic techniques with absorbable materials had been reported for breast conserving surgery. Authors introduce the

clinical application of trans-nipple Z-plasty with intercede insertion to filling focal defect of breast after breast conserving surgery.

**Methods:** From Sep. 2010 to Sep. 2011, 15 female patients with breast mass which is smaller than 1 cm undergone lumpectomy by trans-nipple incision. And the encapsulated absorbable adhesion barrier(interceed®) pocket which was sewn with poliglecaprone suture(monocryl®) was turned inside out, ten to fifteen pieces of 5 cm-monocryl suture were put into the pocket. Then the compound was inserted to focal defect of breast and double skin technique was performed. The cosmetic outcomes were estimated by four-point scoring system by patient herself.

**Results:** After tumor resection with 2 cm of safety margin, margin status was evaluated by frozen biopsy in malignancy cases. Mean volume loss of breast was 31.1g and mean tumor size was 1.3 cm. Tumor types were invasive carcinoma in 8 cases, carcinoma in situ in 2 cases and benign lesion in 5 cases. Although the drainage tube was not inserted, there was no significant complication such as seroma or infection. After 4 weeks, the interceed compound showed fibrotic change in ultrasound. The cosmetic outcome was excellent in 10 cases, good in 3 cases and fair in 2 cases.

**Conclusion:** Trans-nipple Z-plasty with intercede insertion technique would be useful volume replacement technique for focal deformity without significant complication after breast surgery.

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Poster

#### A New Development in Sentinel Lymph Node Biopsy in Breast Cancer Using a Combination of Molecular and Histological Methods

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**Background:** Sentinel lymph node biopsy (SLNB) has become a standard surgical method for clinically node-negative breast cancer. In addition to histological diagnosis using frozen sections, new intraoperative diagnostic performance of OSNA assay (one-step nucleic acid amplification test that amplifies CK19 mRNA) is expected to detect lymph node metastases more precisely, even in molecular level. However, significance and validity of OSNA assay with or without histological method has not been studied enough, and the significance of positive sentinel lymph node only by OSNA method (pNmol+) need to be evaluated.

**Methods:** Comparing 243 case of sentinel node biopsy(SNB) using a combination of molecular and histological technique in clinical node-negative breast cancer, we examined the necessity of axillary lymph node dissection(ALND), and assessed the significance of ALND in only molecular node positive (pNmol+) in early staged breast cancer. The excised SLNs were cut into 2 mm slices and alternate slices were prepared for OSNA and histological exam.

**Results:** The concordant rate with molecular technique (OSNA method) and histological technique was 91.5%, and the sensitivity and specificity of OSNA was 90.3% and 93.3% respectively. The positive rate of OSNA was 19.6% compared with 13.8% for histological method. OSNA method had higher positive rate compared with that of histological method. Of all OSNA-negative cases in SNL, only one case was admitted micrometastasis in non-SNL, and when OSNA-positive/histology-negative (pNmol+) cases, dissected axillary lymph node has no metastases(macro nor micro) (0/13).

**Conclusions:** Because of a high sensitivity of OSNA assay, it may cause an increasing number of unnecessary intraoperative ALND, but on the other hand, the OSNA assay can decrease the number of women who require a second surgery for ALND. There may be a possibility of omitting the unnecessary procedure for ALND by further investigation of pNmol+, and we may be able to predict the state of metastases of non-SNL by using a combination of molecular and histological method.

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Poster

#### Free Omental Flap for Partial Breast Reconstruction After Breast Conserving Surgery

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**Background:** The latissimus dorsi flap is one of the most commonly used techniques for partial breast reconstruction, but has the disadvantages of donor-site morbidity and deformity. Laparoscopically harvested omental flap (OF) may compensate for these disadvantages. Since April 2002, we have performed more than 140 cases of immediate partial breast reconstruction (IPBR) with the OF. The OF can be used as a pedicled flap or a free flap for volume replacement. Here, we report our initial experiences of IPBR using a free omental flap (FOF).

**Material and Methods:** Between August 2004 and May 2010, IPBR with the FOF was performed for 10 breast cancer patients. A 6 to 8 cm-long skin incision was made along the axillary line, and sentinel lymph node biopsy or axillary dissection was performed. A skin over a tumor-bearing quadrant was undermined through the same axillary incision with or without a periareolar incision, and a wide excision (>30% of the breast tissue) was carried out, excising the tumor with at least 2 cm margins. The OF was laparoscopically harvested, and the gastroepiploic artery and vein

(RGAV) were clipped and resected at their roots. A 4 cm-long transverse skin incision was made on the lower abdominal wall, and the FOF was extracted from the abdominal cavity. Then microanastomoses were done between the RGAV and the thoraco-dorsal vessels. After anastomoses were completed, the FOF was gently pushed through the small axillary incision onto the pectoralis muscle of the partial mastectomy defect, and volume replacement was completed.

**Results:** Three of 10 patients were underwent nipple-sparing mastectomy. Only one complication, which was postoperative hematoma formation, occurred during the follow-up periods. Laparoscopy-associated complications such as bowel obstruction and incisional hernia did not occur. Neither local nor systemic recurrence has occurred to date in any patients.

Cosmetic results were mostly satisfactory. The scars along the axillary line were small and unremarkable. Donor-site scars in the abdominal wall were also minimal. Cosmetic failure occurred only in one patient due to postoperative hematoma formation and a subsequent reoperation. No size reduction of the OF was noted during follow-up periods, even after radiation therapy.

**Conclusions:** The FOF is a safe procedure with minimal donor-site morbidities and deformities, and can be an additional option for IPBR after BCS.

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#### Preoperative Digital Infrared Thermal Imaging and Sentinel Lymph Node Biopsy in the Detection of Regional Lymph Node Metastases in Breast Cancer – Preliminary Results

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**Background:** Sentinel lymph node biopsy (SLNB) has become a standard treatment in staging axillary lymph nodes in early breast cancer. Thermography measurements allow changes in tumour angiogenesis to be evaluated and may assist in detecting occult axillary metastases. The aim of this study was to compare SLNB and Digital Infrared Thermal Imaging (DITI) in detecting occult axillary metastases.

**Material and Methods:** 12 patients with breast cancer and clinically negative axilla were enrolled in the study. DITI was carried out before surgery. At least one sentinel node was identified in all patients. Patients underwent axillary lymph nodes dissection (ALND) in cases of positive SLNB. The results of DITI were compared with histopathology of SLNB and ALND.

**Results:** 5 of the 12 patients (41%) had metastases in axillary nodes. In 4 of DITI positive 5 patients SLN was found to be metastatic. In two patients whose SLN has micrometastasis DITI had been able to show axilla as positive. Sensitivity of DITI for detection of axillary lymph node metastases in this small series was 80%; and the specificity was 85%.

**Conclusions:** DITI appears to allow accurate identification of status of SLN. In patients, whose axilla is DITI positive for metastasis, to perform axillary dissection without SLNB, which is time-consuming and invasive procedure, will require a expanded study to determine its accuracy and usefulness.

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Poster

#### The Main Role of Oncoplastic Surgery in Breast Conservative Treatment – Our Experience On 1024 Patients

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**Objective:** To assess the oncological outcome in women with breast carcinoma who were treated with breast conservative therapy (BCT) using oncoplastic techniques.

**Summary:** Immediate reconstruction in conservative treatment represents a significant innovation in BCT, founding the basis of oncoplastic approach. This study evaluates one thousand and twenty-four patients treated with an oncoplastic approach consisting in an integration of oncologic and reconstructive techniques in breast cancer conservative treatment with the aim to improve long term quality indicators and cosmetic results.

**Methods:** The data were collected from 1999 to 2010 and concerned patients who underwent oncoplastic surgery at the Breast Unit, Careggi University Hospital in Florence. All therapeutic options were agreed on by a multidisciplinary group made up of a breast surgeon, an oncoplastic surgeon, a plastic surgeon, a pathologist, an oncologist, a radiologist, a radiotherapist and a psycho-oncologist. All data were recorded with SQTM® software (CPO-Piemonte). Statistical analysis was performed with SPSS software. All tests were two-sided.

**Results:** Median follow up was 57.2 months (range 18–110). Complete tumor excision was obtained in 909 patients (88.8%). Focally involved