

free survival (RFS) in the intra-operative false negative SLNB compared with that in the negative SLNB was 3.49 ($p = 0.0048$; 95% CI, 1.46–8.32).

Conclusions: It is currently unclear whether ALND can be avoided in most patients with breast cancer with intraoperative, false-negative SLNB. However, patients with pN0 (i+) or with pN1mi had other poor prognostic factors and needed to receive more aggressive therapy.

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Poster

Occult Nipple Involvement in Breast Cancer

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Background: The treatment of breast cancer has evolved, with treatment options including skin-sparing and nipple-sparing mastectomy. But few studies concerned the oncologic safety of preserved nipple-areolar complex. The purpose of this study is to evaluate the occult nipple involvement rate and improve patient selection for nipple sparing mastectomy.

Methods: We retrospectively analyzed 492 breast cancer patients with grossly unremarkable nipples who underwent mastectomy at the Department of Surgery, Kangbuk Samsung Hospital between 2005 and 2010. We reviewed patient clinical data and tumor pathologic report; age, tumor size, tumor-to-nipple distance, multifocality, multicentricity, lymph node metastasis, histologic grade, hormone receptor status, p53, HER2/neu status, lymphovascular invasion.

Results: Among patients underwent mastectomy, we found a 8.13% (40/492) rate of occult nipple positivity with histologic examination. Occult nipple involvement was statistically associated with tumor-to-nipple distance, multifocality, multicentricity ($p < 0.001$), and p53 status ($p = 0.036$).

Conclusion: More than 90% of breast cancer patients undergoing mastectomy did not have occult nipple involvement. This indicates that even patients who had clinically normal appearing nipple-areolar complex should be carefully selected for nipple sparing mastectomy.

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Poster

Our Experience on Conservative Mastectomies – Focus on Nipple Areola Complex Sparing Mastectomy (NACSM) and Skin Reducing Mastectomy (SRM)

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Background: In the recent and rapid evolution of surgical techniques for the treatment of breast cancer, conservative mastectomies represent radical procedures with the reduction or sparing of the skin envelope and the immediate reconstruction with implants or autologous tissues.

Materials and Methods: Our indications for this kind of mastectomies were in situ and invasive cancer without nipple involvement in small-medium size breasts with minimal-moderate ptosis for the NACSM, and large breasts for the SRM. In our experience the contraindications included previous radiotherapy, smoke and diabetes. Regarding the NACSM, the skin incision was performed, as italic S, in the external-upper quadrant, while, for the SRM, following the WISE pattern. In all cases of NACSM and SRM with NAC preservation, an intraoperative histological examination of retroareolar tissue was performed.

From June 2007 to June 2011 we performed 44 NACSM (22 reconstructions with tissue expanders and 22 with permanent prosthesis) and from May 2008 to June 2011 12 SRM, with Nipple Areola Complex (NAC) preservation in 3 cases (including 1 on dermal flap and 2 as graft). The average age of the patients was 48 years (range 26–73) for the NACSM and 58 years (range 38–73) for the SRM.

Results: In one case, respectively, for the NACSM and the SRM, there was lower pole skin necrosis, with extrusion of the implant, so we had to remove it. The average follow-up was 18 months (range 0–48), with a local recurrence after 45 months, for the NACSM and 13 months (range 0–36), without recurrences for the SRM.

Conclusions: For the SRM our experience confirms, according the new technique (variation of the Skin Sparing Mastectomy type IV) that the creation of a dermal-fat flap prepared during the mastectomy, has significantly reduced the incidence of lower pole skin necrosis.

We believe that, according to the correct indications and using a rigorous surgical technique, conservative mastectomy guarantees a safe oncological treatment with a good cosmetic result, without the need of others local complementary treatments.

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Poster

Short-term Outcomes of Immediate Breast Reconstruction After Mastectomy Using Implant or Tissue Expander in Patients with Breast Cancer

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Background: Mastectomy can be a definitive treatment in women with breast cancer. However, it may cause a significant psychological trauma and psychosocial withdrawal. This study was conducted to evaluate the outcome of immediate breast reconstruction after mastectomy using implant or tissue expander in patients with breast cancer.

Materials and Methods: Seventy-seven patients underwent breast reconstruction with permanent implant or tissue expander immediately after mastectomy from July 2007 to December 2010, and 14 patients were excluded because of follow-up loss. Therefore, a total of 63 patients aged 29 to 64 years (mean age: 44.1) were evaluated in this study. There were 32 cases of total mastectomy, 12 cases of skin sparing mastectomy, and 19 cases of nipple areolar complex (NAC) sparing mastectomy. Medical records of these patients were reviewed retrospectively, and to assess patients' satisfaction, questionnaires were sent to all patients.

Results: At pathology, 16 (25.4%) had ductal carcinoma in situ; 47 (74.6%) had invasive carcinomas. With a median follow-up periods of 22.4 months (range: 6–45 months), there was 1 case of loco-regional recurrence. Overall breast cancer specific survival was 100%. Overall complication rate was 20.6% (13 patients), such as NAC necrosis or implant removal. Among 10 patients who had NAC necrosis, 6 patients improved after observation, and 4 patients had nipple or NAC removal. Three patients were removed their implant due to infection or patients' dissatisfaction. According to the result of the questionnaires, 84.1% was satisfied with generalized operational result, and 77.8% was satisfied with cosmetic outcome.

Conclusion: Although this study needs further evaluation and long-term follow up, immediate reconstruction after mastectomy using implant or tissue expander can be an oncologically safe procedure, along with acceptable cosmetic outcome.

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Poster

Correlation Between the Area of High-signal Intensity on SPIO-enhanced MR Imaging and the Pathologic Size of Sentinel Node Metastases in Breast Cancer Patients with Positive Sentinel Nodes

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Background: Superparamagnetic iron oxide (SPIO)-enhanced MR imaging has been reported to be promising for the detection of metastases in sentinel nodes localized by CT lymphography in patients with breast cancer (Motomura K, Ann Surg Oncol 2011). A node was considered metastatic if there was high-signal intensity either in the entire node or in a focal area on SPIO-enhanced MR imaging. This study investigated the correlation between the area of high-signal intensity on SPIO-enhanced MR imaging and the pathologic size of sentinel node metastases in breast cancer patients with pathologically positive sentinel nodes.

Materials and Methods: This study included 150 patients with breast cancer. Sentinel nodes were identified by CT lymphography, and SPIO-enhanced MR imaging of the axilla was performed to detect metastases in the sentinel nodes. Sentinel node biopsy was performed using a combination of dye and radiocolloid. Imaging results were correlated with histopathologic findings.

Results: Thirty-three pathologically positive sentinel nodes from 30 patients were evaluated. Four false negative patients were excluded. Three patterns of SPIO uptake were demonstrated for positive sentinel nodes. Six nodes (18.2%) showed uniform high-signal intensity, 17 nodes (51.5%) showed partial high-signal intensity involving more than 50% of the node, and 10 nodes (30.3%) showed partial high-signal intensity involving less than 50% of the node. High-signal intensity patterns that were uniform or involved more than 50% of the node were observed in 23 nodes that contained macro-metastases and no node that contained micro-metastases, while high-signal intensity patterns involving less than 50% of the node were observed in 2 nodes that contained macro-metastases and 8 nodes that contained micro-metastases. When the area of high-signal intensity was compared with the pathological size of the metastases, there was no difference for nodes with metastases ≥ 4 mm, but there was a significant difference for nodes with metastases < 4 mm ($p > 0.05$ and $p < 0.01$, respectively, paired t test).

Conclusions: High-signal intensity patterns that are uniform or involve more than 50% of the node are features of nodes with macro-metastases.

The area of high-signal intensity correlated with the pathological size of metastases for nodes with metastases ≥ 4 mm in this series.

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Poster

When Mastectomy is Needed – is the Nipple Sparing Procedure a New Standard with Very Few Contraindications ?

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Background: Nipple sparing mastectomy (NSM) has been recently introduced in surgical practice to improve the esthetic results after breast reconstruction, and to diminish the sense of mutilation for women necessitating mastectomy.

Materials and Methods: 99 NSM were performed in 91 patients (eight cases bilateral) from 2003 to 2011, and were retrospectively analyzed. 81/99 cases were performed since 2009. All patients necessitating mastectomy without clinical evidence of nipple-areola complex (NAC) invasion or retraction, and with a minimal 1 cm clinical and radiological distance of the tumor from the NAC were considered eligible. The NAC was radically dissected, and an intra-operative serial histologic exam of the retro-areolar tissue was performed. No intraoperative radiotherapy was considered.

Results: Median age was 46 years (29–64) and median tumor diameter 1.9 cm (0.5–7). NSM was performed for multifocality (n=57), locally advanced disease (n=31), bilateral cancer (n=3), prophylactic contralateral surgery (n=2), or strong familial history of breast cancer (n=6). Histology was invasive ductal (n=63) or lobular (n=15), in situ (n=7), phyllodes (n=5). A positive N status was present in 34/91 cancer cases (37%). Neoadjuvant chemotherapy was administered to 21/78 invasive cancer patients (27%), while additional 43 patients received adjuvant systemic treatment/ (55%), and 10 patients post-operative chest-wall radiotherapy (13%). NAC was removed for neoplasia after intra-op or post-op histologic exam of the retro-areolar tissue in 14 and in 3 cases, respectively (17%). Only 5/17 of these removed NAC showed histologic evidence of neoplasia (29%), while there was one false-positive of intra-operative exam. Total NAC necrosis occurred in 4 cases (4%), while 10 additional patients (10%) showed minimal necrosis or superficial desquamation, without permanent aesthetic consequences. Breast reconstruction was performed with immediate prostheses (n=61) or with expander-prostheses (n=38). Patients judged their aesthetic result (intention to treat analysis) as excellent (n=28), good (n=51), sufficient/fair (n=16) or insufficient (n=4). At a median follow-up of 23 months there were no loco-regional recurrences, while four patients developed systemic relapse.

Conclusions: With a limited follow-up, NSM appears to be safe when performed by a dedicated team. It can offer improved esthetic results, even in heavily treated or advanced tumors, if there is no evidence of cancer in the retroareolar tissue. Eligible patients can retain their NAC in about 80% of cases even if non-restrictive indications are implemented.

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Poster

Image-guided Radiofrequency Ablation in Patients with Primary Breast Carcinoma-a Multicenter Study of 40 Patients-

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Background: The authors performed a multicenter study of ultrasound-guided percutaneous radiofrequency ablation (RFA) in patients with T1 and T2 breast tumors 1) to confirm complete thermal injury of tumor tissue and 2) to determine the safety and complications related to this treatment.

Materials and Methods: Forty patients with core-biopsy proven invasive breast cancer, T<2 cm in diameter on ultrasound and MRI were enrolled in this trial. Under ultrasound guidance, the tumor and at least a 5 mm margin of surrounding breast tissue were ablated with saline-cooled RF electrode followed by surgical resection. Pathologic and immunohistochemical stains were performed to assess tumor viability.

Results: Thirty-eight patients completed the treatment. The mean tumor size on ultrasound was 1.38 cm. The mean ablation time was 12 minutes using mean power of 80.0 watts. During ablation, the tumor became progressively echogenic that correspond with the region of severe electrocautery injury at pathologic examination. Of the 38 treated patients, H&E and NADPH viability staining was available for 21 patients and in 21

(100%), there was no evidence of viable cancer cells. H&E and or ssDNA staining were available for another 17 patients. In total, complete thermal injury to the target lesions was recognized in 32 of 38 treated patients (84.2%).

No severe adverse effect on the skin and chest wall were noted.

Conclusion: RF ablation is a promising minimally invasive treatment of small breast carcinomas, as it can achieve effective cell killing with a low complication rate. We are planning a multicenter observational study for RF ablation of small breast carcinomas.

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Poster

Is Axillary Dissection Still Useful in Node-negative Early Breast Cancer?

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Background: Axillary lymph node dissection has traditionally been a routine component of the staging and management of early breast cancer. However, sentinel lymph node biopsy is now accepted as the initial approach for women with early stage breast cancer with clinically node-negative disease. We performed a meta-analysis of contemporary trials comparing axillary lymph node dissection to sentinel lymph node biopsy in patients with early stage breast cancer and pathologically negative sentinel lymph node.

Material and Methods: A systematic review with MEDLINE and EMBASE was conducted with no date restriction and with the following keywords: 'breast cancer', 'axillary dissection', and 'sentinel lymph node'. The search was further limited to randomized, controlled trials published in English. We identified five randomized trials of axillary dissection versus sentinel lymph node biopsy in clinically lymph node-negative early stage breast cancer patients. Meta-analyses were performed for overall and cancer-specific survival, disease-free survival, axillary recurrence, metastatic disease and ipsilateral breast recurrence.

Results: Meta-analyses found no significant difference in overall survival (Relative risk [RR] 1.14; p=0.17; 95% CI, 0.94–1.38), breast cancer-specific survival (RR 1.03; p=0.86; 95% CI 0.75–1.41) and disease-free survival (RR 1.07; p=0.3; 95% CI, 0.94–1.21), distant metastases (RR 1; p=0.98; 95% CI, 0.76–1.32), and ipsilateral breast recurrence (RR 1.64; p=0.34; 95% CI, 0.60–4.47) associated with sentinel lymph node biopsy. In particular a similar rate of axillary and other regional nodal recurrences was seen after sentinel lymph node biopsy (RR 1.37; p=0.34; 95% CI, 0.72–2.60).

Conclusions: Axillary dissection does not confer a survival benefit nor prevent further nodal relapses in the setting of early stage, pathological lymph node-negative breast cancer. Node negativity after standard pathological examination is no longer considered an indication for axillary lymph node dissection.

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Poster

Patient Counselling and Socioeconomic Deprivation – Two Factors That Profoundly Influence Immediate Breast Reconstruction Rate After Mastectomy

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Introduction: Majority of breast cancer patients are still treated with mastectomy alone despite the recommendations of current guidelines. It has also been suggested that women from more deprived areas are less likely to undergo immediate reconstruction (IR). We investigated potential pitfalls in patient counselling and consequent decision making contributing to present IR rate in combination with the effect of socioeconomic deprivation.

Methods: 89 consecutive mastectomy patients' data was prospectively collected in a single centre in Glasgow between August 2010 and March 2011. Consultations about IR and patients' acceptance of counselling were analysed in combination with socioeconomic deprivation (Scottish Index of Multiple Deprivation; Fischer's exact test).

Results: While IR was offered to 46% of patients only, the actual IR rate was 27%. Reasons for refusal of IR: lack of interest (10), not feeling ready (2), preference of delayed procedure (2) and fear of delaying adjuvant therapy (2). Reasons were documented in 24% of those whom IR was not offered, while there was no reference at all in 36%. Reasons for not even discussing IR: age (15), co-morbidities (18), both (5), locally advanced cancer (2) with age (2). 26% of patients whom IR was offered were from affluent but 20% from deprived areas. 18% were from affluent but 29% from deprived areas of those who were not offered (p<0.05). 59% of patients