

of high risk with SLN-micrometastasis. Ongoing randomized trials will provide prospective answers to the question of the optimal treatment for micrometastasis.

**522** **Factors Influencing Type of Surgery in Breast Cancer Patients** Poster

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**Background:** Surgery is the mainstay of treatment in breast cancer. The aim of this study was to evaluate the factors that affecting surgical treatment in breast cancer patients.

**Material and Method:** Between March 2007 and April 2010, demographic and clinicopathological characteristics including age, type of surgery, tumor size, stage at diagnosis, location of tumor, surgeon experience and type of surgery in 274 breast cancer patients were extracted from cancer registry in Iranian Center for Breast Cancer (ICBC).

**Results:** The mean age of the patients at the time of diagnosis was 47.6 years. 136 patients (49.6%) underwent modified radical mastectomy (MRM) and breast conserving surgery (BCS) was performed in 138 patients (50.4%). In Chi-Square analysis, there was a statistically significant association between tumor size ( $P = 0.002$ ) and location of tumor ( $P = 0.0001$ ) stage at diagnosis ( $P = 0.0001$ ) and type of surgery (MRM or BCS). In logistic regression analysis, only location of tumor (OR: 0.005, 95% CI 0.039–0.559) and stage (OR: 0.0001, 95% CI 0.197–0.586) were affecting the type of surgery (OR: 3.9, 95% CI: 1.02–15.3) in these patient.

**Conclusions:** The findings suggest that location of tumor and stage at diagnosis are significant predicting factors that influence type of surgery in breast cancer patients. Other variable like as surgeon experience may not affecting type of surgery. Further validation of these results by large sample size is warranted.

**523** **Evaluation of Patients' Knowledge, Need and Psychosocial Background in the Decision Making of Posmastectomy Breast Reconstruction in Hungary – A Questionnaire Study of 500 Cases** Poster

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**Background:** According to guidelines of the European Society of Mastology, breast cancer patients requiring mastectomy should be informed about the option of immediate or delayed breast reconstruction. There are wide differences in the quality standard of oncoplastic care throughout Europe, with slight improvements in Central-European countries like Hungary.

The aim of the present investigation was to evaluate patients' knowledge and need for postmastectomy breast reconstruction and the psychosocial background in the decision making of the breast cancer population.

**Material and Methods:** A questionnaire containing fifteen questions was given to 500 breast cancer patients on the day before performing simple or total mastectomy in the National Institute of Oncology between 2010 January and 2011 October. The questions focused on the emotional impact of the malignant disease, the multidisciplinary treatment, the loss of the breast, changes in family life, the importance of environmental conditions like the patients' knowledge on breast reconstruction, the source of information and the demand for the immediate or delayed procedure. All the answers were statistically analysed in the context of patients age, marital status, educational level and settlement type.

**Results:** Descriptive statistical results of the investigated population, and the answers of all 15 questions as well as correlations of the different aspects of the decision making are presented.

**Conclusions:** Hungarian breast cancer patients have very limited knowledge on the field of breast reconstruction in spite of the fact that this type of care is covered by national health insurance. Although almost 50% of the patients declared their need for breast reconstruction, the rate of the performed operations was 5%. The results of the study will promote the establishment of a more structured breast cancer surgical care and better patient information service according to the EUSOMA guidelines for breast units.

**524** **Atypical Ductal Hyperplasia in Percutaneous Breast Biopsy. Surgery Vs Follow-up** Poster

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**Background:** The management of patients with diagnosis of atypical ductal hyperplasia (ADH) in percutaneous breast biopsy specimens, has been controversial.

**Objective:** Analyze our percentage of underestimation of breast cancer in our percutaneous biopsies with diagnosis of ADH, and also to analyze a group of patients who were subject of follow-up.

**Patients and Methods:** We evaluated 4,848 percutaneous breast biopsies in our institution from March 1996 to August 2010. Percutaneous biopsies were performed according to criteria of the breast imaging department. Core needle N° 14 G and vacuum-assisted N° 14 G, 11 G and 8 G were used. They were all by stereotactic guidance. Criteria for surgery was: ADH >2 foci (regardless of the size), and those patients whose image that prompted the biopsy was not completely removed during the procedure. The follow-up criteria was: ADH ≤2 foci and those patients whose image that prompted the biopsy was completely removed during the procedure. There was a group of patients that had surgery outside our institution, in these patients our algorithm was not applied.

**Results:** Out of 4,848 percutaneous breast biopsies, 5.52% (268) were ADH. 25.7% (69) were follow in our center. 27 patients had surgery and 42 were subject of follow-up. Of the 27 that had surgery, 4 (14.82%) reported cancer in definitive biopsy (underestimation). 8.69% (6/69) developed breast cancer in the same breast or the other in a median follow-up of 5.93 years.

**Conclusions:** ADH is a risk marker for the affected breast and for the contralateral breast. The possibility of underestimation for cancer exist. Percutaneous breast biopsy with vacuum-assisted and thicker needle gives a lesser underestimation. When ADH is reported ≤2 foci and the image that prompted the biopsy is eliminated during the procedure, is safe to recommend clinical and imaging follow-up. Patients with ADH whose biopsy reported >2 foci (regardless the size) must have surgery.

**525** **Can Axillary Lymph Node Dissection Be Avoided in Women with Breast Cancer with Intraoperative, False-negative Sentinel Lymph Node Biopsies?** Poster

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**Background:** ALND has been a standard treatment for breast cancer patients with positive sentinel lymph nodes (SLNs). However, over 50% of patients with positive SLNs had only positive SLN and, in theory, did not need axillary lymph node dissection (ALND). In fact, the axillary recurrence rates remained at a low level even in patients who had SLN metastases and who did not undergo ALND. The main objective of the current study was to determine the prognosis of patients with an intraoperative, false-negative SLNB.

**Material and Methods:** Total 516 women who had unilateral invasive breast cancer with clinically negative nodes or nodes suspicious for metastasis, were intraoperatively diagnosed as having negative SLNs, and did not undergo an immediate ALND. Our intraoperative histological investigation uses H&E staining of a frozen section from a maximum cut surface of each SLN. Of these 516 women, 53 (10.3%) were postoperatively diagnosed as having positive SLNs, which classifies them as having an intraoperative, false-negative SLN biopsy (SLNB). Patient and tumor characteristics, treatment methods, and the prognoses of these patients were investigated and compared with the remaining 463 patients who were negative for SLNB.

**Results:** Of the 53 patients with intraoperative, false-negative SLNB, none underwent a further ALND. With a median follow-up period of 31.0 months, seven of these patients exhibited recurrence in the locoregional area and 2 death. The hazard ratios (HRs) for recurrence

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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#### 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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#### 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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#### 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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#### 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  $\geq 4$  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.