was successful in 51 procedures (51/55; 93%). Of the 4 procedures in which both techniques failed, an axillary nodal dissection was performed in 3 cases. In one case the SLN was found by palpability. Sensitivity, specificity, PPV and NPV for blue dye and for lymphoscintigraphy were 68%, 50%, 33%, 81% and 97%, 12%, 40%, 92%, respectively. Combining both techniques resulted in values of 99%, 5%, 27% and 90%.

Conclusion: Blue dye injection, as adjunct to lymphoscintigraphy, resulted in 0.7% additional SLN detections. Blue dye detected the SLN in 20% of failed lymphoscintigraphy procedures. This implies that blue dye is most useful when lymphoscintigraphy is unsuccessful.

502   Poster

Validation of Three Breast Cancer Nomograms for Predicting the Non-sentinel Lymph Node Metastases After a Positive Sentinel Lymph Node Biopsy and a New Formula for Predicting Non-sentinel Lymph Node Status. (Second Study From Turkey − First Unicenter Study)

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Introduction: At present sentinel lymph node biopsy (SLNB) has become a standard procedure for staging and selecting the treatment of early stage breast cancer. Although patients who have positive SLNB should undergo to axillary lymph node dissection (ALND), about 40−70% of them have no nonsentinel lymph node (NSLN) metastasis. Therefore many patients undergo to unnecessary axillary dissection. Several institutions have developed nomograms to identify patients with a sufficiently low risk of nonsentinel lymph node metastasis to avoid completion axillary lymph node dissection.

Purpose: The aim of the study is to evaluate the available breast nomograms (MSKCC, Stanford, Tenon) to predict non-sentinel lymph node metastasis (NSLNM) and to determine the variables on NSLNM in the SLN positive breast Cancer (BC) patients in the our population.

Method: We retrospectively reviewed patients who underwent SLNB. 170 SLN biopsy positive patients who had completion axillary lymph node dissection were evaluated. We described two groups; group one NSLN negative (70 patients), group two NSLN positive (100 patients).

All variables recorded to the SPSS 15.0 program and analyzed by this program.

The likelihood of having positive NSLNM based on the factors was evaluated by use of chi square test, student t-test and mann whitney u test. Stepwise multiple logistic regression analysis was used to estimate a predictive model for NSLNM. Four factors were found to contribute significantly to the logistic regression model.

After multiple logistic regression analysis of significant parameters, we designed a new formula to predict non-sentinel lymph node metastasis, based on the multivariate analysis.

The areas under (AUC) the receiver operating characteristic curve (ROC) were used to describe the performance of the diagnostic value of MSKCC, Stanford, Tenon nomograms and our new nomogram.

Results: Negative SLN number, SLN extracapsular extention, proportion of positive SLN to total SLN, metastasis size of SLN, progesterone receptor status, LVI, and multifocality were found statistically significant on NSLNM with univariate analysis. The multivariate analysis was performed on the data with the parameters which were found to be significant in univariate analysis.

After stepwise multiple logistic regression analysis multifocality, proportion of positive SLN to total SLN, LVI, SLN extracapsular extention found statistically significant.

AUC results for each nomograms: MSKCC:0.713 / Tenon:0.671 / Stanford:0.534 / DEU:0.814

Conclusion: The MSKCC nomogram was good discriminator of NSLN metastasis in SLN positive BC patients for our population.

A newly created formula depending on four factors is the best prediction toll for discriminate of NSLN metastasis in SLN positive BC patients for our population.

We recommend that; nomograms must be validated before using it for the population, and more than one validated nomograms may be used together while consulting patients.

503   Poster

Nipple Sparing Mastectomy with Primary Breast Reconstruction − Local Recurrence and Complications in 246 Cases

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Introduction: Although effective local control is the primary goal of breast cancer surgery, the long-term aesthetic outcome is also important. Better knowledge of the pathogenesis of breast cancer together with rising interest in improved cosmetic results has led to the consideration of the role of skin-sparing and nipple-sparing mastectomy (NSM) in breast cancer treatment.

Aim of study: The aim of our study was to compare complications and local recurrence in patients undergoing NSM with immediate reconstruction.

Material and Methods: This retrospective study was done at 246 breast cancer patients in the period from January 2004. to december 2009. At all patients was done subcutaneous mastectomy with preservation of the niple areola complex (NAC) with the simultaneous heterologous breast reconstruction with silicone implants. All patients with inflammatory breast carcinoma, Paget's disease, extensive infiltration of skin by cancer, radiology detected infiltration of the NAC are excluded from this study. The main criteria on which the NAC excision was omitted or performed NSM, is the absence of tumor tissue in retroareolar cone (confirmed with histopathology (fast frozen analysis). At all patient primary breast reconstruction using heterologous contur prosthesis (Mentor Contour Profile ®, a fixed volume implants) was perfomed.

Results: Avreage age of the patient was 49 years. Most surgically treated patients was in stage II of disease with the equally participation of stage IIa and IIb (25.6% IIa-IIb 24%). In 7% it was a stage 0 (in situ tumors), 16.2% of patients were in stage I, 14.2% in IIIa, and 0.8% in the IIIb stage. Almost 80% percent of the tumors belonging to T1 and T2 (T1−31.9%, T2−47.7%).

The total percentage of relapses after the NSM was 1.6% (4 patients). Lenticular metastases have occurred at 3 patients (1.2%). Diffuse carcinomatous lymphagiosis mastitis appeared in one (0.4%) patient. At 11 (4.5%) patients appeared in the postoperative follow-up distant metastases.

The total percentage of early complications was 15% (37 patients). The most common early complication was skin and / or NAC necrosis (17 patients (6.9%)). Total number of prothesis explantation due postoperative complications was 12.

Conclusion: NSM with simultaneous breast reconstruction is an adequate surgical procedure for carefully selected patients who require mastectomy. Primary reconstruction of the breast with heterologous implants by performing NSM mastectomy took place in the standard surgical treatment for breast cancer because it does not lead to an increased number of complications, local recurrence and reduced survival, and extremely facilitates socialization and increases quality of life.

504   Poster

Observational Study and Evaluation of Blue Dye-assisted Axillary Node Sampling for Axillary Staging in Early Breast Cancer

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Background: Sentinel Node Biopsy (SNB) is considered to be the most reliable and safe procedure for axillary staging. Many studies have reported that utilizing a combination of a blue dye and a radioisotope (RI) provides thehighest success and the lowest false-negative rates. However, RIs are regulated, and not all institutions have access to nuclear medicine facilities. Here we describe our experience in using blue dye-assisted axillary node sampling (ANS) for detecting SNs without RIs.

Patients and Methods: 253 early breast cancer patients (without clinically or radiologically detected enlarged lymph node that would be consistent with metastasis) underwent blue dye-assisted ANS between February 2003 to October 2008. Lymphatic mapping was performed by injecting patent blue, and blue lymphatic vessels were identified and followed until the first blue node was revealed. If fewer than 4 blue nodes were excised, axillary sampling was performed until 4 nodes had been obtained in total. Patients with metastatic SNs (SN+ve) underwent axillary clearance or radiotherapy depending on nodal involvement, while SN-ve patients did not undergo any further axillary treatment.

Results: 57 patients were diagnosed with metastatic disease by using the blue dye-assisted node sampling technique. 5 of them underwent axillary lymph node clearance, while 48 received radiotherapy to the axilla (4 patients did receive any further axillary treatment for various reasons after multidisciplinary team discussion). The remaining 196 SN-ve patients did not undergo any further axillary treatment. After a median follow-up of 61 months (range 30−98), one patient in the SN-ve group developed

axillary recurrence, while no axillary recurrences were found in the SN+ve group ($P = 0.50$). Differences in tumour characteristics were reviewed, and significant differences in tumour size (larger in the SN+ve group, $P = 0.014$), and lymphovascular invasion (more frequent in the SN+ve group, $P = 0.026$) were noted. Other differences were not significant. Blue SNs were harvested in 244 patients (96%) and only unstained SNs were harvested in 9 patients (4%). Among the 57 SN+ve patients, foci were found in blue SNs in 40 patients (70%) while they were found in only unstained SNs in 17 patients (30%). The mean numbers of blue nodes and non blue nodes excised were 2.3 & 3.7 respectively. A single metastatic SN was found in 58% of the SN+ve patients while 19% had 3 or more +ve nodes. Two patients had allergic reactions and recovered quickly with antihistaminics.

Discussion: SNB with blue dye-assisted 4 axillary node sampling is a useful technique for surgeons who have no access to radioisotope facilities. Given that 30% had metastatic foci in only unstained SNs, we emphasize that blue dye alone is insufficient, and that careful intraoperative palpation and removal of any palpable suspicious nodes whether they are blue or not is recommended. In this study the complication rates were similar to those reported from previous ones.

505   **Poster**

Micrometastases in Sentinel Lymph Node Biopsy. Is it Necessary an Axillary Dissection? Experience in Centro Clinico De Estereotaxia (CECLINES), Caracas-Venezuela

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Background: There is controversy regarding the clinical importance and biological significance of micrometastases and because of this there is doubt on what to do with a micrometastases. Because of this our aim is to observe the outcome of a group of patients with diagnosis of micrometastases in sentinel lymph node biopsy and compare its behavior with a group of patients with sentinel lymph node negative and sentinel lymph node positive for macrometastases.

Methods: Retrospectively we studied CECLINES's database with 704 patients: 2.59% (18/693) micrometastases, 19.91% (138/693) for macrometastases (pT1−2, pN1) and 79.07% (548/693) for node negative group. Out of the 18 patients with micrometastasis, breast surgery + axillary disection was performed in 12 patients and breast surgery plus adjuvant therapy (without axillary disection) in 6 patients.

Results: The median follow up was 4.22 ± 0.42 years (1−22). The median age for micrometastases was 54.11 ± 1.8 (39−68). Tumor size for micrometastases group 14.05 ± 2.69 mm (0−40 mm). The hormone receptor expression was: RE+ 94.44%, RP+ 83.33%, proliferation index Ki67 83.23% (moderate or elevated). In the micrometastases group there was a 5.55% (1/18) of local recurrence. There wasn't regional recurrence. The NSLN rate for metastasis was 33.33% (8/12). The overall survival at 5y was for micrometastases 100%, for node negative 98% and for macrometastases 93% (micrometastases vs AN, p > 0.05 and micrometastases vs macrometastases, p < 0.05).

Conclusion: Because of the absence of regional recurrence and the excellent overall survival for the micrometastases group we think that an axillary dissection might be avoid in a near future in a selected group of patients with favorable histopathologic and inmunohistochemistry characteristics (hormone receptors positive, low Ki67, C-erbB-2 negative, small tumor size, abscense of lymphovascular invasion, low histologic grade) and under the observation of a clinical trial, but until we don't have this 'ideal profile' and because the risk of persistent disease in the axilla, an axillary dissection must be performed in every patient with a micrometastases.

References

[1] Giuliano A, Hunt K, Ballman K, et al. Axillary Dissection vs No Axillary Dissection in Women With Invasive Breast Cancer and Sentinel Node Metastasis. A Randomized Clinical Trial. JAMA. 2011;305(6):569–575
[2] de Boer M, van Deurzen C, van Dijck J et al. Micrometastases or Isolated tumor cells and the outcome of breast cancer. N Engl J Med 2009, 361(7):653–663.
[3] Acosta V, Contreras A, Ravelo R, et al. Biopsy of Sentinel Node in Mammary Cancer: Initial Experience at the Centro Clinico de Estereotaxia, Caracas, Venezuela. Breast J, 2003. 9(6):509–510.

506   **Poster**

Intraoperative Assessment of Surgical Margins During Breast Conserving Surgery of Ductal Carcinoma in Situ by use of Radiofrequency Spectroscopy

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Backround: Assessment of margins when excising DCIS of the breast is difficult. Frozen section is unreliable and specimen intraoperative radiography only provides information regarding the extent of the visualized lesion or the microcalcifications. Insufficient or positive margins are the strongest predictor for risk of local recurrence.

The aim of our study was to evaluate the performance of MarginProbe® (Dune Medical Devices, Caesarea, Israel) in assessing surgical margins for DCIS and lowering the re-excision rate after initial BCS.

Material and Methods: The device includes a disposable hand-held probe and a console, is based on radiofrequency spectroscopy, and detects differences in dielectric properties between normal and malignant breast tissue.

The multicenter single arm, post market study was performed on 55 patients at 3 German sites under approval of institutional review boards. MarginProbe® was used as an adjunctive tool to the current practice. All specimens were sent for paraffin embedded pathological analysis.

The procedure success was defined as both: negative margins after initial BCS; and early identification of an extended lesion, with conversion to mastectomy instead of performing a re-excision BCS.

Results: From September 2009 until May 2010, 55 patients were enrolled in the study. Thirty-nine were available for this analysis. In comparison with our historical re-excision rate of 38.8% for patients with DCIS undergoing BCS, use of MarginProbe® led to a reduction in the re-excision rate by more than 50%, down to 15% (p < 0.01) (surgical margin width of 5 mm). The procedure success was dependent on the clean margin width definition (5 mm: 64%; 2 mm: 77%; 1 mm: 90%). Resected average main specimen tissue volume was 37 cc. Tissue volume associated with false positive margins was, on average, 8.1 cc per patient. Due to the current discussions regarding margin width criteria, we also calculated re-excision rates using 2 mm and 1 mm margin widths. For this definition, re-excision rates were 13% and 7%, respectively.

Discussion: These results demonstrate that adjunctive use of the device is effective in achieving procedure success and reducing re-excisions for DCIS patients. Intraoperative margin assessment for invasive breast cancer can be performed by ultrasound. However, it is a macroscopic assessment. Although frozen section is a microscopic evaluation, it is time-consuming and limited to invasive cancer. For DCIS the surgeon does not have sufficient information about the margins intraoperatively.

Conclusion: MarginProbe® provides a technique that is fast and effective. The benefit for the patients results in a significantly reduced re-excision rate, which may also lead to a lower rate of infections and an improvement of patient's cosmesis. For invasive breast cancer it could replace frozen section and might be the long awaited tool for intraoperative margin assessment of non-palpable lesions and DCIS.

507   **Poster**

A Study of Clinical and Histopathologic Differences in T Stage of Breast Cancer Diagnosed at Vacuum-assisted Breast Biopsy (VABB)

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Background: Vacuum-Assisted Breast Biopsy(VABB) is a biopsy method that allows a complete removal of target lesions with the same accuracy result as in excisional biopsy, but given it comes as multiple fragments, it is rather difficult to measure a tumor size in histopathology, leading to underestimation of staging and possibly affecting the decision on the use of adjuvant therapy. Authors have undertaken this study in order to determine the difference between clinical T stage based on ultrasound(US) imaging before surgery in VABB diagnosed breast cancer and T stage in histopathology performed after radical mastectomy.

Method: Retrospective study analyzed medical records of 168 patients diagnosed with invasive breast cancer among 248 patients who received radical mastectomy after being diagnosed with malignancies at VABB for diagnosis and treatment purposes at Kangnam CHA Hospital between Jan.