and surgical treatment 3−12 h. later. SLNB and quadrantectomy were performed in DS and LA without ever using vital blue dye. Axillary incision was 3−4 cm. This study was approved by an ethics committee, discussed with all patients and informed consent was obtained.

Results: Four patients underwent pre-operative lymphoscintigraphy, the radiotracer did not show any sentinel lymph node (SLN), we directly performed axillary dissection. In these cases the axilla was positive. In three other cases of multifocal (MF) and two of multicentric (MC) invasive breast cancer the SLN was identified and SLNB was performed. Only one case of MC cancer the SLNB was positive. In three other cases of multifocal (MF) and two of multicentric (MC) invasive breast cancer the SLN was identified and SLNB was performed. Only one case of MC cancer the SLN was positive. Four patients classified T4b with negative axilla to clinical examination and Positrone Emission Tomography (PET) were treated with neoadjuvant chemioterapy (NC). Afther completion of NC, lymphatic mapping was able to identify SLN and we performed SLNB. In these patients SLN was negative. Two cases of male cancer with negative axilla to clinical examination had SLN positive for macrometastases. Four cases showed isolated tumor cells, sixteen micrometastases and twenty-nine macrometastases. In one case of negative SLN there was a positive second palpable lymph node. Another case showed a double SLN in the axilla and internal mammary chain, but only the internal mammary SLN was positive. The SLN identification rate was 99%. After surgery we distributed a questionnaire to the patients about the acceptability of this approach.

Conclusions: This approach is safe, well accepted by patients who reported better quality of life (99%). The oncological results are absolutely reliable. As regards hospital logistics, operations in DS and LA can be easily managed leading to an effective cost reduction of 42.15%, less expensive than the same operation performed under general anaesthesia.

519 Poster

Intraoperative One-step Nucleic Acid Amplification Assay(OSNA) to Detect Sentinel Lymph Node(SLN) Metastasis in Breast Cancer − an Evaluation of 703 Cases in a Single Institution

Y. Rai[1], Y. Ohi[2], M. Kaikura[2], Y. Sagara[1], S. Tamada[1], Y. Sagara[3], S. Baba[1], D. Yotsumoto[1], M. Ando[1], Y. Sagara[1]. *[1]Sagara Hospital, Dept of Breast Surgery, Kagoshima, Japan; [2]Sagara Hospital, Dept of Pathology, Kagoshima, Japan; [3]Sagara Hospital, Dept of Radiology, Kagoshima, Japan*

Background: One-step nucleic acid amplification assay (OSNA) is a semi-automated lymph node examination method with semi-quantitative result reflecting the volume of metastatic foci by measuring the amount of CK19 mRNA in sentinel lymph node (SLN). Recent studies have revealed that OSNA method is as accurate as conventional histological examination for the detection of SLN metastasis. The aim of the study was to evaluate the ability of OSNA to predict SLN metastases, as well as to validate the semi-quantitative range of CK19 mRNA in detecting or excluding metastases.

Material and Methods: From August 2009 to March 2011, 703 breast cancer patients without clinical lymph node metastasis had undergone SLN biopsy during breast cancer operation. Both 99mTc and blue dye were injected into the dermis of the areola before surgery. All nodes stained with blue dye and/or those with high radioactive counts were defined as SLNs. The result of OSNA was classified by the amount of CK19 mRNA $<2.5\times10^2$ copies/μL, 2.5×10^2–5.0×10^3, and $>5.0\times10^3$ as −, + and ++, respectively. OSNA+ and ++ were defined as metastasis of SLN. OSNA+ and ++ patients received axillary dissection (ALND) while OSNA− patients were avoided. All the nodes acquired from ALND and those removed as non-SLN were examined by routine histological examination after the operation.

Results: From 703 patients, 870 SLNs were examined with an average 1.24 nodes in each patient. The average time to obtain the result of OSNA was 36 minutes. Among the 703 patients, 581 patients (82.6%) were OSNA−, while 56 (8.0%) were +, 66 (9.4%) were ++. The total median number of axillary nodes removed for both OSNA and histological examination was as follows: OSNA−/+/++: 3 (1−15)/9 (2−22)/14 (4−35). The total median number of metastatic nodes was identified in OSNA−/+/++: 0 (0−3)/1 (1−6)/2 (1−28). There appeared a correlation between tumor size and the frequency of OSNA result, with T0 (n = 104): OSNA−/+/++: 101 (97.1%)/2 (1.9%)/1 (1.0%) vs T1 (n = 314): 269 (85.7%)/21 (6.7%)/24 (7.6%) vs T2 (n = 262): 197 (75.2%)/30 (11.5%)/35 (13.4%); vs T3 (n = 18): 10 (55.6%)/2 (11.1%)/6 (33.3%) vs T4 (n = 5): 4/1/0. Non-SLN metastasis were identified in 1.5% (9/581) in OSNA−, as compared to 17.9% (10/56) in OSNA+ and 57.6% (38/66) in OSNA++ patients respectively. Positive predictive value of OSNA++ for non-SLN metastasis (38/66, 57.6%) was significantly higher than that of OSNA+ (10/56, 17.9%) (p = 0.0001).

Conclusions: OSNA is an accurate tool for intraoperative assessment of SLN status and could reduce the burden on pathologists. The semi-quantitative result of OSNA−/+/++was a strong predictive factor indicating additional non-SLN involvement, which suggests that further axillary procedure may be potentially avoided in OSNA-patients, but considered for OSNA++ patients. In addition, for patients with OSNA+, consideration could be made for pickup of selected suspicious nodes instead of ALND.

520 Poster

Lymphoscintigraphy − is It Important for Accurate Sentinel Lymph Node Biopsy?

S. Kanaev[1], S. Novikov[1], V. Semiglazov[2], P. Krivorotko[2], O. Zotova[1], V. Ivanov[2]. *[1]N.N. Petrov Inst. Oncology, Radiation Oncology & Nuclear Medicine, Saint Petersburg, Russian Federation; [2]N.N. Petrov Inst. Oncology, Breast Cancer, Saint Petersburg, Russian Federation*

Aim of the study: to determine the value of lymph-nodes (LN) scintigraphy as a part of sentinel LN (SN) biopsy in patients (pts) with breast cancer.

Material and Methods: LN visualisation was performed before SLN biopsy in 92 primary pts with breast cancer. Scintigraphic images were acquired 1−15, 30, 240 and 480–720 min after intratumoural injection of 75–150 MBq (0.5−1 ml) of 99mTc-nanocolloids (d <80 nm). Delayed images (obtained 1−2 hr before operation) more precisely visualised hot nodes which can be detected by gamma probe during biopsy. SLN were determined according to the following criteria: first appeared LN in the area, the only visualised LN, LN connected with tumour by the 'the road of lymph flow'. All other LN were considered as second-echelon nodes.

Results: SLN were successfully visualised in 86 of 92 evaluated pts (98%). Axillary LN detected in 83 pts: in 38 (41.3%) pts it was the only region of lymph flow from tumour, in 45 (52.1%) cases − it was accompanied by drainage to internal mammary and/or sub-supraclavicular LN. In 3 pts all SLN were localised outside axillary region: subclavicular − in 1 and internal mammary − in 2 cases.

Second echelon LN detected in 64 of 83 (77.1%) pts with 'hot' nodes in the axillar. 'Hot' nodes revealed in sub-supraclavicular region were SLN only in 4 of 34 (11.7%) cases. On the contrary, visualised internal mammary LN were considered SLN in all 27 observations.

Conclusion: LN scintigraphy must be obligatory done before SLN biopsy in order to differentiate SLN from second echelon axillar LN (77.1% of cases) and because visualisation help to detect SLN outside the axillary region in 36.1% of pts.

521 Poster

The Predictive Factor of Non-sentinel Lymph Nodes Metastases for Breast Cancer Patient with Micrometastsis and Macrometastasis in Sentinel Lymph Node Only

L. Kim[1], Y. Lim[1], Y. Lee[1], J. Kim[1], H. Kim[1]. *[1]Hallym University Medical Center, Division of Breast & Endocrine Surgery, Anyang, Korea*

Background: Sentinel lymph node(SLN) biopsy is considered the gold standard technique for axillary staging in early stage breast cancer. Tumor-positive SLN suggests a risk of non-SLN metastases in breast cancer. This risk is lower after micrometastasis in SLN, and recent studies suggest that completion axillary lymph node dissection (ALND) might not improve outcome in these patients. So, we analyzed the clinicopathological factors of the primary tumor with micrometastasis in SLNs that can influence the risk of additional metastasis in the non-SLNs.

Material and Methods: We retrospectively reviewed the results of 622 consecutive SLN biopsies for breast cancer performed in Hallym University Sacred Heart Hospital from January 2006 to June 2011. We selected 140 patients with positive SLN followed by ALND for invasive ductal carcinoma. In 10 patients, isolated tumor cells were found in SLN and were not included in the study. The study population included that 10 patients with negative SLN after H&E stain had micrometastasis in SLN after IHC, eventually underwent completion ALND. All of the patients had breast cancer with T1 or T2 stage and negative axilla clinically. 69 patients(group 1) had only one of positive SLN after ALND, 71 patients(group 2) had more than 2 positive lymph node including positive SLN. We analyzed group 1 and 2 with clinicopathological factors to predict non-SLN metastasis.

Results: There were no significant differences in clinicopathological factors between patients with micrometastasis and the others with macrometastasis in group 1. Compared with gruop1 and gruop2, tumor size more than 2 cm was associated with non-SLN metastases($p = 0.039$). In addition, histologic grade($p = 0.032$) and lymphatic invasion($p = 0.002$) were significant factor to predict non-SLN metastases. Only 1 of 10 patients with micrometastasis in SLN had non-SLN metastasis. The patients had risk factor-tumor size($\geqslant$2 cm), high histologic grade(3) and lymphatic invasion.

Conclusions: Nonsentinel node metastases are rare with micrometastasis in SLN. Although data from randomized controlled trials are lacking, we suggest SLN dissection is recommended as preferred care for SLN-negative patients and selected patients with SLN-micrometastasis. Despite this, ALND remains the standard management in breast cancer patients

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

522 Poster

Factors Influencing Type of Surgery in Breast Cancer Patients

E. Hashemi[1], N. Mehrdad[1], M. Ebrahimi[1]. [1]*Iranian Center for Breast Cancer, Department of Surgery, Tehran, Iran*

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 Poster

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

Z. Mátrai[1], L. Toth[1], G. Gulyas[2], I. Kenessey[3], A. Savolt[1], A. Tinusz[1], M. Ujhelyi[1], M. Kasler[2]. [1]*National Institute of Oncology, Department of General and Thoracic Surgery, Budapest, Hungary;* [2]*National Institute of Oncology, Department of Head and Neck Laser and Reconstructive Plastic Surgery, Budapest, Hungary;* [3]*Semmelweis University, 2nd Department of Pathology, Budapest, Hungary*

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 reonstruction and the psychosocial background in the decision making of the breast cancer population.

Material and Methods: A questionairre 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 immedite 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 Poster

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

V. Acosta[1], J. Perez F[2], V. Acosta Marin[1], A. Contreras[1], R. Ravelo[1], C.E. Marin[3], A.K. Ramirez[3], M. Acosta Marin[3], I. Longobardi[2], O. Martinez[2]. [1]*Ceclines, Breast Surgery, Caracas, Venezuela;* [2]*Ceclines, Breast Imaging, Caracas, Venezuela;* [3]*Ceclines, Breast Pathology, Caracas, Venezuela*

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 Nº 14 G and vaccum-assisted Nº 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 $\leqslant$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 algotihm 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 afected breast and for the contralateral breast. The possibility of underestimation for cancer exist. Percutaneous breast biopsy with vaccum-assisted and thicker needle gives a lesser underestimation. When ADH is reported $\leqslant$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 Poster

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

S. Cho[1], D. Kim[2], K. Lee[3], J. Lee[4], M. Lee[5], H. Kwon[6], H. Lee[7], S. Lee[6]. [1]*Dong-A University College of Medicine, General Surgery, Busan, South Korea;* [2]*Dong-A University College of Medicine, Pathology, Busan, South Korea;* [3]*Dong-A University College of Medicine, Plastic and Reconstructive Surgery, Busan, South Korea;* [4]*Dong-A University College of Medicine, Diagnostic Radiology, Busan, South Korea;* [5]*Dong-A University College of Medicine, Surgery, Busan, South Korea;* [6]*Dong-A University College of Medicine, Internal Medicine, Busan, South Korea;* [7]*Dong-A University College of Medicine, Radiation Oncology, Busan, South Korea*

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