

analysis of the sentinel lymph node (SLN) thereby avoiding a second operation and reducing patient anxiety. It is not clear how the sensitivity of OSNA will affect the rates of axillary clearance.

Materials and Methods: OSNA analysis was introduced at our institute in February 2011. We assessed consecutive patients over a 6 month period (February 2011 – July 2011) who underwent OSNA analysis of the sentinel lymph node and compared this to the immediate 6 months period prior to the introduction of OSNA where the SLN was assessed using standard histopathological methods. Data was recorded on OSNA results, histopathology of the SLNB, subsequent axillary surgery and primary tumour characteristics. Of the three possible outcomes following OSNA analysis of specimens, we performed axillary clearance if the OSNA result revealed micrometastasis (+) or macrometastasis (++). In the pre-OSNA group, axillary clearance was also performed if the sentinel lymph node biopsy revealed micrometastasis or macrometastasis. Patients found to have isolated tumour cells on histopathological examination were not offered further axillary surgery.

Results: Fifty-two patients underwent OSNA analysis during this period (n = 52), mean age 61.6 years (range 34–84 years) and primary tumour size varied from 6–53 mm (mean 27.6 mm). OSNA result was positive in 22 patients resulting in an axillary clearance rate of 42.3%. In contrast, in the pre-OSNA group (n = 55), mean age was 58.0 years (range 32–78 years) and primary tumour size varied from 3–55 mm (mean 24.4 mm). Axillary clearance rate in this group was less than half compared to the OSNA group at 18.2%. The number of patients with micrometastasis was similar in either group.

Conclusions: The introduction of OSNA analysis in our institute has enabled rapid intra-operative assessment of the SLN. Our axillary clearance rates have more than doubled during this period despite detecting similar numbers of patients with micrometastasis. The results of this study are in keeping with the recent concerns regarding the overtreatment of the axilla in breast cancer patients. This has a significant bearing on management of the axilla as well as logistical planning of theatre sessions to accommodate longer operating sessions.

580

Poster

A Comparative Study of One-step Nucleic Acid Amplification (OSNA), Frozen Section and Touch Imprint Cytology for Intra-operative Assessment of Breast Cancer Sentinel Lymph Node – China Multicenter Study CBCSG-001c

Y.S. Wang¹, T. Ouyang², J. Wu³, Y.H. Liu⁴, X.C. Cao⁵, X. Sun⁶, L. Fu⁷, N. Liao⁸, W.T. Yang⁹, W.X. Zhong¹⁰. ¹Shandong Cancer Hospital & Institute, Breast Cancer Center, Jinan, China; ²Cancer Hospital Beijing University, Breast Cancer Center, Beijing, China; ³Cancer Hospital Fudan University, Breast Cancer Center, Shanghai, China; ⁴Guangdong General Hospital, Department of Pathology, Guangzhou, China; ⁵Cancer Hospital Tianjin Medical University, Breast Cancer Center, Tianjin, China; ⁶Shandong Cancer Hospital & Institute, Breast Cancer Center, Jinan, China; ⁷Cancer Hospital Tianjin Medical University, Department of Breast Cancer Pathology, Tianjin, China; ⁸Guangdong General Hospital, Breast Cancer Center, Guangzhou, China; ⁹Cancer Hospital Fudan University, Department of Pathology, Shanghai, China; ¹⁰Shandong Cancer Hospital & Institute, Department of Pathology, Jinan, China

Background: Sentinel lymph node biopsy has become the standard staging technique for clinically node-negative breast cancer and there is a demand of more sensitive and accurate assessment of sentinel lymph nodes (SLNs). The conventional procedures for intraoperative assessments of SLNs were frozen section (FS) and touch imprint cytology (TIC). They both require experienced pathologists and are not standardized, and they also exhibit low sensitivity in SLN micro-metastases. The China Breast Cancer Clinical Study Group (CBCSG)-001c multicenter study is to evaluate the optimal intra-operative assessment of breast cancer SLNs by a comparative study of one-step nucleic acid amplification (OSNA) assay with FS and TIC.

Materials and Methods: From Feb. to Dec. 2010, 552 consecutive prospective patients were enrolled from five centers across China. The study was approved by the ethics committee of each center and each patient provided informed consent. SLNs were cut into alternating ~2 mm blocks. The odd blocks were tested by the OSNA assay intraoperatively, and the even ones were assessed by postoperative histology. Four 4–6 µm thick sections were taken every 200 µm per block. Metastases were classified according to the 6th criterion of American Joint Cancer Committee, and isolated tumor cells [≤0.2 mm, pT0(i+)] were considered node negative in this study. In addition, intraoperative histological assessments were performed on the even blocks of 211 patients by FS and all blocks of 552 patients by TIC.

Results: A total of 1188 SLNs were excised from 552 patients. Overall performance of the OSNA assay compared to postoperative histology was

accuracy 91.4%, sensitivity 83.7%, specificity 92.9%, positive predictive value 69.1%, and negative predictive value 96.8%. The assay could be performed in a mean time of 37.3 min. The sensitivity of the OSNA assay was higher than FS (211 patients, 77.6% vs. 69.7%, not significant, P = 0.286) and was significantly higher than the TIC (552 patients, 83.6% vs. 76.2%, P = 0.044). When assessing nodes with macro-metastases, the sensitivity of the OSNA assay was similar to FS (59 nodes, 86.4% vs. 83.1%, P = 0.791) and TIC (141 nodes, 90.8% vs. 90.1%, P = 1.00). However, when assessing nodes with micro-metastases, the sensitivity of the OSNA assay was higher than FS (17 nodes, 47.1% vs. 23.5%, not significant, P = 0.289) and was significantly higher than TIC (48 nodes, 62.5% vs. 35.4%, P = 0.007). After discordant case investigation, the sensitivity of the OSNA assay was significantly higher than both FS and TIC (both P < 0.05). The PPV value of the OSNA assay result [++] and [+] on macro-metastases was 83.2% and 19.0%, and on the nSLN metastases was 42.2% and 12.2%, respectively.

Conclusion: The OSNA assay is an accurate and rapid intraoperative assay for assessing breast SLNs and superior to FS and TIC, especially for micro-metastases. The quantitative molecular assessment of the OSNA assay [++] could predict SLN macro-metastases and nSLN metastases. The OSNA assay is objective, standardized and reproducible, and suitable for daily medical practice.

581

Poster

Partial Breast Reconstruction Using Intercostal Artery Perforator Flap (ICAP) in Breast Cancer Patients

J. Yang¹, J. Lee¹, J. Lee², K. Nam², W. Kim², J. Jung², H. Park², Y. Lee³.

¹Kyungpook National University Hospital, Plastic and Reconstructive Surgery, Daegu, Korea; ²Kyungpook National University Hospital, Surgery, Daegu, Korea; ³Hyosung Hospital, Surgery, Daegu, Korea

Background: Oncoplastic breast surgery has been used widely as a treatment protocol for breast cancer. One of them, intercostal artery perforator (ICAP) flap can provide adequate cover without sacrificing any muscle and allow closing of the donor sites in inconspicuous sites. Therefore, the oncoplastic volume replacement techniques using local flap which can cover the volume of breast enough were indicated, especially ICAP was suggested. This study describes the use of intercostal artery perforator flap techniques in partial breast reconstruction.

Patients and Methods: From March of 2010 to September of 2011, 17 patients with breast cancers received the breast reconstruction using ICAP flap. All patients which were selected had small to moderate sized defect on breasts, middle aged, not having sharp sense to scar. The technique was to make an incision through skin and fatty tissue, find the perforator using doppler, dissect from both margin of the flap. The raised flap was taken to transposition at defect site through the tunnel and inframammary fold was reinforced with nonabsorbable suture.

Table 1. Characteristics of 17 Patients Treated for Breast Cancer using ICAP

Patient	Age (yr)	Type of Tumor	Location of Tumor	Weight of Tumor (g)	Tumor Stage	SLN Status	Complication	Adjuvant Therapy
1	60	IDC	LIQ	70	I	Negative		CT, RT
2	47	IDC	LOQ	95	I	Negative	venous congestion	CT, RT
3	46	IDC	LOQ	71	I	Negative		CT, RT
4	39	IDC	LOQ	81	IIA	Negative		CT, RT
5	45	IDC	LOQ	88	IIB	Positive		CT, RT
6	50	IDC	UOQ	82.5	IIA	Negative	venous congestion	CT, RT
7	56	IDC	LOQ	77	I	Negative		CT, RT
8	38	IDC	LOQ	162	IIa	Positive		CT, RT
9	58	DCIS	LOQ	42.5	I	Negative		RT
10	56	DCIS	UOQ	65	I	Negative		RT
11	53	IDC	LOQ	150	I	Negative		CT, RT
12	42	IDC	LIQ	98	IIB	Negative		CT, RT
13	51	IDC	LOQ	83.5	I	Negative		CT, RT
14	44	IDC	UOQ	137.5	IIB	Negative	wound disruption	CT, RT
15	46	IDC	UOQ	112	I	Negative		RT
16	38	IDC	LOQ	77	I	Negative	venous congestion	CT, RT
17	58	IDC	UOQ	132	IIa	Positive		CT, RT

DCIS, ductal carcinoma in situ; IDC, invasive ductal carcinoma; ILC, invasive lobular carcinoma. There were no tumor recurrences.

Results: The mean age was 48.6 years and the average follow-up interval was 6 months. Patients were divided into five groups according to location of tumor (5 UOQ, 0 UIQ, 9 LOQ, 2 LIQ, 1 central). The average specimen weight was 93g. Complication was developed in 4 cases including 3 cases of venous congestion, but self limited, and 1 case of wound disruption on inframammary fold suture area. The majority of patients were satisfied with the cosmetic result.

Conclusions: Intercostal artery perforator flap (ICAP) technique can be reliable and useful technique in correcting breast deformity after breast