μl of lysate determine the node status. OSNA® results are designated as (−) no metastasis (⩽0.2 mm), (+) micrometastasis, (++) macrometastasis, (+)I positivity in the diluted sample only.

Results: 344 SLNs from 160 patients T0, T1 or T2 were analysed. OSNA® detected 15 (++), 11 (+) and 8 (+)I while respectively 13, 2 and 1 were also found positive by permanent histology leading to a positivity rate of 21.25% (34/160). The definitive histology found 5 micrometastasis while OSNA® results were (−) leading to SLN positivity rate of 25%. Additionally, Isolated tumor cells were found for 4 patients. 30 axillary node dissections have been performed in the same surgical session according to OSNA results and 8 have been delayed (6 for positive permanent histology and 2 because of intra-operative OSNA® technical delays). Non-SLNs involvement were shown for 6 patients, all were OSNA® positive. OSNA® median time analysis was 35 min for 2 SLNs and about 5 more min per additional node.

Conclusion: We are not surprised to find discordance between OSNA® and histology for micrometastasis because of the cutting protocol leading to tissue allocation bias. For macrometastasis 13/15 cases were concordant. Finally 138/160 patients are concordant, the positivity rate is 25% in agreement with the literature and our retrospective data with conventional histology practices. Therefore we are confident with the OSNA® system. OSNA® is a rapid tool for intra-operative assessment of SLN status and allowed us to avoid a recall for second axillary dissection for 30/160 patients, while only 7/160 by touch imprint.

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Does intra-operative assessment of sentinel lymph nodes cause over-running of theatre lists or cancellation of operations?

P. Mistry[1], T. Sircar[1], N. Chachlani[1], T. Preece[1], N. Davis[1], G. Thomas[1], J. Simon[1], S. Harries[1], L. Jones[1], D. Clarke[1]. *[1]South Warwickshire General hospital, Breast & General Surgery, Warwick, United Kingdom*

Background: Touch imprint cytology (TIC), is a simple intra-operative assessment of sentinel lymph node (SLN). It provides an immediate result, allowing the surgeon to proceed to an axillary lymph node clearance in patients who are positive for metastasis and avoid a second operation. However proceeding to axillary clearance needs extra theatre time and there is potential for 'over-running' and disruption of a theatre list. The aim of the study was to assess the time required for TIC and if this resulted in 'over-running' of theatre or cancellation of other operations in the theatre list.

Methods: This was a prospective audit of 53 patients who underwent SLN biopsy and TIC. Sentinel lymph node (SLN) biopsy was performed first and sent for TIC. While waiting for the results, surgeon continued with wide local excision or mastectomy. Once TIC assessment was complete the results were phoned to theatre by the pathologist. All timings were recorded prospectively.

Results: Altogether 75 SLNs were biopsied in 53 patients. The mean number of SLNs subjected to TIC for each patient was 1.4 (range 1−3). Average time from harvesting of the nodes to receiving of result of the TIC for each patient was 31 minutes (range 15−53). This was proportional to the number of nodes. Average time taken for each lymph node was 19 minutes. Prolongation of the operation due to TIC was seen in only 9 patients (17%), on an average by 6 minutes (range 1−15). 3 patients (7.4%) had positive TIC and required axillary clearance during primary procedure. 2 out of 38 (5%) theatre lists over ran due to positive TIC and axillary clearance. No operations were cancelled due to TIC.

Conclusion: Prolongation of operation was seen in only 17% of patients on an average by 6 minutes. The chance of 'over-running' of theatre list was only around 5%. No other operations in the theatre list had to be cancelled due to TIC. Thus intra-operative assessment of sentinel lymph node by TIC can be included in the routine practice without major disruption of theatre time.

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Axillary ultrasound examination is useful for selecting optimal patients suited for sentinel node biopsy after primary systemic chemotherapy

T. Shigekawa[1], H. Takeuchi[1], M. Misumi[1], N. Nakamiya[1], H. Sano[1], K. Matsura[1], T. Takahashi[1], N. Fujiuchi[1], A. Osaki[1], T. Saeki[1]. *[1]Saitama Medical University International Medical Center, Breast Oncology, Saitama, Japan*

Background: An accurate evaluation of axillary lymph node (ALN) involvement is essential for the therapeutic indication of sentinel lymph node (SLN) biopsy (SLNB). Although at present breast cancer patients are treated more frequently with primary systemic chemotherapy (PSC), the reliability of SLNB after PSC remains controversial. The aim of this study was to examine the utility of axillary ultrasound (AUS) examination for selecting optimal patients who were suitable for SLNB after PSC.

Material and Methods: Between June 2007 and October 2009, 56 patients with AJCC Stage II or III breast cancer, treated with anthracycline and/or taxane-based PSC and who underwent SLNB followed by complete ALN dissection, were enrolled for the study. All patients underwent AUS before and after PSC for axillary staging. Lymph nodes that were swollen, irregularly shaped, homogeneously hypoechoic without an echo-rich center, and/or had an abundant inflow bloodstream were defined as AUS-positive, in consideration of potentially massive nodal involvement. The preoperative diagnostic accuracy of AUS was compared with other methods such as palpation and positron emission tomography/computed tomography with ^{18}F-fluorodeoxyglucose (^{18}F-FDG PET/CT).

Results: An SLN was successfully identified in 46 patients (82%). The sensitivity of SLNB was 84.8% (28 of 33 patients) and the false-negative rate was 15.2% (5 of 33 patients).

AUS-negative patients both before and after PSC (11 patients) had a better identification rate (91%; 10 of 11 patients), sensitivity (100%; 6 of 6 patients) and false-negative rate (0%; 0 of 6 patients) compared with AUS-positive patients before and/or after PSC (80%, 81.5%, and 18.5%, respectively). The results of AUS were also better than those from palpation and ^{18}F-FDG PET/CT.

Conclusion: SLNB after PSC is feasible and an accurate method for predicting the ALN status of patients who are AUS-negative both before and after PSC. AUS might be recommended for inclusion in assessments during PSC and before surgery for selecting optimal patients suited for SLNB after PSC due to its utility, easy availability, safety (no radiation exposure), and cost-effectiveness. Long-term examinations of more cases are necessary.

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Metastatic internal mammary lymph nodes in breast cancer: target patients and management implications

M. Castellarnau Visús[1], A. Garcia-Tejedor[1], M.J. Pla[1], E. Benito[1], A. Benitez[2], E. Sabrià[1], R. Ortega[3], A. Eraso[4], T. Soler[5], S. Pernas[6]. *[1]Hospital Universitari de Bellvitge, Gynaecology, L'Hospitalet de Llobregat, Barcelona, Spain; [2]Hospital Universitari de Bellvitge, Nuclear Medicine, L'Hospitalet de Llobregat, Barcelona, Spain; [3]Hospital Universitari de Bellvitge, Radiology, L'Hospitalet de Llobregat, Barcelona, Spain; [4]Catalan Oncology Institute, Radiotheraphy, L'Hospitalet de Llobregat, Barcelona, Spain; [5]Hospital Universitari de Bellvitge, Pathology, L'Hospitalet de Llobregat, Barcelona, Spain; [6]Catalan Oncology Institute, Medical Oncology, L'Hospitalet de Llobregat, Barcelona, Spain*

Background: Management of internal mammary sentinel nodes (IMN) in breast cancer is controversial.

We evaluate the target patients of metastatic IMN and we assess its effect on staging, prognosis and treatment of breast cancer.

Material and Methods: We have performed a retrospective study on T1-T2N0 breast cancer patients with lymphoscintigraphic drainage and surgical approach to IMN at the Bellvitge Universitary Hospital from 2000 to 2004. Two groups were considered: positive and negative IMN. Specific tumor characteristics, treatment modification, disease-free survival (DFS) and overall survival (OS) were contrasted by Fisher exact test.

Results: From 682 lymphoscintigraphy performed, 61 IMN drainage were seen and surgical approach was completed in 27 patients. Six patients (22%) had metastatic IMN. Analyses of patients and breast cancer characteristics in both groups are presented in the table.

	IMN	
	Positive	Negative
Mean age	47	48
Premenopausal status	66%	50%
Inner quadrant localization	83%	38%
Histological grade III	**83%**	**28%**
Mean tumor size	16.1 mm	16.6 mm
Invasive ductal carcinoma	100%	95%
Metastatic axillary nodes	0	10.5%
Adjuvant chemotherapy	**100%**	**57%**
IM Radiotherapy	**50%**	**0%**
Adjuvant hormonotherapy	100%	81%
DFS	100%	91.5%
OS	100%	100%

Positive IMN modified treatment in 4 cases (80%) by adding CT (2 cases) or RT (2 cases). Average follow up was 57.5 months.