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Value of axillary ultrasound as a pre-operative staging procedure in breast cancer − a pilot study

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Background: The aim of this study was to determine if the re-operation rate for sentinel node positive patients could be reduced by determining lymph node status preoperatively utilising ultrasound and fine needle aspiration.

Materials and Methods: A retrospective chart and database analysis of 119 consecutive, clinically node negative patients who had undergone pre-operative axillary ultrasound assessment was undertaken. The ultrasound finding was categorised as normal, suspicious or malignant. Patients who had nodes which were suspicious or diagnostic of malignancy had an ultrasound guided fine needle aspiration (FNA). Patients with a normal scan or a suspicious scan in whom FNA was reported as C1 or C2 (benign) were offered a sentinel node biopsy. Patients with a positive (malignant, FNA C5) assessment were offered axillary clearance. The sentinel nodes were not analysed intra-operatively.

Results: Eighty-two scans (69%) were reported as normal. Of these, 63 were node negative on pathological assessment (77%) and 19 were node positive (23%). Sixteen (13%) ultrasound scans were radiologically suspicious (but FNA negative C1=5, C2=11) however, 2 were subsequently found to be node positive. In twenty-one scans (18%) nodes imaged as malignant on ultrasound of which 19 had positive nodes on pathology, 2 patients were false positive (90% positive predictive value). In total, 40 of the 119 patients were node positive. In this study, axillary ultrasound, when reported as either normal or malignant, had a specificity of 97% and a sensitivity of 42%. Unit policy determined that all patients with any nodal metastatic disease (including micro metastatic disease) underwent axillary clearance. Twenty one patients had a secondary node procedure, 2 patients had an axillary clearance which was technically not required. However, the use of axillary ultrasound preoperatively resulted in 20 of the 119 patients (17%) avoiding a second axillary procedure.

Conclusions: This study suggests that preoperative axillary ultrasound with FNA (as indicated), in patients who are clinically node negative identifies a group of patients who have lymph node metastasis. This pre-operative assessment prevents a number of patients from having a second axillary procedure with the potential associated morbidity. We suggest that nodal assessment with ultrasound should be routine for all patients undergoing sentinel node surgery.

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Sentinel lymph node dissection before neoadjuvant systemic therapy in breast cancer: our experience

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Background: Neoadjuvant chemotherapy or hormonotherapy in breast cancer patients is a valuable method to determine the efficacy of systemic therapy and potentially downstage the primary tumor, which facilitates breast-conserving therapy. There is no consensus about sentinel lymph node dissection (SLND) in T2 tumors either before or after neoadjuvant systemic therapy (NST). The aim of this study was to evaluate our experience in SLND biopsy before NST since April 2006.

Material and Methods: A prospective study was performed in two centers: Institut Català d'Oncologia-Bellvitge Hospital and Sant Joan de Déu Hospital of Martorell, since April 2006. SLND was performed before NST by using lymphoscintigraphy in 34 patients staged T2N0. Axillary status pre-surgery was studied by ecography and clinical exploration. SLND was performed in ambulatory surgery regimen. Systemic therapy was started within the first week after surgery in all cases. Axillary lymph node dissection was performed after systemic therapy if the sentinel node contained metastases and avoided when negative.

Results: The rate of SLN identification was 100%. The number of sentinel lymph nodes (SLN) obtained from the surgery was ranged between 1 to 5 nodes. Extra-axillary localization of SLN was internal mammary chain in two cases. Ten patients (29%) had a tumor-positive axillary SLND, and only 1 had additional involved nodes in the completion lymph node dissection specimen. The other 24 patients (71%) had a tumor-negative sentinel node and did not undergo axillary lymph node dissection.

We have observed only two minor complications after SLND: 1 hematoma and 1 seroma with spontaneous resolution. Most of patients were postmenopausal. Neoadjuvant chemotherapy was administered in 30 patients and hormonotherapy in 4. Breast conservative surgery was performed in all cases. Neither axillary nor breast recurrences have been observed at the present follow-up.

Conclusions: Performing sentinel node biopsy before neoadjuvant systemic therapy is successful and reliable in patients with T2N0 breast cancer. A high percentage of patients were spared axillary lymph node dissection, decreasing surgery morbidity.

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Sentinel lymph node biopsy after neoadjuvant chemotherapy in locally advanced breast cancer patients: feasibility, accuracy and disease upstaging

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Background: Sentinel lymph node biopsy (SLNB) is an accepted nodal staging technique in early-stage breast cancer to predict axillary status and lower the morbidity associated with axillary lymph node dissection (ALND). Moreover the SLNB allows for a more accurate staging thorough an exhaustive histopathological examination detecting isolated tumor cells (ITC) and micro-metastases. Neoadjuvant chemotherapy (NCT) is currently used in the management of breast cancer patients with locally advanced disease to facilitate surgical treatment. However, SLNB after NCT remains a point of contention since chemotherapy might have possible negative effects of lymphatic scarring or uneven nodal tumour response. This study was performed to evaluate the feasibility and accuracy of SLNB for patients undergoing NCT and to evaluate the number of this patients that are upstaged from detection of ITC and micro-metastases.

Material and Methods: From 2003 to 2009, 204 patients with stage IIB-III A/B breast cancer underwent NCT. Out of these, 50 patients received SLNB at the time of surgery. Peritumoral and/or subdermal injections of blue dye were used for intraoperative lymphatic mapping. All patients were offered back-up ALND. Negative sentinel lymph nodes (SLNs) were examined by step sectioning, stained with H&E and immunohistochemistry to detect micrometastases. Lymph nodes from ALND specimens were examined by standard H&E only.

Results: The SLN was successfully mapped in 46 patients (identification rate 92%). The mean number of SLNs removed was 1.8 (range, 1−4 SLNs). Twenty-nine (63%) patients had positive SLNs, and in 14 of those patients (30%), the SLN was the only positive node. Two patients had false-negative SLNB; that is, the sentinel node was negative, but at least one non-SLN contained metastases. Accuracy of the SLNB was 97.7%. Of the 29 patients with positive SLN, in 12 cases (41%) we found only small tumor infiltrates: five SLN harboured ITC (11%) and 7 SLN were micro-metastatic (15%).

Conclusions: Our study shows feasibility and an acceptable accuracy of the SLNB to provide scrupulous assessment of the axilla in patients who have received NCT. These results are coherent with current literature and seem promising to spare also in selected patients with locally advanced breast cancer the morbility of ALND. Another important advantage of the SLB is that it leads to a more accurate staging that might change the management and the outcome of these patients.

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Significance of non-sentinel lymph node (SLN) removed simultaneously in SLN biopsy for patients with breast cancer

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Background: Sentinel lymph node biopsy (SLNB) for patients with breast cancer has been firmly established as a conserving method in the axillary lymph node dissection (ALND). However, the problem of metastasis to non-SLN while that to SLN is negative, so-called 'false-negative', is not yet solved. Our goal is to review retrospectively the significance of non-SLN removed simultaneously in SLNB (para-SLN).

Material and Methods: We assessed 441 patients with early breast cancer (T1/T2) who underwent SLNB in Kyushu University Hospital