patients were used as their own controls for changes in time. Statistical comparisons were made by using McNemara's exact test for paired data to detect significant changes between patient responses for before mastectomy, EQ and at LQ, the chi-squared test to test for significant changes in muscular function and cosmesis and the Wilcoxon signed rank test for cosmetic ratings.

33% of patients reported restrictions in ipsilateral arm movements in EQ, Statistically there was no improvement with time. Symmetry was maintained in 33% at 15 years but most patients preferred to forego further revision surgery. Most patients considered the back scar satisfactory, 61% reported it as hidden by the bra strap. Over 50% of patients reported abnormal sensation in the flap and area surrounding it. Pain and discomfort significantly reduced with time. This method of reconstruction was highly satisfactory from the patients' viewpoint with 91% feeling it was worth performing.

In spite of significant restriction of arm movements and asymmetry persisting even after 15 years, most patients were satisfied with their operation.

O-66. A SINGLE INSTITUTIONAL EXPERIENCE WITH SENTINEL NODE BIOPSY IN 400 BREAST CANCER PATIENTS

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Introduction: The technique of lymphatic mapping in breast cancer can spare patients an axillary lymph node dissection (ALND) and stage these patients more accurately. The aim of our study was to evaluate the results of sentinel node biopsy at our institution.

Patients and Methods: From January 1997 to November 2000, 400 consecutive patients with cT1-2N0 breast cancer were studied. The first 82 patients underwent confirmatory ALND. Five patients had a bilateral tumor and 49 patients a non-palpable tumor. The mean histological tumor diameter was 1.9 cm (0.3–8.0) with a pT1 stage in 65.8%, pT2 in 33.9% and pT3 in 0.3%. Preoperative lymphoscintigraphy was performed after injection of Tc-99m-nanocolloid into the tumor in a volume of 0.2 ml and a mean radioactive dose of 2.6 mCi (1.1–4.3). The sentinel node was surgically identified with the aid of patent blue dye (1.0 ml, intratumoral injection) and a gamma-ray detection probe. Sentinel nodes were step-sectioned and stained with H&E and immunohistochemistry (CAM5.2). The median follow-up of patients without ALND after a tumor-negative sentinel node was 11 months (range 1–23)

Results: In 369 of 405 procedures (91%), a sentinel node was visualized during lymphoscintigraphy. The sentinel lymph node was intraoperatively identified in 386 procedures (95%). Pathological examination showed sentinel node metastases in 155 cases. The sentinel node was false negative in four patients corresponding to a sensitivity of 97.5%. Two false negative results were based on routine ALND, one was established through intraoperative palpation and excision of a firm and tumor positive non-sentinel node and one patient developed an axillary recurrence 22 months postoperatively. The sentinel node was not found in 19 patients. Fifteen of these patients underwent ALND (tumor-positive in 7) and 4 received radiotherapy of the axilla. A sentinel node outside level I or II of the axilla was visualized in 106 patients (27%). Internal mammary chain nodes could be harvested in 84% and other non-axillary sentinel nodes in 89% of the patients. The pathological status of non-axillary sentinel nodes changed further treatment in 24% of patients with non-axillary drainage.

Conclusion: Sentinel node biopsy seems to be a highly accurate technique although the follow-up of patients without confirmatory axillary lymph node dissection is short. Excision of sentinel nodes outside level I and II of the axilla can accomplish more precise staging.

O-67. DOES AXILLARY NODE SAMPLING IN ADDITION TO SENTINEL NODE BIOPSY PROVIDE USEFUL STAGING INFORMATION IN PATIENTS WITH BREAST CANCER?

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The aims of this study were to determine if: 1) axillary sampling (AS) in addition to sentinel node biopsy (SNB) reduces the false negative rate of SNB alone. 2) AS predicts those patients with remaining axillary node metastases following a positive SNB.

From a series of 66 patients undergoing SNB using radio-isotope and Patent. Blue V dye, in the last consecutive 38 patients we performed an AS after SNB followed by a completion level II axillary dissection (AD).

Sentinel nodes were identified in 36/38 cases (94.7%); 22 were negative and 14 positive. When validated against AD however there were 3 false negatives (3/17 = 17.6%). Of these, 2 had clinically involved nodes at surgery, but the other false negative was also "missed" by AS. The false negative rate therefore for SNB + AS was 1/17 (5.9%). Of the 14 positive SNB, 7 had further nodal disease in the axilla - in 4 cases this was detected by AS but in the remianing 3 the AS was clear.

SNB is unreliable in the presence of obviously involved nodes and additional AS reduces the false negative rate of SNB alone in this situation whilst AS of clinically uninvolved nodes however does not improve staging. A negative AS following a positive SNB does not exclude the need for further axillary treatment.

O-68. BLUE AND HOT HITS THE SPOT- OR DOES IT NOT? COMPARABILITY OF A FOUR NODE SAMPLE TO SENTINEL NODE BIOPSY

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Of 1180 published studies nearly all suggest the use of SLNB in breast cancer. None have sufficient statistical power; the majority is based on series of less than 40 node positive patients. A study

aiming to establish that a false negative rate of 5% can reliably be achieved (confidence interval = 0–10%) would need at least 300 patients and of 3 studies identified with over 300 patients, 2 had a false negative rate of over 10%. Several well quoted 'validating' studies have 95% confidence intervals of 88–99%, translating to a possible 12% risk of a false negative result.

We have prospectively assessed SLNB within a 4-node sample in 200 patients with breast cancer. As a single blinded study we employed isotope only. Four node sampling was carried out and the most active node identified ex-vivo. The axilla was then probed and any remaining active node(s) removed.

SLN(s) was identified in 96%. It was contained in 80% of the 4-node samples. In lymph node positive patients, 8 had a false negative SLN but only 1, a false negative 4-node sample. Two randomized trials and a large case review have shown 4NAS to be a very reliable staging procedure associated with significantly less morbidity than ANC overall with 4NAS itself having only minimal morbidity. SNB provides a potential alternative to 4NAS and may have a role as an adjunct to 4NAS or vice versa. However, our study suggests that SNB has little to offer those who perform 4NAS and we can provide no evidence to suggest that their current practice should change.

O-69. FACTORS INFLUENCING THE DETECTION RATE AND THE FALSE NEGATIVE RATE IN SENTINEL NODE BIOPSY IN BREAST CANCER

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Background: The development of sentinel node (SN) biopsy in breast cancer has been very rapid, and many hospitals and surgeons have started to do the procedure, after varying level of training. The false negative rate in different studies vary between 0 and 15%. For the method to be useful it is essential that this rate is kept low.

The aim of this study was to evaluate factors influencing the detection rate, and the false negative rate during the learning phase of the SN technique.

Material and Method: All cases from the very first of each surgeon were collected and analysed, 498 cases in all from 17 hospitals and 28 surgeons. The protocol stipulated use of both radioactive isotope and vital blue. After SN had been identified, a formal axillary clearance level I and II was performed.

Results: SN was found in 450 cases (90.4%), and preoperative scintigraphy visualised 82% of the SN. In 66% the SN was detected by both isotope and dye, in 26% with only isotope and in 8% with only dye. Significantly higher detection rate was noted for the same day injection of the isotope compare to the day before (96 vs. 86%). There was a large difference in detection rate between hospitals and single surgeons, from 61–100%. The overall false negative rate was 10.9%. The hospital that performed the operation, the S-phase and tumour multifocality modified the risk of a false negative SN, in an univariate analysis, and in the multivariate analysis high S-phase and multifocality of the tumour was related to a significantly higher false negative rate of the SN.

Conclusion: The results from this study point out that the individual surgeon, the hospital, the combined technique with isotope and dye, the same day injection of the isotope are essential for the detection rate. Factors related to tumour characteristics rather than operation technique seem to be primarily responsible for the false negatives, but this has to be further explored.

O-70. OCCULT AXILLARY LYMPH NODE METASTASES ARE OF NO PROGNOSTIC SIGNIFICANCE IN BREAST CANCER

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The significance of occult metastases in axillary lymph nodes in patients with carcinoma of the breast is controversial. Two groups were studied. The first consisted of 477 women with invasive carcinoma of the breast, who had no metastases seen on initial assessment of haematoxylin and eosin (H&E) sections of axillary lymph nodes (median follow up 19 years, 153 breast cancer related deaths). The second group was 202 patients who had one involved axillary node on H&E sections (median follow up 13 years, 111 breast cancer related deaths). The node negative group had further sections of axillary lymph nodes stained using immunohistochemistry with CAM5.2 and HMFG2, and with H&E. The size of nodal metastases was assessed in both groups.

60 patients (13%) in the node negative group had occult metastases, but there was no difference in survival. Multivariate analysis showed tumour size and histological grade were predictors of survival in the node negative group. There was a significant survival difference between the node negative and the single node positive groups. The size of axillary nodal metastases was not related to survival.

Occult metastases had no effect on survival in this study. Although some studies have found a worse prognosis associated with occult metastases on univariate analysis, there is little evidence that it is an independent prognostic factor on multivariate analysis. The current evidence does not support the routine use of serial sections or immunohistochemistry for the detection of occult metastases in the management of lymph node negative patients, but tumour size and grade are useful.

O-71. DISCUSSION PAPER – SENTINEL NODE BIOPSY: HOPE OR HYPE?

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The breast surgical world is at present obsessed with sentinel lymph node biopsy (SLNB) and many papers have been submitted to this meeting. SLNB on current data appears to offer little over clearance for prognostic discrimination. SLNB offers an