surgeons have proceeded to the randomised phase of this trial, which compares SNB to conventional axillary treatment.

O-55. PREDICTING SENTINEL NODE INVOLVEMENT: MANCHESTER EXPERINCE

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Axillary lymph node status remains the most important predictors of prognosis in breast cancer patients. The introduction of sentinel node biopsy (SNB) in breast cancer management promises to confine the need for therapeutic axillary procedure to patients who have a positive SNB. Identification of patients preoperatively with positive nodes would avoid the need for a second operative procedure

Aim: To determine whether nodal status and tumour size, grade and lymphovascular (LVI) invasion predicts sentinel node involvement.

Methods: We have performed SNB procedure using a combination of isosulfan blue and radioactive isotope injection in 108 patients and have been able to localise the sentinel node in 106 patients. In 2 cases sentinel node was falsely negative.

Results: Of the 106 who had sentinel node identified, 53 had a palpable tumour and 53 had impalpable tumour. 30 patients had positive sentinel nodes. Tumour size and LVI but not tumour grade showed significant correlation with true node involvement. (Chi square test $p < 0.005$ and $p < 0.0008$ respectively.)

Size	Node +ve*	Node −ve	LVI +ve**
<10	1	26	1
11–15	4	27	7
16–20	13	15	14
>20	12	10	8

LVI = Lymphovascular invasion, *$p < 0.005$, **$p < 0.0008$

Conclusion: Lymphovascular invasion predicted for sentinel node positivity, and sentinel node biopsy is inappropriate in these cases, particularly in tumours > 2 centimetres in size.

O-56. THE CLINICAL SIGNIFICANCE OF INTERNAL MAMMARY SENTINEL NODES IN PRIMARY BREAST CANCER

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Introduction: Axillary lymph node status is the strongest prognostic determinant in breast cancer. Although historical studies have demonstrated the importance of internal mammary node involvement in breast cancer prognosis, internal mammary node biopsy is seldom performed. Lymphatic mapping, using lymphoscintigraphy and sentinel node biopsy (SNB) may play a role in re-defining the application of internal mammary node biopsy and primary breast cancer. The aim of this study was to determine the clinical significance of sentinel nodes (SN) identified in the internal mammary chain.

Patients and Methods: Between August 1995 and November 2000, 236 women with clinically lymph node negative primary operable breast cancer, underwent successful lymphoscintigraphy, followed by SNB in conjunction with axillary clearance. The median duration of follow-up was 21 months. The internal mammary nodes were demonstrated as the SN's in 15 cases (6.4%). Internal mammary SNB was successfully performed in 12/13 cases. The SN's were submitted for histological assessment using H and E sections and immunohistochemistry. The axillary dissection specimen was submitted for standard H and E histological sections.

Results: The prevalence of internal mammary SN's for lesions of the superior, medial, inferior and central quadrants of the breast ranged from 12–16%. Tumours situated in the lateral aspect of the breast were less likely to have SN's in the internal mammary chain (2.2%, $p < 0.005$). Access to the internal mammary chain was achieved through the lumpectomy incision in all but one case, where a separate incision was made after obtaining consent from the patient. There were no intraoperative complications relating to internal mammary SNB. In all 12 cases, the internal mammary SN's failed to demonstrate evidence of metastatic tumour involvement. In one case where both internal mammary and axillary SN's were identified, the axillary SN alone was positive for tumour. During the follow up period, one woman developed an isolated internal mammary node recurrence after 12 months. In this particular case, the SN was identified in the axillary region and did not contain metastatic tumour.

Conclusion: Although it is possible to demonstrate internal mammary SN's using lymphoscintigraphy, the clinical impact of identifying and removing these nodes appears small in this series. Further evaluation in a larger series of cases is required.

O-57. FAILURE TO IDENTIFY SENTINEL NODES AT OPERATION FOR SCREEN DETRECTED BREAST CANCERS

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Introduction: Sentinel node biopsy is likely to have its greatest clinical impact for small screen detected breast cancers where the prevalence of axillary lymph node metastasis is low. The aim of this study was to determine the efficacy and accuracy of sentinel node biopsy for screen detected breast cancers compared with symptomatic cancers.

Patients and Methods: Between August 1995 and March 2000, 236 women underwent sentinel node biopsy in conjunction with a level II axillary clearance for clinically lymph node negative primary operable breast cancer. Of these, 113 were screen detected lesions, of which 96 were impalpable. Patients underwent lymphatic mapping using lymphoscintigraphy, blue dye and intraoperative gamma probe. The symptomatic and screen de-

tected groups were compared regarding intraoperative sentinel node detection rates, accuracy, predictive value of a negative sentinel node, and false negative rates.

Results: Intraoperative sentinel node identification was significantly better for symptomatic breast tumours where 112/123 (91%) cases were successfully biopsied compared with 89/113 (79%) screen detected cases ($p < 0.05$). The overall accuracy and predictive value of the negative sentinel node was greater for screen detected lesions although this failed to reach statistical significance (98.9% versus 95.8%, 98.6% versus 91.5% respectively). There was one false negative case in the screen detected group compared with five in the symptomatic group, although due to the low prevalence of axillary lymph node involvement in screen detected population, there was no difference in false negative rates (5.9% screening, 7.8% symptomatic).

Conclusion: Although the accuracy of sentinel node biopsy is maintained for small screen detected breast cancers, failure to identify the mode in approximately 20% of cases may limit the clinical usefulness of the technique in this important patient subgroup.

O-58. PATIENTS WHO ARE NODE NEGATIVE ON AXILLARY NODE SAMPLING: DO THEY RECUR BECAUSE OF OCCULT LYMPH NODE METASTASES MISSED BY THE PATHOLOGIST?

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We examined axillary lymph nodes from 26 node negative breast cancer patients managed by axillary node sampling and no further axillary treatment who subsequently developed axillary recurrence (mean follow up of 7 years) and from 26 matched controls who were node negative on axillary node sample but have not developed axillary recurrence. Lymph nodes were sectioned at 2 additional levels, 100 microns apart. 3 sections at each level were stained with H&E and antibodies to PanCK and MUC1 protein. The original H&E sections from each node were also reviewed.

	No. of cases	No. of nodes	Mets overlooked	No. of Micromets	Total No. of Mets
Axillary Recur Gp	26	133	2 (8%)	2 (8%)	4 (16%)
Control Gp	26	133	0	3 (12%)	3 (12%)

Two patients had metastases overlooked at the time of sampling. 2 patients from the recurrence group and 3 from the control group had axillary nodes which contained nodal micrometastases. Immunohistochemistry was important in identifying all these. Although a small series, this study suggests that axillary recurrence after sampling is not due to missed axillary node metastases but that either the wrong nodes are sampled or axillary recurrence develops subsequently.

O-59. SENTINEL NODE (SN) BIOPSY CAN SAFELY REPLACE AXILLARY NODE SAMPLING FOR STAGING EARLY BREAST CANCER

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Our standard method of assessing axillary node status is sampling of a minimum of four axillary lymph nodes identified by the surgeon. In this study, we assessed the role of SN biopsy in predicting axillary node status and the intraoperative assessment of SN with frozen section (FS) and imprint cytology.

All patients with primary breast cancer up to 2.5 cm in diameter underwent SN identification between April 1998 and March 2001. SN(s) were identified by using both radioisotope and/or blue dye techniques. The SN was assessed intraoperatively using FS only or FS and imprint cytology depending on the availability of cytological expertise. All patients had a sample of a minimum of 4 axillary lymph nodes removed or full axillary clearance if FS of SN was positive.

The SN was identified intraoperatively in 142 of 150 cases (94.66%). An average of 1.3 SN was identified per patient. According to final histology the SN was positive in 51 of 142 patients. Forty-four of these positive SN were identified intraoperatively and 7 were reported falsely negative on FS. Axillary node status was in concordance with the final SN status in all patients. The sensitivity of SN was 100% though the sensitivity of intraoperative assessment was 86.3% (44/51) with a specificity of 100%.

In our unit, axillary sampling does not provide any additional benefit in assessing the axillary nodal status in those patients that have a SN successfully identified. Intraoperative assessment using FS with or without imprint cytology can spare re-operation in up to 86% of node positive patients if axillary clearance is considered to be the best treatment for involved axillae

O-60. SERVICE IMPLICATIONS OF INTRODUCING SENTINEL NODE BIOPSY: EXTRAPOLATIONS FROM THE FIRST 100 PATIENTS RANDOMISED TO THE ALMANAC TRIAL

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Introduction: Randomisation to the ALMANAC Trial sentinel node mapping (SNM) v axillary clearance (AC) started in Guildford in December 1999. In one calendar year surgery was performed on 284 new breast cancers, 33 of which had pure DCIS and the remainder where potentially suitable for the trial.

Methods: 5 groups of patients were identified. 66 had absolute exclusion criteria. 61% of these had positive nodes (N+). 56 had relative exclusion criteria and 14% were N+. 22 refused randomisation and 23% were N+. In 6 patients SNM alone was specifically recommended and all were N−. 100 women accepted randomisation and 26% of these were N+.