

O-7. Blue dye sentinel node (SNL) biopsy is an effective technique for staging axilla in breast cancer patients

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SLN is an effective tool for axillary staging in patients with invasive breast cancer.

Four node sampling is validated and recognised technique in UK for assessment of axilla in breast cancer patients. However SNL biopsy using blue dye alone or in combination with radio isotope is set to become new standard of care in breast cancer patients showing high levels of identification.

The aim of this study was to assess incidence of SNL identification and metastatic involvement using blue dye alone.

207 patients underwent this procedure. Patent blue dye was injected subdermally at skin/areola junction. The axilla was then explored and after identifying blue node, at least three further axillary lymph nodes were sampled as previous protocol. While these glands were sent for frozen section, breast operation commenced. In case of positive frozen section, a formal level II axillary clearance was performed.

Since December 2002 to December 2004 total 78 patients had SNL performed. The detection rate of SNL was 98%. The positive metastatic detection rate was 89.7%. The false negative rate was 10.25.

Dye assisted SNL biopsy is an effective technique for staging the axilla in breast cancer patients. Learning curves and the technical proceeding influence the detection rate significantly. Considering the infancy of the technique further trial should be awaited.

O-8. Sentinel node assisted 4 node-sampling

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The accuracy of 4-node axillary sampling (4NAS) may be enhanced by combining this procedure with sentinel node biopsy. Previously we have demonstrated that radiolabelled colloid targeted SNB may slightly improve the sensitivity of 4NAS (Radiocolloid assisted 4NAS, RCA4NAS). We have now prospectively evaluated blue dye-targeted SNB combined with 4NAS (Blue dye-assisted 4NAS, BDA4NAS).

The aim of this study was to assess regional recurrence rates, after RCA4NAS and BDA4NAS. For RCA4NAS, 200 women who participated in a study evaluating the relative sensitivity of SNB and 4NAS in the same patient (Jan 98–Oct 99) were followed up. For BDA4NAS, 321 women who underwent this procedure (Jan 01–Dec 03) were prospectively followed.

For RCA4NAS, 3 regional recurrences occurred with a mean follow-up of 5.1 years (0.3%/annum). For BDA4NAS, 1 regional recurrence has occurred with a mean follow-up of 2.3 years (0.1%/annum).

This study demonstrates that very low rates of regional recurrence are achieved after 4NAS combined with SNB. Practicality and cost issues favour BDA4NAS and this practice is recommended.

O-9. An audit phase of 511 unselected consecutive cases shows that sentinel node biopsy with blue dye alone is safe and accurate

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Sentinel node biopsy (SNB) has been increasingly used in the management of early breast cancer, mostly with the combined isotope and dye technique. This study examines the efficacy of blue dye alone. Patients were usually admitted on the day of surgery. Patients underwent appropriate tumour excision and SNB plus axillary dissection (L1 usually). Patent Blue V was injected peritumourally in all cases. All cases were included (including training curves for all 16 trainees). Patients with micro metastases in axillary nodes were regarded as node negative.

458 patients (90% - 458/511) had a sentinel node identified. The mean no of SN identified was 1.46 (range 1–7). 166 patients (32.5% - 166/458) were node positive. 15 patients (9% - 15/166) had false negative sentinel nodes. Overall 443 out of 458 S were predictive of axillary stage, with an accuracy of 96.7%. 2 patients (0.4%) had mild allergic reactions to the blue dye.

The “New Start” training programme for SNB in the UK stipulates a minimum standard of 90% SN identification and 10% false negative rate using the combined technique. Using blue dye alone, these standards can be achieved in a district hospital, even when including training for all levels of surgical trainee. SNB using blue dye alone in a district hospital setting can be safe (no radiation), cheap (£6 per case), logistically easy (admission on day of surgery) and accurate.

O-10. The value of immunohistochemistry in sentinel lymph node histopathology in breast cancer

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Introduction: The optimal protocol for the histopathological examination of sentinel lymph nodes (SLNs) in breast cancer has not yet been determined. The value of more detailed examination of the SLNs using immunohistochemistry (IHC) is controversial.

Methods: A total of 476 SLNs from 216 patients were reviewed (LGB and SEP). SLNs were sectioned at 3 levels at approximately 100 µm and stained with haematoxylin and eosin (H&E). If the H&E sections showed no evidence of metastasis, then the 3 serial sections were stained with a murine monoclonal anti-cytokeratin antibody (CAM 5.2). Metastatic deposits were classified as macrometastasis (>2.0 mm), micrometastasis (0.2–2.0 mm) or isolated tumour cells (ITCs, <0.2 mm).

Results: Of the 216 patients, 56 (26%) had metastasis as identified by H&E. IHC detected metastatic deposits in a further 9 patients (4%), of whom 4 (2%) had micrometastasis and 5 (2%) had ITCs only. Those cases with micrometastases were all, on review, visible on the H&E sections.

Conclusion: IHC detects only a small proportion of very small metastases in SLNs, the prognostic significance of which

is unknown. IHC thus appears to be of limited value in the histopathological examination of SLNs.

O-11. Sentinel node biopsy in early breast cancer and its role in nodal micrometastasis: experience at National University Hospital, Singapore

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Objectives: Sentinel lymph node biopsy (SLNB) is fast becoming the standard procedure for the axillary treatment of early breast cancer. We started in Jan 2002, firstly with validation for individual surgeon, where SLNB using Patent blue dye, is performed together with axillary lymph node dissection (ALND). Following this, patients with early breast cancer were offered SLNB. We aim to validate our data against other centres and to assess if patent blue dye alone can be offered if radioisotope facility is not available. We also like to analyse the percentage of micrometastasis alone in SLNB and the need for subsequent ALND.

Material and methods: Between January 2002 and January 2005, 90 patient underwent SLNB under GA. Preoperative 5 ml of Patent blue dye was injected intradermal, peritumoral or periareolar. The SLN was identified intra-operatively by visual inspection after tracing the duct. Following frozen section, ALND was performed for all positive SLNB, including micrometastasis.

Results: In 87/90 patients (96.7%) at least one sentinel node was found. In 65/87 patients (74.7%) the sentinel node was negative on both FS and IHC. Of the remaining 25/87 (25.3%) patients who were positive, 21/25 (84%) were found on frozen examination while 4/25 (16%) were micrometastasis and found only on subsequent IHC. These 4 patients underwent ALND as a second procedure.

Conclusions: Patent blue dye alone may be used in SLNB with good results, if radioisotope facility is not available. Although the preliminary result suggests that ALND may not be needed for micrometastasis in SLNB, we need further trial to confirm this and to look at long term axillary recurrence and survival data.

O-12. Can axillary staging be avoided in a selected group of older women with small non-high grade breast tumours?

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With an increasing proportion of node negative patients, a selective policy for managing the axilla may be more appropriate. Axillary sampling and sentinel node biopsy are alternative methods for staging the axilla, but observation alone may be an acceptable approach for some patients.

In a retrospective analysis of 355 breast cancer patients with either grade I ($\leq 20\text{mm}$) or grade II ($\leq 20\text{mm}$) oestrogen receptor (ER) positive tumours without lymphovascular invasion (LVI), the overall incidence of positive nodes in this good prognostic group of patients was 13% (95% CI 9.5–16.5). When the

analysis was confined to grade I tumours ($\leq 20\text{mm}$) and grade II tumours ($\leq 10\text{mm}$) the overall incidence of nodal metastases was 10% and only 2.7% of grade I tumours ($\leq 10\text{mm}$) had nodal involvement.

In a related study of 173 patients with small ($\leq 10\text{mm}$), non-high grade (I and II), ER positive invasive ductal carcinomas (NST) without LVI, axillary surgery was either omitted (135 patients) or delayed (38 patients) at the time of wide local excision or mastectomy. Rates of axillary recurrence at a median follow up of 36 months were only 1% when axillary surgery was omitted according to patient choice/departmental policy and no cases of uncontrolled axillary recurrence were documented.

These results support the conclusion that axillary surgery (staging/therapeutic) can be safely omitted in a selected subgroup of patients for whom the probability of nodal metastases is of similar magnitude to the false negative rates reported for the sentinel node biopsy technique (5–10%) and for whom the risk:benefit ratio for detection of node positive cases does not justify any form of axillary procedure at the time of primary surgery.

O-13. Morbidity following sentinel lymph node biopsy in primary breast cancer – a randomised controlled trial

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Sentinel lymph node biopsy (SLNB) is a newly developed method of staging the axilla and has the potential to avoid an axillary lymph node dissection (ALND) in lymph node negative patients, thereby minimising morbidity. The aim of this study is to investigate physical and psychological morbidity following SLNB in the treatment of early breast cancer in a randomised controlled trial.

Methods: Between November 1999 and February 2003, 298 patients with early breast cancer (tumours 3 cm or less on ultrasound) who were clinically node negative, were randomly allocated to undergo ALND (control group) or SLNB, followed by ALND if subsequently found to be lymph node positive (study group). A detailed assessment of physical and psychological morbidity was performed over a period of one year post-operatively.

Results: A significant reduction in post-operative arm swelling, rate of seroma formation, numbness, loss of light touch and pinprick was observed in the study group. Although shoulder mobility was less impaired on average in the study group, this was significant only for abduction at one month and flexion at three months. Scores reflecting quality of life and psychological morbidity were significantly better in the study group in the immediate post-operative period with fewer long-term differences.

Conclusion: SLNB in patients undergoing surgery for breast cancer results in a significant reduction in physical and psychological morbidity.