



AXILLARY LYMPH NODE SURGERY INFORMATION SHEET

Axillary Lymph Node Surgery

The objectives of surgery to the axillary lymph glands (armpit lymph nodes) are:

- To check that the cancer has not spread to the lymph glands
- To treat any lymph node disease if the cancer has already spread to the lymph nodes.

Axillary lymph node status is an important indicator of prognosis for breast cancer. Surgery to the axilla and histopathological assessment of axillary nodes is the most accurate way of obtaining this prognostic information. Surgery also aims to remove local axillary disease, hopefully reducing the need for axillary radiotherapy and minimising the chances of axillary recurrence.

The choice between different axillary procedures is based on the balance between obtaining the best possible prognostic information and causing the least possible complications.

Axillary Clearance

An Axillary Lymph Node Clearance is likely to be appropriate for the 35-40% of patients with invasive cancer who have tumour in the axillary lymph nodes. There is strong evidence that axillary clearance reduces the rate of axillary recurrence. Clearance is undoubtedly the best treatment for operable axillary disease and leads to very low axillary relapse rates < 3% at 10years.

After axillary lymph node clearance a drain is usually used for up to 7 days. There is a small but significant risk of lymphoedema (arm swelling), reduced shoulder mobility and arm numbness. These risks are minimized by careful surgery and excellent postoperative rehabilitation and exercises (see breast care nursing file)



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Sentinel Lymph Node Biopsy

Most patients (60-65%) however do not have spread to their lymph nodes and so an accurate but limited sampling of the closest lymph nodes to the breast is all that is required to check they are unaffected. **Sentinel Lymph Node Biopsy** is now regarded as the standard of care in Early Breast Cancer when there is no evidence on examination or scans that the lymph nodes are involved. This carries a much lower chance of complications such as lymphoedema, impaired shoulder function or nerve damage.

The Sentinel Node (or Nodes) can be defined as the **first lymph node(s)** on the lymphatic drainage route out of the breast from the primary tumour. The Sentinel node(s) will therefore be **the first to be involved in tumour spread** if lymphatic spread has reached the axilla. A negative sentinel node (or nodes) therefore predicts for a negative axilla without the need for a full axillary node clearance. Its usefulness hinges on the reliability of the technique and surgeon to be able to find and remove the sentinel node or nodes. The number of SLNs present is variable and different in every patient. Typically there may be 1,2 3 or 4 nodes depending on the number of final drainage routes out of the breast.



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Method for Sentinel Node Detection

Dual modality, combined isotope and blue dye labeling of the sentinel node has been shown in several randomized studies to provide the highest detection rates (and lowest false negative rates).

1. **Radioisotope** - Technitium⁹⁹ labeled colloid (Nanocoll) – harmless radioactive medicine. Injected under the nipple (subareolar) once the patient is under anaesthetic. May also be injected into the tumour by the radiologist prior to surgery if the tumour is impalpable and needs to be located at surgery using the radioactivity detector (Isotope Localised Wide Local Excision)
2. **Patente Blue Dye** – 2mls Patent Bleu V, diluted with 3mls saline. Usually injected under the nipple (subareolar) once the patient is under anaesthetic. Small risk of allergic reaction (1:2000)

Within 10 minutes of injection, the very low dose of radioactivity and the blue dye have travelled out of the breast along the lymphatics and been absorbed by the Sentinel Lymph Nodes. The surgeon will remove all the lymph nodes that are radioactive and /or blue in colour ie the Sentinel lymph Nodes.

After Sentinel Lymph Node Biopsy

Patients will notice a blue complexion, green blue urine and possibly tears for the first 12-24 hrs. This is harmless and fully returns to normal.

There may be a blue green discolouration of the nipple and breast skin for a few weeks or months after surgery but in all but rare cases fully returns to normal



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Results after Sentinel lymph Node Biopsy

If the Sentinel Nodes are Negative, then there is no need for further axillary treatment

If the Sentinel Nodes are Positive, then the Oncology Team will discuss with the patient the benefits of a completion axillary node clearance (at a second operation) versus axillary radiotherapy treatment.

Intraoperative Sentinel Lymph Node Analysis (OSNA).

In some patients (where there is a reasonably strong possibility that the lymph nodes may be positive but preoperative tests have not been able to confirm it) it may be advantageous to test the sentinel lymph nodes during the operation – Intraoperative Sentinel Lymph Node Analysis.

The most reliable technique for this is **OSNA (One Stop Nucleic Acid Analysis)**. OSNA technology can detect cancer spread in the sentinel lymph nodes within an hour and can be done whilst the rest of the breast cancer operation is being carried out. If the OSNA test confirms spread to the lymph nodes then an axillary node clearance can be done **at the same operation**. This saves the need for a second operation a few weeks after the first as would otherwise be necessary. OSNA is available at St Michaels Hospital for selected patients and its suitability for each individual patient should be discussed by the surgeon



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Sentinel Lymph Node Biopsy and Immediate Breast Reconstruction

Whenever possible the axilla should be staged by sentinel lymph node biopsy **prior to the definitive mastectomy and immediate reconstruction operation**. The main reasons for this are:

- If sentinel node biopsy is performed at the time of reconstruction and found to be involved, subsequent axillary surgery (clearance) is both technically more difficult and potentially detrimental to the reconstruction
- In view of the potentially harmful effects of radiotherapy to the reconstructed breast, all attempts should be made prior to reconstruction **to predict the likely need for post mastectomy (and reconstruction) radiotherapy**. The reassurance of a negative sentinel node biopsy in addition to the rest of the staging information will help inform a pre-operative discussion with the clinical oncologists about the likely adjuvant treatment that will be required.

If the SLN is positive, in some circumstances it maybe more appropriate to proceed with simple mastectomy and completion axillary node clearance and a delayed reconstruction performed after all adjuvant treatment (including radiotherapy) has been completed.

Note:

This information is for general guidance only and represents the views and opinions of Mr Iain M Brown Consultant Oncoplastic Breast Surgeon. It should in no way be regarded as either definitive or representing the views of any other surgeon, doctor or institution.