NHS
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Sentinel lymph node biopsy (SLNB)

This leaflet explains what will happen when you come into hospital for your operation and aims to answer some of the questions you may have. It is important that you understand what to expect and feel able to take an active role in your treatment.

This surgery is often performed as a day case under general or occasionally under local anaesthetic. However, depending upon other medical conditions you may have, an overnight stay may sometimes be necessary.

What is a sentinel lymph node biopsy?

Studies have shown that the 'sentinel node' (or 'lead node') technique provides an accurate assessment of the nodes in the armpit in patients with breast cancer. The sentinel node is the first lymph node or group of nodes (there may be up to four) in the armpit to which breast cancer may spread. The presence or absence of cancer cells in these sentinel nodes is important in directing your doctors as to what additional surgery or other treatments you may need. If the sentinel node is free of cancer cells, then no further surgery in the armpit is needed. In 7 out of 10 women with breast cancer, the lymph nodes are not affected and extensive surgery to the armpit and its associated side effects can be avoided.

However, if the sentinel lymph nodes are found to have significant cancer cells, further surgery to the armpit will be required at a second operation to remove the remaining lymph nodes.

Is there an alternative to SLNB?

You will have discussed various treatment options with your doctor so that you can make the best decision for your individual situation. The decision about which type of sentinel lymph node biopsy you will have is made depending on the course of treatment you are going to undertake. This decision is usually taken at the initial consultation between yourself and your breast specialist.

The aim of the biopsy is to find out whether cancer has spread from the breast to the lymph glands and is less invasive than axillary node sampling and clearance. If the results of the SLNB are positive for cancer, then a complete axillary node clearance is usually needed to determine how far the cancer has spread. If the results of the SLNB show that the cancer has not spread, an axillary node clearance is usually not needed.

If you consent to the biopsy, it will provide us with the important information we need to choose the treatment that is best for you.

How is the procedure carried out?

Removal of the sentinel node will be done as part of the planned operation for your breast cancer. The technique to identify the sentinel nodes involves the injection of two substances.

1. Injection of a small amount of a protein found in blood (albumin) tagged with a small amount of radioactivity in the skin around the nipple. This will usually be done the day before the operation or sometimes on the morning of the operation. This radioactive protein will follow the same lymphatics (drainage system) as tumour cells and lodge in the same nodes. You may also have a scan of your breast taken. Usually, these scans are done the day before surgery, or a few hours before surgery on the same day. The total amount of radiation exposure is only equivalent to two mammograms so it is quite safe. By using a scan (gamma camera) these radioactive nodes can be recognised.
   As the radioactive protein is retained in the sentinel nodes for about 24 hours, during surgery the surgeon can trace the small amount of radioactivity in the sentinel nodes by using a gamma probe. This is a handheld penlight-size device connected to a machine which displays the counted radioactivity. In this way the radioactive sentinel nodes can be identified and removed.
2. During the operation when you are asleep under anaesthetic, the surgeon will also inject a blue dye in the skin over the tumour. Lymphatics from the tumour site will be stained blue and can be followed into the blue sentinel lymph nodes. It can result in blue colouring of the skin which may still be seen a year or more later. Rarely, in approximately 1 in 100 patients, it can give rise to an allergic reaction. Usually this responds to simple treatments. Very rarely, a severe (anaphylactic) allergic reaction can occur. If any dye is left, your body will get rid of this over the next 24-48 hours. As a result of this you may notice a bluish or greenish colour tinge to your urine (or other body secretions) which is harmless.

With both techniques (usually the sentinel nodes are blue and radioactive, sometimes only blue and sometimes only radioactive) most surgeons are able to identify the sentinel nodes in over 95% of the patients. An average of two nodes are removed in total but may vary between 1-4 nodes.

To remove the lymph nodes, usually an incision will be made in your armpit; however, depending on the site of any breast incisions needed, it may be possible to perform the operation through these instead. The edges of the incision are brought together to form a scar.

The tissue will be sent to pathology for examination and a report will be produced which will give your surgeon all the pathological (tissue analysis) information. This information will help guide any further treatment you may require.

One step nucleic acid amplification (OSNA)

On some occasions, the lymph nodes will be tested during breast surgery. The removed nodes will be looked at by a pathologist, who will tell the surgeon the result during the operation.

The nodes which have been removed are sent down to be analysed by the OSNA machine. The pathologist will inform the surgeon of the results. If the sentinel lymph nodes have cancer cells in them, the surgeon may then remove the axillary lymph nodes. This is called an axillary node clearance (ANC). Please see separate patient information leaflet on this procedure.

What drugs are used in the procedure?

The injection is 0.5 – 2.0mls of a blue dye (Patent Blue V) and 0.05mls of human albumin (a blood protein) linked to a radioactive isotope called technetium 99. The combination of radioactive isotope/dye has been used safely in thousands of patients in Europe and the USA in the last few years.

Are there any risks in this procedure?

You may have certain side effects which you should discuss with your surgeon. The risks and side effects for this procedure are listed below. Likely side effects are those that occur in more than 5% (1 in 20) of patients who undergo the procedure. Unlikely side effects are those that occur in 5% or less of patients undergoing these procedures.

For the radioactive tracer injection procedure, risks and side effects include:

Likely:

- Exposure to radiation (equal to l/10th to 1/20th of the annual exposure the average person receives from the background natural radiation sources).
- Tenderness, redness and pain in the area of the injection site.

Unlikely:

- Allergic reaction to the injected solution.

For the blue dye injection procedure, risks and side effects include:

Likely:

- Slight blue colouring of the skin around the area of the injection (usually temporary) can be up to several months.
- Tenderness and pain in the area of the injection site.
- Bluish or greenish discolouration of your urine and stools for several hours after injection.

Unlikely:

- Allergic reaction to the injected solution.

Possible complications of axillary surgery

Your consultant will explain any possible complications so that you are aware of these when asked to sign your consent form. Some possible complications are:

- **Infection:** Infection occurs in about 1 in 20 patients, following this sort of procedure but if it occurs, it can usually be treated with antibiotics. Occasionally, however, we may need to open the wound, drain out the infected fluid and then it may need to be packed, in which case it may take some weeks to heal.
- **Haematoma:** Some bruising is inevitable after axillary node clearance. However, very occasionally, blood collects in a lump underneath the wound (known as a haematoma) and this may need to be removed, either in the clinic or by a second operation.
- **Seroma**. Occasionally, fluid collects beneath the wound (called a **seroma**), which may require draining if there is a lot of it and it is uncomfortable.
- **Neuralgia / numbness and wound pain:** In some cases patients may experience a condition called neuralgia, which occurs when there is irritation or damage to a nerve. Symptoms of this may include increased sensitivity to the skin along the path of the damaged nerve, so that any touch or pressure is felt as pain, numbness along the path of the nerve or a sharp, stabbing or burning pain, which can come and go. Other sensations patients may experience are pain, discomfort, altered sensations or numbness in or around the wound and axilla during or after the healing process. Usually, these sensations will settle with painkillers

but if the problem continues, we would recommend that you contact your GP. If necessary, he / she can then refer you back to see us if there is any ongoing problem.

- **Shoulder stiffness:** Shoulder exercises to carry out after your wounds have healed can help your mobility. Your breast care nurses can advise you on these.
- **Thickened scar:** Scar healing is unpredictable and although the scar usually heals up to a fine line, occasionally, the scar heals in a thickened fashion, called a 'keloid' or 'hypertrophic' scar.
- **Lymphoedema:** This is a swelling that occurs in the tissue below the skin, caused by lymph fluid that cannot drain away. The symptoms of this include swelling or puffiness of the arm, hand or chest on the side you had surgery or sometimes feelings of tightness, firmness or heaviness. There are precautions that you need to take to prevent or lessen lymphoedema. These will be discussed with you by one of the breast care nurses. You can also get support from a lymphoedema specialist physiotherapy – ask your breast care nurse for more information. (Please see *Reducing the risk of lymphoedema after axillary lymph node surgery* leaflet for further information).
- **Deep venous thrombosis/pulmonary embolism:** This can happen after any operation and general anaesthetic. Risks are reduced by wearing preventative stockings and giving an anticlotting injection in certain cases.

What happens after my operation?

- **Pain:** It is normal to experience some mild to moderate pain and discomfort after your operation and while the wound is healing. You will also get some moderate bruising around the area. You will be offered painkillers to help reduce the pain and you should continue to use these as required once home.
- **Time off work:** After leaving hospital, you should allow up to 2 weeks off work, although you may require longer than this, depending on the healing process and the type of job you do. Please ask staff if you require a 'fit note' for work so we can provide this before you leave hospital. If you require a longer time off work than is indicated on the certificate, your GP can provide you with an additional certificate.
- **Resuming normal activities:** You should allow yourself time to rest after your surgery. Try not to set yourself big tasks too soon. You should be able to gradually resume normal household activities between 2-4 weeks after surgery when you feel well enough.
  Also avoid heavy lifting, including hoovering and carrying shopping for 2-4 weeks. You should also allow up to 2 weeks before resuming to drive and only then when you can safely perform an emergency stop.
- **Exercises:** You will be given an exercise sheet and encouraged to perform these following advice from the breast care surgery team. It is important to start stretching your arm and shoulder to maintain strength and mobility and to soften scar tissue. If you have ongoing problems with shoulder or arm stiffness, we can refer you to a physiotherapist.

When will I be discharged?

You will leave hospital later the same day of the surgery if you are a day case patient. It is essential that you have an adult who can collect you and drive you home. You will need someone at home with you for at least the first 24 hours.

Occasionally, you may need to stay in hospital overnight due to other medical conditions or to monitor your wound or drain for longer.

Wound care:

Your wound will be covered with a waterproof plastic dressing or surgical glue. If you have a waterproof plastic dressing, you can remove this in 10-14 days. If surgical glue was used, this simply wears off over a few weeks. With either dressing or glue, you can shower the day after surgery but avoid a bath until 5 or 6 weeks. Your stitches are dissolvable, this means they do not require removal but disappear over time (usually a few weeks). There will be swelling and some discharge from the wound when you are at home; this may produce some blood staining on your clothes or bed sheets. This is nothing to worry about. Please contact your breast nurse for advice if you have any concerns. If you have any emergency concerns out of hours, please telephone the Surgical Assessment Unit (SAU) – number at the end of this leaflet.

Please contact your GP if your wound looks infected (hot, red, swollen or you have a fever) so they can assess and prescribe antibiotics if needed.

Surgery follow-up

You will have an outpatient appointment to see your consultant 14-28 days after surgery. At this appointment, a member of the surgical team will check your wound, discuss the pathology results along with further treatment options, and you will have an opportunity to raise any concerns you may have. The appointment will be arranged and communicated to you beforehand.

It may be helpful to bring a relative or friend with you to the follow-up appointment when the results and any additional treatment you may require are discussed.

If other treatments are needed, you will then see a member of the oncology (cancer specialist) team to discuss these. Further appointments will be made for you as needed.

Useful contact details

Department of General Surgery – Breast Unit: 0118 322 6890

Pre-operative Assessment Clinic: 0118 322 8532

Breast Care Nurses: 0118 322 7420 or email: breastcarenurses@royalberkshire.nhs.uk

Surgical Assessment Unit: 0118 322 7541 or 7542

Patient Advice and Liaison Service: 0118 322 8338 or email: PALS@royalberkshire.nhs.uk

Breast Cancer Support Groups

The groups meet every month, details below:

(Please contact the relevant contact for up-to-date information on the next meeting.)

Breast Cancer Support Group Reading – AKA The B-team:

First WEDNESDAY of every month at 6.30pm (please check before attending as programme dates can vary at times). Meet at the Apex building (next to Reading station), Forbury Road, Reading RG1 1AX. Please contact the B-Team via email bteam.berkshire@gmail.com for up-to-date information on the next meeting, or via Facebook (private group) by searching for “Breast Cancer Support Group Reading – AKA The B-Team”

Newbury Support Groups:

Newbury Breast Cancer Support group meets the second TUESDAY of the month at 2.30pm, in the restaurant foyer at Thatcham Garden Centre, Bath Road, Thatcham RG18 3AN.

Please contact: Ann Pocock, Breast Cancer Care Volunteer 07717 182 427, email: annpocock53@btinternet.com or Sally Hook 07890 546 640, email:shook46@hotmail.com.

Newbury Cancer Care also run a general cancer support group, called Coffee Connections. They meet on Mondays (except Bank Holidays) in the Waterside Centre (behind Camp Hopson) from 10am-12pm.

There is a general cancer support group in Thatcham, who meet in the Thatcham Parish Hall (opposite Forresters Hair Salon on the A4 – parking is in the Waitrose car Park behind the hall). This group meet from 10.30am-12.30pm each Thursday.

To find out more about our Trust visit www.royalberkshire.nhs.uk

Please ask if you need this information in another language or format.

RBFT Breast Unit, July 2025. Next review due: July 2027.