Department of Plastic and Reconstructive Surgery

Sentinel Lymph Node Biopsy procedure for Malignant Melanoma

Introduction

This information sheet explains the reasons for performing a Sentinel Lymph Node Biopsy (SNLB) and what the test itself involves. It should be used as a guide only, to help you remember the points discussed with you in clinic.

Why is the procedure needed?

The lymphatic system forms part of the body's natural defences against infection. It is made up of tiny lymphatic vessels, along which sit lymph nodes, particularly in the neck, armpits and groin. They are small kidney bean-shaped structures, often referred to as 'glands', which filter the lymphatic fluid that travels through them, removing dying cells and bacteria.

It is relatively uncommon for melanoma to spread into other parts of the body without passing through the first draining lymph node. The purpose of the SNLB is to accurately identify the location of this, the **sentinel** lymph node, remove it and examine it under a microscope to find out if it contains melanoma cells.

If melanoma cells are not found, no further surgery is needed and you will continue under regular outpatient follow up. If, however, melanoma cells are found to be present in the sentinel lymph node, another surgical procedure would be recommended; the removal of all the lymph nodes close to the original sentinel node, (a lymphadenectomy or block dissection).

How is the procedure performed?

The sentinel lymph node biopsy procedure involves three steps:

1. A lymphoscintigram (an injection and scan in the Nuclear Medicine Department)
2. Intraoperative lymphatic mapping with blue dye (under general anaesthetic in the operating theatre)
3. Selective biopsy of lymph nodes identified as **sentinel** lymph nodes performed at the same time as the wide local excision, (WLE); the surgical removal of additional skin and tissue around the site of the primary, (original), melanoma.

Lymphoscintigram

This is a nuclear medicine scan and is also referred to as a **lymphatic drainage scan**, or a **mapping test**. This procedure is usually done in the morning before your operation later that day.

How is it done?

A tiny dose of radioactive tracer is injected into the skin around the site of the primary melanoma. The tracer moves through the skin's lymphatic channels and special scans are performed to determine the regional lymph node area to which drainage occurs. Scans are done immediately and over the course of several hours.

Although the tracer is radioactive there is no significant risk to you from its use; firstly because the dose is so small and secondly because, in any case, it loses its radioactivity very quickly.

The location of lymph nodes identified as **sentinel** nodes, will be marked on the skin with indelible ink in the form of a small cross.

Are there any side effects?

The side effects which may be associated with this scan are slight pain at the injection site during and shortly after the injection. The injections may sting about as much as the local anaesthetic you had when the primary melanoma was removed. You may also experience some redness at the injection site for an hour or so afterwards.

Intraoperative lymphatic mapping procedure

The procedure is performed in the operating theatre under general anaesthetic. A blue dye, called Patent Blue V, is injected into the skin around the site of the primary melanoma. The blue dye is rapidly absorbed into the lymphatic drainage channels and moves to the regional lymph nodes. The blue dye colouring will assist the surgeon in identifying the **sentinel** lymph nodes more easily.

Are there any side effects?

This procedure may be accompanied by blue discolouration of the infected skin and discolouration of the lymphatic channels leaving the injection site. However, this discoloured tissue is usually removed completely as part of the wide local excision procedure. There may be discolouration of the urine lasting no more than 48 hours. There is also the possibility of an allergic reaction, although this is very rare.

After the intraoperative mapping procedure is performed, the selective lymph node dissection will be done. This consists of removing those lymph node(s) which are first in line in the regional lymph node site and therefore the most likely to contain disease **if** the melanoma has spread.

Selective lymph node dissection

This procedure is performed in the operating theatre **at the same time** as the wide local excision. An incision is made in the regional lymph node area(s) identified by the pre-operative lymphoscintigram. Blue **sentinel** nodes which are identified will be surgically removed and sent to the Pathology Department for examination.

What are the side effects?

The side effects which might accompany a selective lymph node dissection may include the following:

1. Pain and/or discomfort at the site of incision.
2. Loss of sensation in and around the site of incision as well as in the area immediately adjacent to the site.
3. Occasionally a little fluid may collect at the incision site, (seroma), which may be accompanied by local infection.
4. Occasionally some swelling of the limb or area nearest the incision site might occur.

Wide local excision of the melanoma scar

This is undertaken under general anaesthetic at the same time as the sentinel node biopsy. Once the area is removed, if the wound does not close directly, a skin graft or local flap may be required to reconstruct the defect during the same operation.

Completion lymph node dissection

If melanoma cells are found to be present in a **sentinel** lymph node when the Pathologist examines it, it will be recommended that a completion lymph node dissection be performed within four to six weeks of the sentinel node biopsy.

This procedure is the removal of **all** the lymph nodes in a specific region, for example neck, armpit or groin.

What are the side effects?

The side effects which might accompany a complete lymph node dissection may include the following:

1. Swelling in the limb or area nearest the dissection site.
2. Loss of sensation in and around the site of surgery as well as in the areas immediately adjacent to the operative site. Some degree of loss of sensation might be permanent.

3. Distortion of the natural anatomy in the operative site. This is a consequence of surgery which cannot be totally avoided, but one which your surgeon will make every attempt to minimise without compromising the effectiveness of surgery.
4. Increased susceptibility to infection in the involved limb if injury occurs. This will require more attention to skin cuts or abrasions in the involved area in the future.

Further Information

You may find the following contact telephone numbers useful:

- For general questions and queries, the Skin cancer Specialist Nurses: 01223 348156
- For Pre-Admission information, the Plastic Surgery Admissions Co-ordinator: 01223 348658
- For Post-Operative queries, the Plastic Surgery Unit: 01223 348509

If you have access to the internet you may find the following sites useful:
www.cancerreasearch.org
www.macmillan.org.uk

We are currently working towards a smoke-free site. Smoking is only permitted in the designated smoking areas.

For advice and support in quitting, contact your GP or the free NHS Stop Smoking helpline on 0800 169 0 169

Help with this leaflet:

If you would like this information in another language, large print or audio format, please ask the department to contact Patient Information: 01223 216032 or patient.information@addenbrookes.nhs.uk

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