

IMAGE-GUIDED BIOPSY

A biopsy is an operation in which a blunt needle is passed into an abnormality to take small samples to send for analysis in order to make a precise diagnosis.

Image-guided refers to the use of scans and a computer to precisely locate and target an abnormality within the brain. Your scan is uploaded onto a computer in the operating room, and a navigation system is used to locate the tumour (frameless stereotaxy or image-guidance).

WHY DO I NEED A BIOPSY?

A biopsy is usually performed because your scans have shown an abnormality lesion in the brain. A biopsy is needed to be certain of the diagnosis so that we can plan the best treatment for you and give you more accurate information on prognosis. Sometimes (1%) a diagnosis cannot be made despite the biopsy.

HOW IS THE BIOPSY PERFORMED?

This is usually performed under a general anaesthetic.

In the operating theatre a neuronavigation system (like a satellite navigation system) will then be used together with your pre-operative scan data to precisely locate the site for the biopsy (target).

An incision is then made and a special drill used. Using the navigation system the biopsy needle is passed into the tumour and a series of biopsies taken. The wound is then closed with stitches and staples for the skin.

WHAT HAPPENS AFTER SURGERY?

You will be transferred to the recovery area for a short time and then to the day-case unit where observations will be performed regularly. This will include an assessment of your conscious level (asking you to follow simple commands, opening your eyes and answering questions), examination of your pupil responses, tests of your limb strength and checks on your pulse, blood pressure and respirations. After three to four hours you will have a CT scan of the head before your discharge (either home or back to your local hospital). Occasionally it is necessary to stay in for longer.

A biopsy is not particularly painful but you will be given some tablets for any headaches and if you feel nausea you will be given drugs to relieve this symptom. You will often be given steroids to prevent swelling (in a slowly reducing dose) and anti-epileptic drugs to prevent fits in the early post-operative period. You can eat, drink and mobilise as soon as you feel able to, which is usually within a few hours of surgery.

WHAT HAPPENS AFTER DISCHARGE?

Your specialist will normally arrange a telephone appointment with you to discuss the results of the biopsy, when the results are available. This is usually within 7-10 days

but there is some variation. Your surgeon will also explain to you any plans for further treatment and follow-up. The staples can be removed from your wound at 5 days, and you can wash your hair after this time. Your specialist will also explain to you any plans for further treatment and follow up.

You may have some mild headaches, which will lessen with time and you may feel tired and need to rest at home. If you are taking steroids, the dose will slowly be reduced, as prescribed by your surgeon.

You will not be able to drive for a time determined by your symptoms and diagnosis. You should inform the DVLA of your diagnosis and give them the name of your treating surgeon by calling 0300 790 6806. They will send a form to your surgeon for completion. The DVLA will then inform you of the date on which you may return to driving. For further information, the DVLA's guidelines are published on-line at <https://www.gov.uk/government/publications/at-a-glance>. Because of the small risk of a fit, you should also avoid any other activities that may put you at risk if you were to suffer a brief loss of consciousness, such as, climbing ladders, operating certain machinery or swimming unsupervised.

WHAT ARE THE RISKS OF A BIOPSY FOR A BRAIN TUMOUR?

Every operation carries a risk. Overall, complications following a biopsy are rare and the degree of risk depends on a number of factors, for example, location and type of the tumour, your general medical health, any medications you may take and age. Your surgeon will explain to you the particular risks associated with your operation and give you an indication of the likely chance of complications occurring. Complications include, but are not exclusive to, the following:

Haematoma (blood clot)

Brain swelling

Infection

Fits

These problems can result in a temporary or permanent neurological deficit (stroke e.g. paralysis of limbs, loss of speech, loss of visual field).

Some of these complications might be serious enough to warrant further surgery and some can be life threatening. Overall, as a general guide, the incidence of serious complications causing severe permanent neurological deficit (stroke) or death is about 1-2%.

DOES THE BIOPSY ALWAYS GIVE A DIAGNOSIS?

Very occasionally the tiny samples of tissue will not be sufficient to give a definite diagnosis and the operation may need to be repeated. This happens to about 1% of patients, therefore, there is a 99% chance that the operation will give a diagnosis. Some primary brain tumours may not be the same all the way through and there is a small chance, therefore, that a small biopsy is not fully representative of the whole tumour. This could lead to the tumour being incorrectly graded. We try to avoid this sampling error by taking several biopsies from different locations from the tumour and by targeting the most abnormal areas on the scan.

WILL MY SYMPTOMS IMPROVE?

No. The aim of the operation is to obtain a diagnosis in order to plan your future treatment and to be able to give you an indication of prognosis.

WHAT SHOULD YOU NOTIFY YOUR DOCTOR OF AFTER SURGERY?

We have written a separate leaflet on post-operative symptoms and who to contact if required.

- Headaches specifically on waking and not relieve by pain killers.
- Headaches that are progressively worsening
- Nausea and/or vomiting that doesn't settle or increasing drowsiness
- Fits
- Fever
- Wound problems (increasing pain, swelling, discharge)
- Development of new or worsening symptoms (weakness, numbness, and/or altered sensation)
- Visual disturbances
- Nasal leak or salty taste in the mouth
- Facial weakness
- New or worsening speech problems
- Swollen or painful calves (*risk deep vein thrombosis)
- Rash

If you are at home you could discuss your symptoms with your GP, call your neuro-oncology specialist nurse (if you have one) or contact your surgeon and his team at the hospital, on the numbers detailed below:

Erme Ward 01752 431951 / Postbridge Ward 01752 431225

Neurosurgical On-Call Registrar via Derriford Switchboard 01752 202082

Neuro-Oncology Specialist Nurse available 8am – 4pm 01752 431210

NHS 111 for advice or 999 in case of an emergency