

Percutaneous Biopsy of the Lung

Introduction

This leaflet tells you about the procedure known as percutaneous lung biopsy. It explains what is involved and what the possible risks are. It is not meant to replace informed discussion between you and your doctor, but can act as a starting point for such a discussion.

Whether you are having the percutaneous biopsy as a planned or an emergency procedure, you should have sufficient explanation before you sign the consent form.

Radiologists are doctors specially trained to interpret images and carry out more complex examinations. They are supported by radiographers who are highly trained to carry out x-rays and other imaging procedures.

What is a percutaneous lung biopsy?

A needle biopsy is a way of taking a small piece of tissue out of your chest, using only a tiny incision, so that it can be examined under a microscope by a pathologist, an expert in making diagnoses from tissue samples. Because this biopsy is done through the skin, it is called a percutaneous biopsy.

Why do I need a percutaneous lung biopsy?

Other tests that you have had, such as a Chest x-ray or a CT scan, will have shown that there is an area of abnormal tissue inside your lung or chest. From the scan, it is not always possible to say exactly what the abnormality is due to, and the simplest way of finding out is by taking a tiny piece of it away for a pathologist to examine.

What are the options or alternatives?

The only realistic alternative to obtain a piece of tissue is an open operation.

Who has made the decision?

The consultant in charge of your case, and the Radiologist will have discussed the situation at the multi-disciplinary meeting, and feel that this is the best thing to do. However, you will also have the opportunity for your opinion to be considered, and if, after discussion with your doctors, you do not want the procedure carried out, you can decide against it.

Who will be doing the percutaneous biopsy?

A specially trained doctor called a Radiologist. Radiologists have special expertise in using x-ray and scanning equipment, and also in interpreting the images produced. They need to look at these images while carrying out the biopsy.

Radiographers and Radiology Nurses will be present in the room to assist during the procedure, they will introduce themselves at the start of the procedure.

Occasionally student radiographers or medical students will be present to observe the procedure.

Where will the biopsy take place?

Within the CT scanner or occasionally using an ultrasound machine of the Medical Imaging Department.

Cancelling your appointment

If you are unable to attend your appointment, we would be grateful if you could contact us on **(01392) 402336** as soon as possible. We can then offer your original appointment to another patient. A further date and time will then be arranged for you. Please be advised that if you fail to attend your appointment, it may be necessary to remove you from the radiology waiting list.

Please note: If you have had D&V (diarrhoea and vomiting) you will need to contact us to rebook your appointment unless you have been clear for the past 48 hours.

How do I prepare for percutaneous biopsy?

- You may need to be an inpatient in the hospital, although many biopsies can be performed as an outpatient / day case.
- You will have had some blood tests performed before the procedure to check that you do not have an increased risk of bleeding.
- You are asked not to eat for 4 hours prior to the procedure. You may drink a little water.
- You will need someone to drive you home and to look after you for 24 hours.
- You should be prepared to stay overnight if necessary.
- If you have any allergies or you have previously reacted to intravenous contrast medium, you must let the doctor know. Intravenous contrast medium is the injection we give you during some scans.
- If you are diabetic, please contact the Medical Imaging Department on **01392 402336 selecting option 2, in-patient enquiries and then option 8 for the radiology nurses.**
- If you normally take any medication to thin your blood (anticoagulation or antiplatelet drugs) such as : warfarin / clopidogrel / aspirin / non-steroidal anti-inflammatory drugs (NSAIDS / brufen / ibrufen / nurofen) / dabigatran (Pradaxa) / rivaroxiban

(Xarelto) / Apixaban (Eliquis) / phendione / acenocoumarol – then these may need to be stopped or altered. Please seek the advice of your hospital consultant or nurse specialist as soon as possible. Alternatively, contact your GP or the Medical Imaging Department on **01392 402336 selecting option 2, in-patient enquiries and then option 8 for the radiology nurses.**

- After discussion with your GP or referring clinician, and you can safely stop these medications it is recommended that:

Warfarin is stopped 6 days prior to your procedure

Aspirin is stopped 7 days prior to your procedure

Clopidogrel is stopped 7 days prior to your procedure

NSAIDS are stopped 2 days prior to your procedure

Rivaroxaban (Xarelto) and Apixaban (Eliquis) are stopped 2 days before your procedure.

If you are taking Dabigatran (Pradaxa) please consult your doctor or contact the Medical Imaging Department on **01392 402336 selecting option 2, in-patient enquiries and then option 8 for the radiology nurses.**

- Other medication should be taken as normal.

Can I bring a friend/relative?

Yes, but for reasons of safety they will not be able to accompany you into the x-ray room.

What actually happens during a percutaneous biopsy?

You will lie on the scanning table and you may need to have a needle put into a vein in your arm.

The Radiologist will keep everything as sterile as possible. Your skin will be cleaned with antiseptic, and you may have some of your body covered with a theatre towel. The Radiologist will use the CT scanner to decide on the most suitable point for inserting the biopsy needle.

Your skin will be then anaesthetised, and the biopsy needle inserted into the abnormal tissue.

While the first part of the procedure may seem to take a while, actually doing the biopsy does not take very long at all, and the needle may be in and out so quickly that you barely notice it.

You will be asked to keep still and hold your breath for short periods of time.

You should try to avoid coughing during the procedure. We realise this can be difficult. If you need to cough then try to cough as gently as possible. If you do cough we may need to abandon to procedure.

Will it hurt?

Most biopsies do not hurt at all, although occasionally the lining of the lung is sensitive and may be painful. When the local anaesthetic is injected, it will sting to start with, but this soon passes, and the skin and deeper tissues should then feel numb. Later, you may be aware of the needle passing into your body, but this is generally done so quickly, that it does not cause any discomfort at all.

There will be a nurse, or another member of clinical staff, standing next to you and looking after you. If the procedure does become painful for you, then they will be able to arrange for you to have more painkillers through the needle in your arm.

How long will it take?

Every patient's situation is different, and it is not possible to give a general answer. It may be over in 30 minutes (although the needle is usually in the chest for a much shorter time than this), although you may be in the Medical Imaging Department for about an hour altogether.

However, you can ask your Radiologist (who will have been able to assess your case individually) and they should be able to let you know roughly how long it will take.

What happens afterwards?

You will be taken back to your ward on a trolley. Nurses on the ward will carry out routine

observations, such as taking your pulse and blood pressure to make sure that there are no problems. You will generally stay in bed for a few hours, until you have recovered. You will need a chest x-ray. Usually this is done 3 or 4 hours after, occasionally it is necessary for a chest x-ray to be performed immediately.

What will happen to the results?

A report of the procedure will be recorded in your notes immediately and also sent to your specialist within 48 hours. Do not expect to get the result of the biopsy before you leave, as it takes approximately one week for the Pathologist to do all the necessary tests on the biopsy specimen. The pathology result will be sent to your specialist.

What happens next?

All being well, you will be allowed home either on the same day, or perhaps the next. You can resume normal activity 48 hours after the biopsy. However, we ask all patients who have had a lung biopsy to avoid flying and scuba diving for a minimum of six weeks after the procedure. This is because there is a small risk of the lung collapsing afterwards even if it has not done so at the time of the biopsy.

If at any stage after the biopsy you develop shortness of breath / chest pain / cough up blood you should seek urgent medical attention and return to the emergency department.

Are there any risks or complications?

Percutaneous lung biopsy is a very safe procedure, but there are a few risks or complications that can arise, as with any medical treatment.

Mild complications

It is common to have a bruise up to the size of a 50p piece around the needle biopsy site; this will disappear naturally within 2 to 3 days. The dressing can be removed after 24 hours.

More serious complications

Puncture of the lung can result in a small air leak and collapse of part of your lung (this is known as a pneumothorax), this can occur when biopsies are taken. This can cause a sharp pain in the chest and some breathlessness. The risk of this is about 1 in 3 patients. However, in most cases the air leak is very minor and heals up itself without the need for further intervention. Occasionally, around 1 in 20 procedures, a larger pneumothorax occurs and you may need to stay in hospital and have a chest drain (a thin tube) inserted in between two ribs under local anaesthetic to remove any air leaking from the lung. This would mean staying in hospital for a few days.

Slight bleeding may occur from the lung when biopsies are taken. Some people cough up a little blood during or shortly after the procedure.

Very serious complications

Internal bleeding requiring an operation to stop it is very rare (1 in 1000 procedures).

Air embolism - Very rarely air can leak into the blood circulation during a lung needle biopsy. If this occurs it can cause chest pain or serious problems like a heart attack or stroke. The risk of this complication occurring is 1 in 3,000 procedures.

There is a small risk to life – the risk for this is 1 in 5000 procedures.

Unfortunately, not all biopsies are successful. This may be because, despite taking every possible care, the piece of tissue which has actually been obtained is normal tissue rather than abnormal. Alternatively, although abnormal tissue has been obtained, it may not be enough for the pathologist to make a definite diagnosis. The radiologist doing your biopsy may be able to give you some idea as to the chance of obtaining a satisfactory sample.

Despite these possible complications, percutaneous biopsy is normally very safe, and is designed to save you from having a bigger procedure.

Some of your questions should have been answered by this leaflet, but remember that

this is only a starting point for discussion about your treatment with the doctors looking after you. Make sure you are satisfied that you have received enough information about the procedure, before you sign the consent form.

Valuables

Patients are encouraged to leave their valuables at home. It is the patient's responsibility to ensure all valuables are on their person before leaving the Medical Imaging Department.

Contact us

If you have any queries or concerns please contact us on **01392 402336**.

How to get to the Royal Devon & Exeter Hospital at Wonford

Park & Ride

Our Dartline PR3 Park & Ride bus is quick and not expensive.

It runs from Wonford Hospital to Digby. Digby is near Tesco, the railway station and junction 30 of the M5. There are signs along some of the main roads into Exeter pointing to the RD&E park and ride.

The park and ride service runs from Monday - Friday. **There is no service at the weekend.**

Sat Nav - EX2 7PZ.

By bus

Stagecoach buses H Service run to Wonford Hospital from the high street in the city centre Monday to Saturday. Limited Sunday service. They also run to Wonford Hospital from the Broadfields area.

Stagecoach buses from Exmouth (57), Dawlish (2), Torbay (X46), Teignmouth (2) and Plymouth (X38) stop next to the hospital on Barrack Road.

First Southern National bus X53 from Weymouth, Seaton, Beer and Sidford stops next to the hospital on Barrack Road. Turner's Tours bus 369

from Chulmleigh, Lapford, Morchard Bishop and Crediton stops next to the hospital on Barrack Road and outside the main front entrance of the hospital.

By car

Follow signposts to the hospital from most of the main routes into Exeter . Follow signposts in the hospital grounds to our car parks.

Car parking is by pay & display, so please bring change.

The number of spaces is limited, so please leave plenty of time to find a space.

Using Sat Nav to find us?

Tap in postcode: EX2 5DW for RD&E Wonford

For more information on how to get to the hospital, please use the following website:

www.rdehospital.nhs.uk/patients/where

For more information on the Medical Imaging Department, please visit our website:

www.rdehospital.nhs.uk/patients/services/medical-imaging

*Modified with acknowledgment of, and permission from,
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