

Percutaneous Kidney / Renal Biopsy

Introduction

This leaflet tells you about the procedure known as percutaneous renal 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 renal 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 the 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 renal biopsy?

A needle biopsy is a way of taking a small piece of tissue out of your body, 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 renal biopsy?

Your kidneys may not be functioning normally, in which case a biopsy is the most accurate way to obtain a diagnosis. Occasionally other tests

such as an ultrasound scan or a CT scan will have shown that there is an area of abnormal tissue in one of your kidneys. 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 other way of obtaining a piece of tissue for diagnosis is via an open operation.

Who has made the decision?

The Consultant in charge of your case, and the Radiologist will have discussed the situation, 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 performing the percutaneous renal biopsy?

In most cases, a specially trained doctor called a Radiologist will perform the procedure. If a procedure can be done using ultrasound, an Advanced Sonographic Practitioner may perform the procedure. Both have expertise in utilising specialised scanning equipment to perform the procedure safely and to interpret the images produced.

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 Radiologists in training will perform part or all of the procedure under the supervision of an experienced consultant. Student Radiographers or Medical Students may also be present.

Where will the biopsy take place?

In the Medical Imaging department.

How do I prepare for percutaneous renal biopsy?

- You may need to be an inpatient in the hospital, although many biopsies can be performed as an outpatient.
- 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, option 6** Interventional Radiology.

- If you normally take any medication to thin your blood (anticoagulation or antiplatelet drugs) then these may need to be stopped or altered. Please contact the Medical Imaging Department on 01392 402336 selecting option 2, in-patient enquiries and then option 6 for Interventional Radiology.

Examples of these medication include:

- **Warfarin, Phendione, or Acenocoumarol**
- **Clopidogrel, Ticagralor or Aspirin**
- **Non-steroidal anti-inflammatory drugs (NSAIDS)** (e.g Ibuprofen, Naproxen)
- **Dabigatran** (Pradaxa), **Rivaroxiban** (Xarelto), **Apixaban** (Eliquis), or **Edoxaban** (Lixiana)
- Other medication should be taken as normal.
- A pregnancy test may be performed on arrival.

What actually happens during a percutaneous renal biopsy?

You will lie on the ultrasound or scanning table, in the position that the Radiologist has decided is most suitable, usually lying on your front. You will need to have a needle put into a vein in your arm, so that the Radiologist can give you a sedative or painkillers if required.

The Radiologist will keep everything sterile and will wear a theatre gown and operating gloves. 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 ultrasound machine or 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 kidney or 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.

Will it hurt?

Most biopsies do not hurt at all. When the local anaesthetic is injected, it will sting to start with, but this soon passes off, 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 always easy to predict how complex or how straightforward the procedure will be. It may be over in 30 minutes, although you may be in the Medical Imaging Department for about an hour altogether.

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 need to stay in bed for 6 hours. You may notice some blood in your urine.

Most patients can go home the same day but, rarely, an overnight stay can be needed if there are concerns over a complication, or if your pain is not controlled.

What will happen to the results?

A report of the procedure will be recorded on your electronic patient record immediately for review by your Specialist.

Do not expect to get the result of the biopsy before you leave, as it always takes a few days 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 the same day, or occasionally the next day.

You are advised not to drive for 24 hours and to avoid strenuous exercise for 48 hours.

If you experience any of the following contact the department:

- Your urine becomes more blood stained.
- You have continued bleeding from the wound.
- Your biopsy site becomes red and angry or you develop a fever.
- You develop Increasing pain.

If you experience severe pain / dizziness or fainting you are advised to seek urgent medical assistance.

Are there any risks or complications?

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

The kidney has a rich blood supply and there is a risk of bleeding from the kidney, although this is generally very slight. If the bleeding were to continue, then it is possible that you might need a blood transfusion. Extremely rarely, an operation or another radiological procedure is required to stop the bleeding.

- 1 In 10 patients will have blood in their urine; this will usually settle by itself.
- 1 In 50 patients may require a blood transfusion.
- 1 In 100-150 patients experience continued bleeding requiring a further procedure to block part of the blood supply to the kidney and stop the bleeding, this is called embolisation.
- 1 In 1000 patients may have severe uncontrolled bleeding that would require removal of the kidney.

- Death following biopsy has occurred but is extremely uncommon.
- You may notice some aching in the muscles of your back for the next few days.
- There is a very small risk of introducing infection or damaging the bowel. These are very unusual occurrences.

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 performing your biopsy may be able to give you some idea as to the chance of obtaining a satisfactory sample.

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

Finally....

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.

Contact us

If you found reading your leaflet difficult, you do not understand what it means for you or if you have any queries or concerns you can contact us on: **01392 402336** and we can talk it through or alternatively you can email us rduh.radiologyappointments@nhs.net

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

Please refer to the enclosed "Welcome to the Medical Imaging Department" leaflet and use the Trusts website for the latest information:

www.royaldevon.nhs.uk/our-sites

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

www.royaldevon.nhs.uk/services/radiology-x-ray-and-medical-imaging

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