

Percutaneous Nephrostomy

Introduction

This leaflet tells you about the procedure known as percutaneous nephrostomy, 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 nephrostomy as a planned or an emergency procedure, you should have a sufficient explanation before you sign the consent form.

What is a percutaneous nephrostomy?

The urine from a normal kidney drains through a narrow, muscular tube, the ureter, into the bladder. When that tube becomes blocked (for example, by a stone or a blood clot), the kidney can rapidly become affected, especially if there is infection present as well. While an operation may become necessary, it is also possible to relieve the blockage by inserting a fine plastic tube called a catheter, through the skin, into the kidney, under local anaesthetic. This catheter then allows the urine to drain from the kidney into a collecting bag, outside the body. This procedure is called a percutaneous (meaning through the skin) nephrostomy (a tube put into the kidney).

Why do I need a percutaneous nephrostomy?

Other tests will have shown that the tube leading from your kidney to the bladder has become blocked. However, it may not be obvious what the cause of the blockage is. If left untreated, your kidney will become damaged.

What are the options or alternatives?

Occasionally it is possible to place a tube from the bladder into the kidney. However if this is not feasible then the only other alternative would require an open operation.

Who has made the decision?

The doctors in charge of your case, and the radiologist will have discussed the situation, and feel that this is the best treatment option. 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 nephrostomy?

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 procedure. Consequently, radiologists are the best trained people to insert needles and fine tubes into the body, through the skin, and place them correctly.

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 procedure take place?

Generally in the Medical Imaging Department, in a special 'screening' room, which is adapted for specialised procedures. It may be done in an operating theatre, using mobile x-ray equipment or a portable ultrasound scanner.

How do I prepare for percutaneous nephrostomy?

- You need to be an inpatient in the hospital. You may receive a sedative to relieve anxiety, you may require an antibiotic. You will be asked to put on a hospital gown.
- 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.
- 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 X-ray Special Procedures.**
- 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 contact the Medical Imaging Department on 01392 402336 selecting option 2, in-patient enquiries and then option 6 for X-ray Special Procedures.**
- Other medication should be taken as normal.
- A pregnancy test may be performed on arrival.

What actually happens during a percutaneous nephrostomy?

You will lie on the x-ray table, generally flat on your stomach, or nearly flat. You need to have a needle put into a vein in your arm, so that the radiologist can give you a sedative or painkillers. Once in place, this needle does not cause any pain. You will also have a monitoring device attached to your chest and finger, and may receive oxygen through small tubes in your nose.

The radiologist will keep everything as sterile as possible, and may wear a theatre gown and operating gloves. Your skin will be cleaned with antiseptic, and then the rest of your body covered with a theatre towel.

The radiologist will use the x-ray equipment or the ultrasound machine to decide on the most suitable point for inserting the fine plastic tube (catheter), usually in your back, just below your twelfth rib. Then your skin will be anaesthetised with local anaesthetic, and a fine needle inserted into the kidney.

When the radiologist is sure that the needle is in a satisfactory position, a guide wire will be placed into the kidney, through the needle, which then enables the plastic catheter to be positioned correctly. This catheter will then be fixed to the skin surface, and attached to a drainage bag.

Will it hurt?

Unfortunately, it may hurt a little, for a very short period of time, but any pain you have should be controlled with painkillers.

When the local anaesthetic is injected, it will sting to start with, but this soon wears off, and the skin and deeper tissues should then feel numb. Later, you may be aware of the needle and then the catheter passing into the kidney, and sometimes this is painful, especially if the kidney was sore to start with. 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. Generally, placing the catheter in the kidney only takes a short time, and once in place it should not hurt at all.

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 20 minutes, or very occasionally it may take longer than 90 minutes. As a guide, expect to 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 generally stay in bed for a few hours, until you have recovered.

The drainage catheter stays in place in your body for the time being, and will be attached to a collection bag. You will be able to carry on a normal life with the catheter in place. However, it is important that you try not to make any sudden movements (for example, getting up out of a chair), without remembering about the bag, and making sure that it can move freely with you. The bag needs to be emptied fairly frequently, so that it does not become too heavy, but the nurses will want to measure the amount in it each time.

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.

How long will the catheter stay in, and what happens next?

These are questions which only the doctors looking after you can answer. It may only need to stay in a short time, for example while a stone passes naturally, or it may need to stay in for a much longer period, to allow a more permanent solution for the blockage to be organised. Taking the catheter out is quick and relatively painless.

Are there any risks or complications?

Percutaneous nephrostomy is a very safe procedure, but there are some risks and complications that can arise, as with any medical treatment.

Perhaps the biggest problem is being unable to place the drainage tube satisfactorily in the kidney. If this happens, a surgeon will arrange another method of overcoming the blockage, which may involve surgery.

Sometimes there is a leak of urine from the kidney, resulting in a small collection of fluid inside the abdomen. If this becomes a large collection, it may require draining.

There may be slight bleeding from the kidney. On very rare occasions, this may become severe, and require a surgical operation or another radiological procedure (embolisation) to stop it.

There is a rare complication that can occur where bowel lies between the skin and the kidney and the needle or tube puncture this. If this does occur then an operation to seal the leak is usually required.

Occasionally there may be infection in the kidney, or in the space around it. This can generally be treated satisfactorily with antibiotics. In patients with an infected kidney some of the bacteria can pass into the blood stream this can cause a condition called septic shock. This would require intensive medical treatment and support. Fortunately it is a rare occurrence.

There is a very small risk that your kidney might have to be removed.

Despite these possible complications, the procedure is normally very safe, and will almost certainly result in a great improvement in your medical condition. Occasionally, an operation is required, but if the percutaneous nephrostomy had not been attempted, this operation would have been necessary anyway.

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, if you have any queries or concerns you can contact us on: 01392 402336 and we can talk it through.

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

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

www.rdehospital.nhs.uk/our-sites

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

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

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