

Radiology

Percutaneous ureteric stent

You have been advised by your hospital consultant that you need to have one or two ureteric stents inserted into your kidneys. This information leaflet will inform you about this procedure - a percutaneous ureteric stent insertion. It explains what is involved and what the possible risks are.

This leaflet may not answer all your questions. If you have any queries or concerns, please do not hesitate to ask the ward staff. If you feel unhappy with any part of your care within the X-ray Department, please ask to speak to a senior member of staff.

Please read this leaflet carefully to ensure you are successfully prepared for the examination.

Please contact the X-ray Department if your weight is equal to or more than 205Kg (32 stone) – you may require an alternative examination.

Referral and consent

If you are having the percutaneous ureteric stent insertion as a planned procedure, you should have plenty of time to discuss the situation with your consultant and the radiologist (a specialised X-ray doctor) who will be inserting the percutaneous ureteric stent.

It is possible that you need this procedure done as an emergency, in which case there may be less time for discussion, **but you should have had sufficient explanation before you sign the pink consent form.** If after discussion with your hospital doctor or radiologist you do not want the



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procedure carried out, then you can decide against it.

If the radiologist feels that your condition has changed or that your symptoms do not indicate such a procedure is necessary, they will explain this to you, communicate with the referring clinician, and ask that you return to your referring clinician or ward for review. At all times, the radiologist and referring clinician will be acting in your best interests.

Points to remember

- Please bring any sprays or inhalers that you are taking with you to your appointment.
- Please leave any valuable possessions on the ward.
- If you are diabetic, please note that you are required to have nothing to eat or drink before the examination. Please inform the ward staff so that an alternative medication may be given if necessary.
- If you are taking **aspirin** or **warfarin** please inform the ward staff, as this medication may need to be stopped before your procedure.

What is a percutaneous ureteric stent insertion?

A ureteric stent insertion is a special X-ray procedure done to relieve the symptoms of an obstructed kidney. The examination will be performed under conscious sedation by a radiologist and they will be assisted by a radiographer and a radiology nurse.

Percutaneous means through the skin. A ureteric stent is a thin plastic tube that reaches from the kidney into the bladder. It does not treat the cause of the blockage, but relieves the symptoms.

The urine from a normal kidney drains through a narrow, muscular tube called the ureter into the bladder. When the tube becomes blocked, for example by a stone, the kidney can become damaged if left untreated, especially if there is infection present as well.

It is likely that you have already had a percutaneous nephrostomy (external drainage tube) inserted into your kidney, to temporarily relieve your symptoms. The ureteric stent will enable urine to bypass the obstruction and drain from your kidney into your bladder.

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The percutaneous nephrostomy is left in place at the end of the procedure. However, this is usually for a short time and it is removed once confirmed that the ureteric stent is draining well. This is usually a few days after the ureteric stent insertion.

The stent has to be kept in place until the obstruction is relieved. The time for this can vary, depending on the cause of obstruction and the nature of its treatment. In the majority of patients, a stent is required for only a short duration, from a few weeks to up to 3 months without the need to replace it. When the underlying problem is not a kidney stone, the stent can stay in even longer. There are special stents, which may be left in for a much longer time. Your urologist will tell you how long he expects your stent to remain in place.

It is not always easy to predict how complex or how straightforward the procedure will be and how long it could take. As a guide, expect to be in the Radiology Department for about 45 minutes to 1 hour if one stent is inserted, or up to 1 hours if two stents are inserted into both ureters (bilateral ureteric stent insertion).

Preparation

- Since the procedure will be performed under conscious sedation, **do not eat for the 6 hours** before to your procedure time. You can drink water only during this time. This will help reduce the risk of nausea and vomiting following sedation. You should continue with any other usual medications and take it with a small sip of water.
- You will have had some special blood tests to check your blood clotting ability.
- Vitamin K may be required before the procedure if your blood clotting ability is lower than desired.
- You will need a cannula (small plastic tube) put into a vein in your arm after you have arrived on the ward or while you are in the X-ray Department, so you can be given intravenous medications and fluid if needed.
- To reduce the risk of infection, you will be given intravenous antibiotics by a nurse or doctor on the ward prior to going down to X-ray Department.

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- The procedure will be explained to you by a clinician, and you will be asked to sign a consent form.
- You will need to wear a hospital gown. The porters will collect you from the ward and bring you to the X-ray department on your bed for the procedure.

During your examination

- After you have arrived in X-ray department, the procedure will be explained to you by the radiologist again. You will have the chance to ask any further questions that you may have.
- You will be taken into the X-ray room where you will be asked to get onto the X-ray table. You may be asked to lie either on your side, or if both kidneys are affected on your tummy.
- You will be attached to monitoring equipment - your vital signs (blood pressure, pulse) will be monitored regularly by a radiology nurse during the procedure.
- You will be given conscious sedation and enough painkillers to help you relax and make you feel sleepy throughout. It is routine for you to be given continuous oxygen through a face mask or nasal cannula during sedation.
- If you do not have a percutaneous nephrostomy inserted already, the radiologist will use the ultrasound machine to decide on the best place for inserting the stent and leaving a temporary percutaneous nephrostomy (external drainage tube and bag) in place. This is usually in your back, just below your ribs.
- Your skin will be cleaned with cold antiseptic solution and sterile drapes will be placed over this area. Your skin will be numbed with local anaesthetic. 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.
- A thin needle will then be inserted into the kidney. When the radiologist is sure that the needle is in the correct position, a guide wire will be passed through the needle into the kidney, down the ureter and into the bladder under X-ray control.

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- **If you do** already have a percutaneous nephrostomy inserted, the radiologist will remove the nephrostomy bag and dressing and then cleanse and prepare your skin as described above, and a guide wire will be passed through the nephrostomy tube into your kidney, down your ureter and into your bladder under X-ray control. The old nephrostomy tube will then be removed.
- Once the guide wire has reached your bladder, the ureteric stent will be passed over the guide wire into your kidney, ureter and bladder. A new catheter (nephrostomy tube) will then be placed into your kidney to act as a temporary external drainage system for a few days following the procedure.
- This nephrostomy tube will then be fixed to the skin surface and attached to a drainage bag. A dressing will be placed on your skin over the catheter.

Risks of the procedure

X-rays are a type of radiation. We are all exposed to natural background radiation every day of our lives - this comes from the sun, food we eat, and the ground. Exposure to X-rays carries a small risk, but your doctor feels that this risk is outweighed by the benefits of having the test. We will take all precautions to minimise the amount of X-rays you receive.

As with any procedure or operation, complications are possible. We have included the most common risks and complications in this leaflet. The possibility of these complications occurring will vary for each patient and will be discussed with you before you sign the consent form.

Sedation: Sedation can, on rare occasions, cause problems with breathing. If you wish to, this can be discussed with the radiologist at the time of your consultation or before the procedure.

Bleeding: There will be slight bleeding from the kidney. On rare occasions, this may become severe. Your urine will be blood stained but this should start to clear after 24 hours. If it does not start to clear, a simple X-ray test (nephrostogram) may be required to find out why.

Infection: Occasionally, there may be infection in the kidney. This can usually be treated with antibiotics.

Kidney damage: Very rarely, damage may occur to the kidney.

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Despite these possible complications, the procedure is normally very safe. At all times during and after the procedure, the staff will be monitoring your responses to this treatment to minimize the effects of any complications.

It is possible that you may have an allergic reaction from the contrast agent used. You will be asked about allergies by the radiologist, radiographer or radiology nurse before the procedure.

Safety

The contrast agent contains iodine and is excreted by the kidneys in your urine. Please inform the radiologist or radiographer:

- If you are allergic to iodine, have any other allergies, or suffer from asthma
- If you have reacted previously to the injection used for kidney X-rays and CT scanning
- If you are on renal dialysis

All patients aged 12 – 55 years - could you be pregnant? The risks of radiation are slightly higher for the unborn child, so you will be asked to confirm that you are not pregnant before the examination can proceed.

Living with a ureteric stent:

Your hospital doctor (urologist) should have discussed the longer-term effects of a ureteric stent insertion before you signed the pink consent form. To summarise, you may experience:

- Increased frequency and urgency to pass urine
- A sensation of incomplete emptying of your bladder
- A small amount of blood in the urine – this can improve with a greater fluid intake
- Slight discomfort or pain in the bladder, kidney, groin or genital area/s

After your examination

- You will be taken back to your ward. Nurses will carry out routine observations, such as taking your pulse, blood pressure and temperature, to make sure that there are no problems. You will stay in bed overnight.
- The nephrostomy tube stays in place attached to a drainage bag. It is important that you take care of this. You should try not to make any sudden movements, for example getting up out of a chair without remembering the bag, and you should make sure that it can move freely with you.
- The bag will need to be emptied regularly, so that it does not become too heavy, and the nursing staff will want to measure the amount of urine in it each time.
- If you have any problems after the procedure, please speak to the staff on the ward

Other sources of information

For information about interventional radiology including further information about this procedure you can view the British Society of Interventional Radiology website: www.bsir.org/patients

For information about the effects of X rays and information about radiology departments visit the NHS website:

<https://www.nhs.uk/conditions/x-ray/>

Please note that the views expressed in these websites do not necessarily reflect the views of UHCW NHS Trust.

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