

# Antegrade Ureteric Stenting

## Information For Patients

**This leaflet tells you about the procedure known as antegrade ureteric stenting, 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.**

### What is antegrade ureteric stenting?

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, 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 long plastic tube, called a stent, through the skin, into the kidney and then down the ureter, under local anaesthetic. Because the stent is put in through the kidney, and **down** the ureter, this is called an antegrade procedure (as opposed to placing a stent through the bladder, and **up** the ureter, which is a retrograde procedure). This stent then allows urine to drain in the normal fashion, from the kidney into the bladder.

### Why do I need antegrade ureteric stenting?

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. An operation may be necessary to provide a permanent solution to the blockage, but in the meantime, insertion of a stent will allow the kidney to drain in a normal way. You may already have had a tube placed through your skin and into your kidney to help it drain.

### Who has made the decision?

The doctors in charge of your case, and the radiologist doing the antegrade ureteric stenting 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, if you do not want the procedure carried out, you can decide against it.

### Who will be doing the antegrade ureteric stenting?

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 will be assisted throughout the procedure by a radiology nurse and a radiographer.

## Where will the procedure take place?

Generally, in the x-ray department, in a special "screening" room, this is adapted for specialised procedures,

## How do I prepare for antegrade ureteric stenting?

You need to be an in-patient in the hospital. You will probably be asked not to eat for four hours beforehand, though you may be allowed to drink some water. You may receive a sedative to relieve anxiety, as well as an antibiotic. You will be asked to put on a hospital gown.

If you have any allergies, you **must** let your doctor know. If you have previously reacted to intravenous contrast medium, the dye used for kidney x-rays and CT scanning, then you must also tell your doctor about this.

## What actually happens during antegrade ureteric stenting?

It is quite likely that you have already had a percutaneous nephrostomy performed, (a fine plastic tube put into the kidney through the skin), and in this case the first part of the procedure has already been done, and you should be familiar with the situation.

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 any medication you may require during the procedure - painkillers. Once in place, this needle does not cause any pain. You will also have a monitoring device attached to your finger and will probably 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 most of 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 stent into the kidney, 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, and then passed down the ureter. Once the wire has been placed through the blockage and into the bladder, the long plastic stent can be placed over the guide-wire, and the wire withdrawn. Urine should then be able to pass down the stent and into the bladder. As a temporary measure, it may be necessary to leave a fine plastic drainage tube, called a catheter, in the kidney, to let urine drain externally. 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 stent 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 stent in the ureter 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, if you already have a nephrostomy tube in place, or very occasionally it may take longer than 90 minutes. As a guide, expect to be in the x-ray 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.

If you have an external drainage catheter, then this will stay in place for the time being and will be attached to a collection bag. 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.

## How long will the drainage catheter, and the ureteric stent stay in, and what happens next?

These are questions that only the doctors looking after you can answer. The drainage catheter may only need to stay in a short time. Taking this out will not hurt. You will be able to carry on a normal life with the catheter and the stent in place. The stent may stay in position for a much longer period of time, depending on the nature of the blockage and whether any operation is being considered.

## Are there any risks or complications?

Antegrade ureteric stenting is a very safe procedure, but there are some risks and complications that can arise. Perhaps the biggest problem is being unable to place the stent satisfactorily in the ureter.

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 to stop it. Occasionally there may be infection in the kidney, or in the space around it. This can generally be treated satisfactorily with antibiotics.

Despite these possible complications, the procedure is normally very safe, and will almost certainly result in a great improvement in your medical condition.

## Does this procedure use radiation?

This procedure does use x-rays which involves you receiving a moderate dose of radiation; however, the benefit of an accurate diagnosis or successful treatment far outweighs the risk.

## Finally

Antegrade ureteric stenting is considered a very safe procedure, designed to save you having a larger operation. There are some slight risks and possible complications involved, and although it is difficult to say exactly how often these occur, they are generally minor and do not happen very often.

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This leaflet has been prepared by the British Society of Interventional Radiology (BSIR) with the Clinical Radiology Patients' Liaison Group (CRPLG) of The Royal College of Radiologists and edited accordingly by Calderdale & Huddersfield Trust

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