

# Antegrade ureteric stenting (inserting a tube to open a blocked ureter)

## Introduction

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.

If the antegrade ureteric stenting is being done as a pre-planned procedure, then you should have plenty of time to discuss the situation with the team looking after you and the radiologist who will be doing the procedure, and perhaps even your own GP. If you need the stent as an emergency, then there may be less time for discussion, but nevertheless you should have had sufficient explanation before you sign the consent form.

## What is antegrade ureteric stenting?

The urine from a normal kidney drains through a narrow muscular tube – the ureter – into the bladder. If that tube becomes blocked, for example by a stone, the functioning of the kidney can rapidly deteriorate, 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. This is done under local anaesthetic and sedation. 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 such as blood tests, ultrasound or CT scan will have shown that the tube leading from your kidney to the bladder has become blocked. However, the cause of the blockage may not be obvious. 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, inserting a stent will allow the kidney to drain in a normal way.

## What are the options?

The consultant 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, you do not want the procedure carried out, you can decide against it. Other options such as open surgery are much more invasive. However, if it has

not already been tried, then sometimes stents can be inserted during cystoscopy (a procedure under general anaesthetic where a small telescope is inserted into the bladder).

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

A specially trained doctor called an interventional radiologist will perform the procedure. Interventional radiologists have special expertise in using x-ray and scanning equipment, and also in interpreting the images produced. They will look at these images while carrying out the procedure so they can carefully place the stent in the correct place.

### Where will the procedure take place?

In the Radiology (x-ray) Department.

### How do I prepare for antegrade ureteric stenting?

You need to be an inpatient in the hospital. You will be asked not to eat for 6 hours beforehand, though you are allowed to drink some water and take your usual medication. You may be given antibiotics intravenously (via a drip or cannula). You will be asked to put on a hospital gown and brought to the Radiology Department where you will meet the radiologist and he or she will explain the procedure.

### What happens during antegrade ureteric stenting?

You will lie on the x-ray table, generally flat or nearly flat on your stomach. You have a needle (cannula) put into a vein in your arm, so that you can be given sedatives and/or painkillers. Once in place, this needle does not cause any pain. You will also have monitoring devices attached to your chest, arm and finger, and will receive oxygen through small tubes in your nose.

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

The radiologist will use the ultrasound machine to decide on the most suitable point for inserting the stent into the kidney, usually in your back, just below your lowest rib. Local anaesthetic is injected in this area. Like the anaesthetic used at the dentist, it will sting to start with, but this soon wears off, and the skin and deeper tissues should then feel numb. A fine needle is then guided through the numbed area 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 down the ureter. Once the wire has been placed through the blockage 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.

### What will I feel?

Occasionally, you may be aware of the needle and stent passing into the kidney, and sometimes this is painful, especially if the kidney was sore to start with. The presence of the wire in the bladder can make you feel you want to pass urine or give men some discomfort in the penis. There will be a nurse looking after you. If the procedure does

become painful for you, he or she will be able to arrange for you to have more painkillers through the needle in your arm. This method of administration means they take effect very quickly. Generally, placing the stent in the ureter only takes a short time, and once in place it should not hurt. Sometimes, the lower end of the stent irritates the bladder and gives you the sensation of needing to empty your bladder – this usually wears off quickly.

As a temporary measure, it may be necessary to leave a fine plastic drainage tube, called a nephrostomy catheter, in the kidney to allow urine to drain externally. This catheter will then be fixed to the skin surface, and attached to a drainage bag. You will be advised on how to look after the drainage bag if one is necessary. However, it is often unnecessary to insert this “nephrostomy” tube.

### Will it hurt afterwards?

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

### How long will it take?

Every patient’s situation is different, and it is not always easy to predict how complex 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 rough guide, expect to be in the radiology department for about 2 hours 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, 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) forgetting 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. While you are in hospital, the nurses will want to measure the amount in the bag at regular intervals.

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

These are questions which only the doctors looking after you can answer. If it has been necessary to insert a nephrostomy catheter it 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 stent in place. The stent may stay in position for a longer period of time, depending on the nature of the blockage and whether any operation is being considered. However the stents need to be changed regularly (approximately every three months), usually “from below” via the bladder using a “telescope” otherwise they will become blocked.

### What are the risks?

Like any medical procedure, antegrade ureteric stenting is a very safe procedure but there are some risks and possible complications. Rarely, it is not possible to place the stent satisfactorily. If this happens, other methods of overcoming the blockage will be considered. 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 some bleeding from the kidney. On rare occasions, this may become severe and require 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 usually result in an improvement in your medical condition.

### 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.

### Please call your GP if you experience any of the following:

- Abdominal pain that is not being controlled with paracetamol, ibuprofen or other painkillers which you may have been given.
- Blood stained or dark smelly urine.

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Dr Matthew Gibson, July 2019.

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