



Antegrade Ureteric Stent

This information sheet explains the procedure to insert an antegrade ureteric stent. It describes what the procedure involves, the risks, and what to expect when you come to the Interventional Radiology department for treatment.

Please note that this leaflet is not meant to replace discussion between you and your doctor. You should raise any questions you may have with the doctor who has referred you for, or is performing, the procedure.

What is an antegrade ureteric stent?

An antegrade ureteric stent is a tube that is inserted to drain urine from the kidney into the bladder. The tube is inserted through the skin of the back, on the same side as the affected kidney, just under the ribs. Once inserted, the whole tube sits inside of the body. 'Antegrade' means that the stent is inserted from the top of the urinary system (the kidney) downwards, in the same direction urine would normally flow.

Why do I need an antegrade ureteric stent?

A ureteric stent is inserted when there is a blockage of urine draining from the kidney into the bladder. Urine is normally drained from the kidneys via tubes called ureters. When the ureter is blocked (e.g. by a kidney stone) the urine becomes backed up in the kidney, causing it to swell and become damaged. This is also a risk for infection.

Insertion of a ureteric stent bypasses the blockage in the ureter, allowing the urine to drain freely, reducing the pressure. Depending on the type of blockage, the ureteric stent may be short-term or long-term. You may have previously undergone a similar procedure called a nephrostomy. A ureteric stent is a more suitable long-term alternative where the tube is all on the inside of the body.

How do I prepare for an antegrade ureteric stent insertion?

Ureteric stent insertion can be performed as a day-case procedure. This means that you may not need to stay in hospital overnight. The procedure is typically performed under local anaesthetic. This means that you are awake but made numb around the area of insertion. You may also receive a sedating medication to help alleviate anxiety.

There may be blood tests required beforehand to check that your blood is clotting normally. You may also be asked not to eat for up to 6 hours before the procedure, you may still be able to drink clear fluids. Make sure to fully understand any specific instructions you are given for your procedure. If you have any questions beforehand, please ask your doctor.

How is an antegrade ureteric stent insertion performed?

You will be asked to change your clothes into a hospital gown and have a cannula (small plastic tube) inserted into a vein in your arm. This is necessary as painkillers or sedatives can be given through the cannula into your bloodstream during the procedure. You will be monitored by the nursing team before, during and after your procedure. They will record your observations, such as your blood pressure and your temperature.

To have the ureteric stent inserted, you will be asked to lay down on the operating table on your front, so that your back is accessible. The operating table is specially fitted with an X-ray machine that moves above and around the table but will not touch you.

There will be multiple people in the room whilst the ureteric stent is inserted. This will include the doctor inserting the stent, nurses, and a radiographer to operate the X-ray machine. There may also be additional staff to assist in the procedure. All of the staff in the room will be wearing lead aprons for purposes of X-ray safety.

The ureteric stent will be inserted under sterile conditions. This means that the staff doing the procedure will be wearing sterile gowns and gloves. In order to keep the area as clean as possible the skin will be washed with antiseptic and sterile drapes applied to keep the area isolated.



The skin in the area of the ureteric stent insertion will be injected with local anaesthetic to numb it. This can initially sting before the numbing begins. An ultrasound machine will be used to look at the kidney and allow a needle to be passed through the skin into the kidney. You may already have a nephrostomy in place, if so then this stage has already been completed and the ureteric stent insertion will use the same access site.

A guidewire will be passed through the needle into the kidney and down the ureter, past the blockage. The X-ray machine will be used to follow the wire and make sure it is in the right place before the ureteric stent is finally inserted. Contrast is a type of dye that can be seen by the X-ray machine, which is injected to make sure the stent is inserted in the right place. Once the ureteric stent is in place, it might be necessary to place an additional temporary tube (nephrostomy) on the outside of the body to help with draining urine into an external bag. Arrangements will be made to remove this later assuming the stent is working well.

Who performs the procedure and where?

The ureteric stent will be inserted by a doctor called an Interventional Radiologist. This is a type of doctor that specialises in image-guided minimally invasive procedures. The procedure will usually take place in the Interventional Radiology (IR) department of the hospital in specialised operating theatres with X-ray equipment, also known as IR suites or labs.

What are the potential risks/complications of an antegrade ureteric stent insertion?

An antegrade ureteric stent is a very common and safe procedure. However, all procedures come with potential risks and complications. If you have been recommended to have a ureteric stent inserted, this means that your Consultant and the Interventional Radiologist have discussed the risks and benefits of this procedure and feel that this would be the best option for you. However, you need to consider these risks and benefits yourself and discuss these with your doctor to reach a collaborative decision.

- **Pain:** The insertion of the ureteric stent may be painful for a short time. Any pain should be controlled by painkillers during and after the procedure.
- **Bleeding:** There is a risk of bleeding from the kidney or bladder and it is common for your urine to be bloodstained. It is less common that the bleeding may worsen and require a blood transfusion or more rarely, a further operation or procedure to stop the bleeding.
- **Procedural Failure:** It is possible that the Interventional Radiologist will be unable to insert the ureteric stent adequately past the blockage or that the stent is successfully inserted but does not drain adequately. These may require further stent procedures or an alternative procedure such as a nephrostomy or surgery.
- **Stent Blockage:** The ureteric stent may become blocked and require a procedure to either unblock or replace the tube.
- **Migration/Fracture:** The stent may also move out of place or fracture over time. These issues may also require further procedures to retrieve and replace the stent.
- **Infection:** This can result in feeling generally unwell and require treatment with antibiotics.
- **Leakage of Urine:** It is possible for urine to leak out of the kidney and into the surrounding spaces. If this occurs it may require a procedure to be drained.
- **Bladder Irritation:** The position of the ureteric stent in the bladder can cause irritation and change the regularity and amount of urine you pass. Occasionally, bladder irritation can be severe and the stent have to be removed.
- **Adverse Reaction to Contrast:** The dye used during the procedure can potentially cause side effects, including allergic reactions. If these side effects occur they will be identified and treated promptly.
- **Ionising Radiation:** The procedure uses X-ray radiation to look at the structures within the body. Patients are exposed to the lowest dose of radiation practicable and the risk of causing harm is very small.



What happens afterwards?

After the procedure you will be monitored to ensure that you are recovering as expected and to control any pain. Afterwards you may be able to return home, or to the ward depending on your situation.

An antegrade ureteric stent should be monitored and replaced appropriately every 6 months to ensure it is working properly. This is usually done by the Urology team.

Notes