
Rigid and flexible ureteroscopy and stone fragmentation

What does the procedure involve?

Removal/fragmentation of stone(s) in the ureter or kidney using a rigid or flexible telescope. It may be combined with placement of a soft plastic tube or stent between the kidney and the bladder. This procedure also includes cystoscopy and x-ray screening.

What are the alternatives to this procedure?

Shock wave therapy (ESWL), observation to allow spontaneous passage, or very rarely percutaneous surgery (PCNL).

What should I expect before the procedure?

You will usually be admitted on the same day as your surgery. You will normally receive an appointment for pre-assessment before your admission, to assess your general fitness, to screen for the carriage of MRSA and to perform some baseline investigations. After admission, you will be seen by your consultant, anaesthetist and your nurse. An X-ray may be taken in advance of surgery to confirm the position of your stone(s). If you are female, you will need to confirm that you are not pregnant. You will be asked not to eat or drink for 6 hours before surgery. Please be sure to inform your Urologist in advance of your surgery if you have any of the following:

- any allergies
- an artificial heart valve
- a coronary artery stent
- a heart pacemaker or defibrillator
- an artificial joint
- an artificial blood vessel graft
- a neurosurgical shunt
- any other implanted foreign body
- a prescription for Warfarin, Aspirin or Clopidogrel (Plavix®)
- a previous or current MRSA infection

What happens during the procedure?

Normally, a full general anaesthetic will be used and you will be asleep throughout the procedure. A telescope is inserted into the bladder through the water pipe (urethra). Under X-ray screening, a flexible guidewire is inserted into the affected ureter up to the kidney. A longer telescope (either rigid or flexible) is then inserted into the ureter and passed up to the kidney. The stone is disintegrated using a laser (see below) and the fragments extracted with special retrieval devices. A ureteric stent may be left in place after the procedure. This is usually removed 2-4 weeks after the operation.

What happens immediately after the procedure?

You will be given fluids to drink from an early stage after the operation and you will be encouraged to mobilise as soon as you are comfortable. Once you have passed urine, you will be able to go home, and for the majority of patients this is on the day of their operation.

What should I expect when I get home?

You may experience pain in the kidney over the first 24-72 hours, due to the swelling caused by insertion of the instrument or by the presence of a stent. Anti-inflammatory painkillers will help this pain which normally settles after 72 hours. It will also sting when you pass urine. It will take at least 10 days to recover fully from the operation. You should not expect to return to work within 7 days. You may find that the ureteric stent, the lower end of which sits in the bladder, causes some pain when you pass urine and you may also see blood in the urine as a result of the stent. The stent can also cause you to pass urine more frequently than you would do normally. These symptoms will settle down once the stent has been removed.

What else should I look out for?

If you develop a fever, severe pain on passing urine, inability to pass urine or worsening bleeding, you should contact your doctor. Small blood clots or stone fragments may also pass down the ureter from the kidney, resulting in renal colic; in this event, you should contact your doctor immediately.

Are there any other important points?

If a stent has been inserted, you will be informed before your discharge when the stent needs to be removed. Ureteric stents are usually removed under local anaesthetic using a flexible telescope. You can prevent further stone recurrence by implementing changes to your diet and fluid intake. If you have not already received a written leaflet about this, ask your consultant for one.

What are the potential complications that can occur?

The complications or side effects which can arise include:

Common (greater than 1 in 10)

- Mild burning or bleeding on passing urine for short period after operation
- Temporary insertion of a bladder catheter
- Insertion of a stent with a further procedure to remove it
- The stent may cause pain, frequency and bleeding in the urine
- Recurrence of stones

Occasional (between 1 in 10 and 1 in 50)

- Inability to retrieve the stone or movement of the stone back into kidney where it is not retrievable
- Kidney damage or infection needing further treatment
- Failure to pass the telescope if the ureter is narrow

Rare (less than 1 in 50)

- Damage to the ureter with need for open operation or tube placed into kidney directly from back to allow any leak to heal
- Very rarely, scarring or stricture of the ureter requiring further procedures