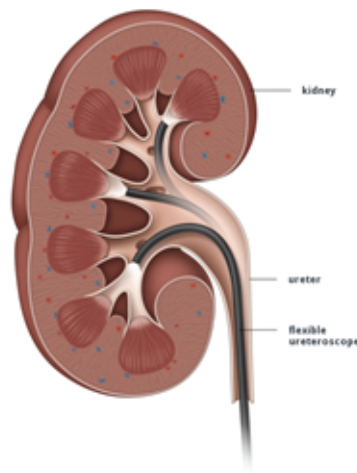




RIRS (RETROGRADE INTRARENAL SURGERY)

What does the procedure involve?

Telescopic removal or fragmentation of stone(s) in the ureter or kidney. It may involve placement of a soft plastic tube or stent between the kidney and the bladder. The procedure also includes cystoscopy and X-ray screening



What are the alternatives to this procedure?

Alternatives to this procedure include open surgery, shock wave therapy and observation to allow spontaneous passage.

What should I expect before the procedure?

You will usually be admitted to hospital on the same day as your surgery. You will normally receive an appointment for a "pre-assessment" to assess your general fitness, and to do some baseline investigations. Once you have been admitted, you will be seen by members of the medical team which may include the consultant, specialist registrar, house officer and your named nurse. You will be asked not to eat and drink for six hours before surgery. Immediately before the operation, the anaesthetist may give you a pre-medication which will make you dry mouthed and pleasantly sleepy.

Please tell your surgeon (before your surgery) if you have any of the following:

- 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 regular prescription for a blood thinning agent such as warfarin, aspirin, clopidogrel (Plavix®), rivaroxaban, prasugrel or dabigatran



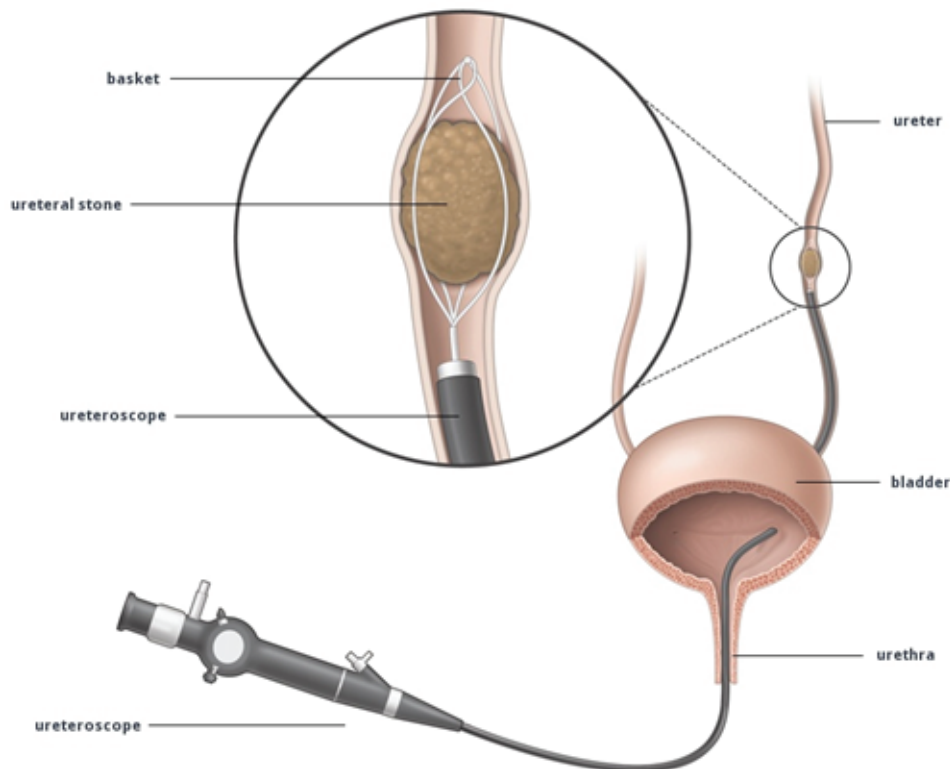
- A previous or current MRSA infection
- A high risk of variant-CJD (if you have had a corneal transplant, a neurosurgical dural transplant or injections of human-derived growth hormone).

When you are admitted to hospital, you will be asked to sign the second part of your operation consent form giving permission for your operation to take place, showing you understand what is to be done and confirming that you want to go ahead. Make sure that you are given the opportunity to discuss any concerns and to ask any questions you may still have before signing the form.

What happens during the procedure?

A full general anaesthetic is normally used and you will be asleep throughout the procedure. The anaesthetist may also use an epidural or spinal anaesthetic to reduce the level of pain afterwards. You will usually be given injectable antibiotics before the procedure, after checking for any allergies. The surgeon will insert a telescope into the bladder through the water pipe (urethra). Under X-ray guidance, a flexible guidewire will be inserted into the tube that runs to the kidney (ureter), on the affected side. A longer telescope (flexible, top of picture) will then be inserted over the wire and passed up to the kidney to locate the stone(s). The stone(s) will be disintegrated using a mechanical probe or laser, and the fragments extracted with special retrieval devices.

A ureteric stent is sometimes left in place, together with a bladder catheter, after the procedure.





What happens immediately after the procedure?

You should be told how the procedure went and you should:

- Ask the surgeon if it went as planned;
- Let the medical staff know if you are in any discomfort;
- Ask what you can and cannot do;
- Feel free to ask any questions or discuss any concerns with the ward staff and members of the surgical team; and
- Make sure that you are clear about what has been done and what happens next.

If a bladder catheter has been inserted, this will normally be removed on the day after surgery. You will be able to go home once you are passing urine normally.

The average hospital stay is one day.

Are there any side-effects?

Most procedures have possible side-effects. But, although the complications listed below are well-recognised, most patients do not suffer any problems.

Common (greater than 1 in 10)

- Mild burning or bleeding on passing urine for short period after operation.
- Insertion of a stent with a further procedure needed to remove it.
- Stent symptoms – stents may cause pain, frequent urine passage and bleeding in the urine.
- Recurrence of stones in the future.

Occasional (between 1 in 10 and 1 in 50)

- Failure - it may not be possible to retrieve the stone due to a narrow ureter, or stone displacement into an inaccessible site in the kidney.
- Kidney damage or infection needing further treatment.

Rare (less than 1 in 50)

- Damage to the ureter, with need for an open operation or tube placed into kidney directly from back (nephrostomy) to allow any leak to heal.
- Scarring or stricture of the ureter needing further procedures to widen it.

Hospital-acquired infection

Please note: The rates for hospital-acquired infection may be greater in “high-risk” patients. This group includes, for example, patients with long-term drainage tubes, patients who have had a long stay in hospital or patients who have been admitted to hospital many times.

What should I expect when I get home?

When you are discharged from hospital, you should:

- be given advice about your recovery at home;



- Ask when you can begin normal activities again, such as work, exercise, driving, housework and sex;
- Ask for a contact number if you have any concerns once you return home;
- Ask when your follow-up will be and who will do this (the hospital or your GP); and
- Be sure that you know when you get the results of any tests done on tissues or organs that have been removed.

When you leave hospital, you will be given a "draft" discharge summary. This contains important information about your stay in hospital and your operation. If you need to call your GP or if you need to go to another hospital, please take this summary with you so the staff can see the details of your treatment. This is important if you need to consult another doctor within a few days of being discharged.

When you get home, you should drink twice as much fluid as you would normally to flush your system through and minimise any bleeding.

You may experience pain in the kidney over the first 24 to 72 hours; this is due to swelling caused by the instrument or by the presence of a stent. Anti-inflammatory painkillers will help this pain which normally settles after 72 hours. It will take at least 10 days to recover fully from the operation and you should not expect to return to work within seven days.

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 GP immediately. 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 GP immediately.

Are there any other important points?

If a stent has been inserted, we will let you know, before you go home, when the stent needs to be removed.

You can prevent further stones by changes to your diet and fluid intake. If you have not already received a written leaflet about this, contact the specialist nurse in outpatients or your urologist.

Driving after surgery

It is your responsibility to make sure you are fit to drive following your surgery.