



PERCUTANEOUS (KEYHOLE) REMOVAL OF KIDNEY STONE(S)

Procedure Specific Information

What is the evidence base for this information?

This publication includes advice from consensus panels, the British Association of Urological Surgeons, the Department of Health and evidence-based sources. It is, therefore, a reflection of best urological practice in the UK. It is intended to supplement any advice you may already have been given by your GP or other healthcare professionals. Alternative treatments are outlined below and can be discussed in more detail with your Urologist or Specialist Nurse.



What does the procedure involve?

Disintegration & extraction of kidney stones with a telescope placed into the kidney through a small puncture in the back. This usually includes cystoscopy and x-ray screening

What are the alternatives to this procedure?

External shock wave treatment, open surgical removal of stones, observation

What should I expect before the procedure?

If you are taking Aspirin or Clopidogrel on a regular basis, you must discuss this with your urologist because these drugs can cause increased bleeding after surgery. There may be a balance of risk where stopping them will reduce the chances of bleeding but this can result in increased clotting, which may also carry a risk to your health. This will, therefore, need careful discussion with regard to risks and benefits.

You will usually be admitted on the same day as your surgery. You will normally receive an appointment for pre-assessment 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 members of the medical team which may include the Consultant, Specialist Registrar, House Officer and your named nurse. An X-ray or limited CT scan may be performed just before your surgery to confirm the position of your stone(s).

You will be asked not to eat or drink for 6 hours before surgery and, immediately before the operation, you may be given a pre-medication by the anaesthetist which will make you dry-mouthed and pleasantly sleepy.



If you are admitted on the day before surgery, you will normally be given antibiotics into a vein to prevent any infection at the time surgery.

Please be sure to inform your surgeon in advance of 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 Warfarin, Aspirin or Clopidogrel (Plavix®)
- a previous or current MRSA infection
- a high risk of variant-CJD (if you have received a corneal transplant, a neurosurgical dural transplant or previous injections of human-derived growth hormone)

At some stage during the admission process, you will be asked to sign the second part of the consent form giving permission for your operation to take place, showing you understand what is to be done and confirming that you wish to proceed. 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.

Fact File 1 • The NHS Constitution Same-Sex Accommodation

As a result of the new NHS constitution, the NHS is committed to providing same-sex accommodation in hospitals by April 2010. This is because feedback from patients has shown that being in mixed-sex accommodation can compromise their privacy. The NHS pledges that:

- sleeping and washing areas for men and women will be provided
- the facilities will be easy to get to and not too far from patients' beds

To help accomplish this, the Department of Health has announced specific measures designed to "all but eliminate mixed-sex accommodation" by 2010. These include:

- more money for improvements in hospital accommodation
- providing help and information to hospital staff, patients and the public
- sending improvement teams to hospitals that need extra support
- introducing measures so that the Department can see how hospitals are progressing

What happens during the procedure?

Normally, a full general anaesthetic will be used and you will be asleep throughout the procedure.

You will usually be given injectable antibiotics before the procedure, after checking for any allergies.



The operation is usually carried out in a single stage. First, a small tube is inserted up the ureter into the kidney by means of a telescope passed into the bladder. You are then turned on to your face and a puncture track into the kidney is established, using X-ray guidance. Finally, a telescope is passed into the kidney and the stone(s) extracted or disintegrated. A catheter is usually left in the bladder at the end of the procedure together with a drainage tube in the kidney.

It may be necessary to puncture the kidney at more than one site if you have many stones scattered throughout the kidney.

What happens immediately after the procedure?

In general terms, you should expect to be told how the procedure went and you should:

- ask if what was planned to be done was achieved
- 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
- ensure that you are clear about what has been done and what is the next move

On the day after surgery, a further X-ray is normally performed to assess stone clearance. Occasionally, it may be necessary to perform an X-ray down the kidney drainage tube using contrast medium. If the X-ray is satisfactory, the tube in your kidney and the bladder catheter will be removed. There is often some leakage from the kidney tube site for 24-48 hours and you will be only discharged once this leakage has resolved.

The average hospital stay may vary considerably but is usually between 2 and 5 days.

Are there any side-effects?

Most procedures have a potential for side-effects. You should be reassured that, although all these complications are well-recognised, the majority of patients do not suffer any problems after a urological procedure.

Common (greater than 1 in 10)

- Temporary insertion of a bladder catheter and ureteric stent/ kidney tube needing later removal



- Transient blood in the urine
- Transient raised temperature

Occasional (between 1 in 10 and 1 in 50)

- Occasionally more than one puncture site is required
- No guarantee of removal of all stones & need for further operations
- Recurrence of new stones
- Failure to establish access to the kidney resulting in the need for further surgery

Rare (less than 1 in 50)

- Severe kidney bleeding requiring transfusion, embolisation or at last resort surgical removal of kidney.
- Damage to lung, bowel, spleen, liver requiring surgical intervention.
- Kidney damage or infection needing further treatment
- Over-absorption of irrigating fluids into blood system causing strain on heart function

Hospital-acquired infection

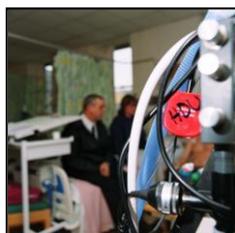
- Colonisation with MRSA (0.9% - 1 in 110)
- Clostridium difficile bowel infection (0.2% - 1 in 500)
- MRSA bloodstream infection (0.08% - 1 in 1250)

The rates for hospital-acquired infection may be greater in high-risk patients e.g. with long-term drainage tubes, after removal of the bladder for cancer, after previous infections, after prolonged hospitalisation or after multiple admissions.

What should I expect when I get home?

By the time of your discharge from hospital, you should:

- be given advice about your recovery at home
- ask when to resume normal activities such as work, exercise, driving, housework and sexual intimacy
- 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)
- ensure that you know when you will be told the results of any tests done on tissues or organs which have been removed



When you leave hospital, you will be given a “draft” discharge summary of your admission. This holds important information about your inpatient stay and your operation. If you need to call your GP for any reason or to attend another hospital, please take this summary with you to allow the doctors to see details of your treatment. This is particularly important if you need to consult another doctor within a few days of your discharge.

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 should aim to keep your urine permanently colourless to minimise the risk of further stone formation.

It may take at least 2 weeks to recover fully from the operation. You should not expect to return to work within 10 days, especially if your job is physically strenuous.

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 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?

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, contact your named nurse, the Specialist Nurse in outpatients or your Consultant.

Driving after surgery

It is your responsibility to ensure that you are fit to drive following your surgery. You do not normally need to notify the DVLA unless you have a medical condition that will last for longer than 3 months after your surgery and may affect your ability to drive. You should, however, check with your insurance company before returning to driving. Your doctors will be happy to provide you with advice on request.

Is there any research being carried out in this area?



Before your operation, your surgeon or Specialist Nurse will inform you about any relevant research studies taking place, and, in particular, if any surgically-removed tissue may be stored for future study. If this is the case, you will be asked if you wish to participate and, if you agree, to sign a special form to consent to this.

All surgical procedures, even those not currently the subject of active research, are subjected to rigorous clinical audit so that we can analyse our results and compare them with those of other surgeons. In this way, we can learn how to improve our techniques and our results; this means that our patients will get the best treatment available.

Who can I contact for more help or information?

For further information on the internet, here are some useful sites to explore:

[Best Health](#) (prepared by the British Medical Association)

[NHS Clinical Knowledge Summaries](#) (formerly known as Prodigy)



[NHS Direct](#)

[Patient UK](#)

[Royal College of Anaesthetists](#) (for information about anaesthetics)

[Royal College of Surgeons](#) (patient information section)

What should I do with this information?

Thank you for taking the trouble to read this publication. If you wish to sign it and retain a copy for your own records, please do so below.

If you would like a copy of this publication to be filed in your hospital records for future reference, please let your Urologist or Specialist Nurse know. However, if you do agree to proceed with the scheduled procedure, you will be asked to sign a separate consent form which will be filed in your hospital record. You will, if you wish, be provided with a copy of this consent form.

I have read this publication and I accept the information it provides.

Signature..... Date.....



How can I get information in alternative formats?

Please ask your local NHS Trust or PALS network if you require this information in other languages, large print, Braille or audio format.



Most hospitals are smoke-free. Smoking increases the severity of some urological conditions and increases the risk of post-operative complications. For advice on quitting, contact your GP or the **NHS Smoking Helpline** free on **0800 169 0 169**

Disclaimer

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Fact File 2 • The NHS Constitution Patients' Rights & Responsibilities

The constitution, as a result of extensive discussions with staff and the public, sets out new rights for patients which will help improve their experience within the NHS. These new rights include:

- a right to choice and a right to information that will help them make that choice
- a right to drugs and treatments approved by NICE when it is considered clinically appropriate
- a right to certain services such as an NHS dentist and access to recommended vaccinations
- the right that any official complaint will be properly and efficiently investigated, and that they be told the outcome of the investigations
- the right to compensation and an apology if they have been harmed by poor treatment

The constitution also lists patient responsibilities, including:

- providing accurate information about their health
- taking positive action to keep themselves and their family healthy
- trying to keep appointments
- treating NHS staff and other patients with respect
- following the course of treatment that they are given
- giving feedback, both positive and negative, after treatment