Urology Department

Percutaneous removal of kidney stone(s)

What is the evidence base for this information?
This leaflet 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 practice in the UK. It is intended to supplement any advice you may already have been given by your urologist or nurse specialist as well as the surgical team at Addenbrooke’s. Alternative treatments are outlined below and can be discussed in more detail with your urologist or specialist nurse.

What does the procedure involve?
Disintegration and 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 blood thinning medication 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 undergo pre assessment on the day of your clinic or an appointment for pre assessment will be made from clinic, 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, junior urology doctors and your named nurse. An x-ray may be taken in advance of surgery to confirm the position of your stone(s).
You will be asked not to eat or drink for six 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 of surgery.

Please be sure to inform your urologist 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 prescription for Warfarin, Aspirin, Rivaroxaban, Dabigatran, Apixaban, Edoxaban or Clopidogrel, Ticagrelor or blood thinning medication
- a previous or current MRSA infection
- high risk of variant CJD (if you have received a corneal transplant, a neurosurgical dural transplant or previous injections of human derived growth hormone)

**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?**

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 to 48 hours and you will be only discharged once this leakage has resolved.

The average hospital stay is four to five 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 an urological procedure.

Please use the check boxes to tick off individual items when you are happy that they have been discussed to your satisfaction:

**Common (greater than one 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 one in 10 and one in 50)**
- □ Occasionally more than one puncture site is required
- □ No guarantee of removal of all stones and 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 one 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

What should I expect when I get home?

When you leave hospital, you will be given a discharge summary of your admission. This holds important information about your inpatient stay and your operation. If, in the first few weeks after your discharge, 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 two 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 three 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.

Privacy & dignity
Same sex bays and bathrooms are offered in all wards except critical care and theatre recovery areas where the use of high tech equipment and/or specialist one to one care is required.

Hair removal before an operation
For most operations, you do not need to have the hair around the site of the operation removed. However, sometimes the healthcare team need to see or reach your skin and if this is necessary they will use an electric hair clipper with a single-use disposable head, on the day of the surgery. Please do not shave the hair yourself or use a razor to remove hair, as this can increase the risk of infection. Your healthcare team will be happy to discuss this with you.

References
NICE clinical guideline No 74: Surgical site infection (October 2008); Department of Health: High Impact Intervention No 4: Care bundle to preventing surgical site infection (August 2007)

Is there any research being carried out in this field at Addenbrooke’s Hospital?
There is no specific research in this area at the moment but all operative procedures performed in the department are subject to rigorous audit at a monthly audit and clinical governance meeting.

Who can I contact for more help or information?
Oncology nurses
Uro-oncology nurse specialist
01223 586748

Bladder cancer nurse practitioner (haematuria, chemotherapy and BCG)
01223 274608
Prostate cancer nurse practitioner  
01223 274608 or 216897 or bleep 154-548  

Surgical care practitioner  
01223 348590 or 256157 or bleep 154-351  

Non-oncology nurses  
Urology nurse practitioner (incontinence, urodynamics, catheter patients)  
01223 274608 or 586748 or bleep 157-237  

Urology nurse practitioner (stoma care)  
01223 349800  

Urology nurse practitioner (stone disease)  
01223 349800 or bleep 152-879  

Patient advice and liaison service (PALS)  
Telephone: 01223 216756  
PatientLine: *801 (from patient bedside telephones only)  
email: pals@addenbrookes.nhs.uk  
Mail: PALS, Box No 53  
Addenbrooke’s Hospital  
Hills Road, Cambridge, CB2 2QQ  

Chaplaincy and multi faith community  
Telephone: 01223 217769  
email: chaplaincy@addenbrookes.nhs.uk  
Mail: The Chaplaincy, Box No 105  
Addenbrooke’s Hospital  
Hills Road, Cambridge, CB2 2QQ  

MINICOM System ("type" system for the hard of hearing)  
Telephone: 01223 217589  

Access office (travel, parking and security information)  
Telephone: 01223 596060  

What should I do with this leaflet?  
Thank you for taking the trouble to read this patient information leaflet. 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 leaflet to be filed in your hospital records for future reference, please let your urologist or specialist nurse know. If you do, however, decide to proceed with the scheduled procedure, you will be asked to sign a separate consent form which will be filed in your hospital notes and you will, in addition, be provided with a copy of the form if you wish.
I have read this patient information leaflet and I accept the information it provides.

Signature………………………………………………….Date………………………………………

We are a smoke-free site: smoking will not be allowed anywhere on the hospital site. For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Other formats:

If you would like this information in another language or audio, please contact Interpreting services on telephone: 01223 348043, or email: interpreting@addenbrookes.nhs.uk For Large Print information please contact the patient information team: patient.info@addenbrookes.nhs.uk

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Authors
Pharmacist
Department
Contact number
Publish/Review date
File name
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Local Ref number
Mr Nikesh Thiruchelvam (on behalf of the consultant urologists)
Eilis Rahill
Department of Urology, Box No 43
Cambridge University Hospitals NHS Foundation Trust, Hills Road, Cambridge, CB2 0QQ
www.cuh.org.uk / www.camurology.org.uk
01223 256650/ Fax 01223 216069
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