Urology department

Open removal of stone(s) from the kidney

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?
This involves the removal of stone(s) from the collecting system of the kidney with incision(s) into the kidney.

What are the alternatives to this procedure?
Telescopc removal, laparoscopic removal, external shock wave treatment, observation.

What should I expect before the procedure?
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.

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-medicaton by the anaesthetist which will make you dry-mouthed and pleasantly sleepy.

An x-ray to confirm the position of your stone(s) will normally be performed shortly before your operation.

You will be given an injection under the skin of a drug (dalteparin) that, along with the help of elasticated stockings provided by the ward, will help prevent thrombosis (clots) in the veins.

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. In some patients, the anaesthetist may also use an epidural anaesthetic which improves or minimises pain post operatively.
You will usually be given injectable antibiotics before the procedure, after checking for any allergies.

The incision is usually made in your loin, just at the lower edge of your ribs. The kidney is identified and an incision made into the pelvis of the kidney through which some of the stones are removed. Stones within the kidney may need additional incisions into the kidney and this usually requires the artery to the kidney to be clamped for up to 30 minutes to prevent bleeding. Contact x-rays are often taken at the time of surgery to confirm complete removal of the stone(s).
A wound drain is usually inserted at the end of the procedure, together with a bladder catheter to monitor urine output; it may also be necessary to insert a drainage tube into the kidney itself (a nephrostomy) at the time of surgery.

What happens immediately after the procedure?
Absorbable stitches are usually used and do not require removal; if the stitches used are not absorbable, we will arrange for them to be removed either on the ward or by your district nurse after seven to 10 days.
You may have a further x-ray after the procedure to confirm that the stone(s) have been completely removed and to check the position of the nephrostomy tube if this has been inserted. If stones remain in the kidney, we may use an irrigating fluid through the nephrostomy tube in an attempt to dissolve them.
If a nephrostomy tube has been inserted, this will normally be removed after seven to 10 days. An x-ray using contrast medium is often performed through the nephrostomy tube before it is removed.

The average hospital stay is 10 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.

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 wound drain
- Need to stent the ureter with a temporary plastic tube
- Insertion of a nephrostomy tube
- Further procedure to remove the ureteric stent, usually under local anaesthetic
- Bulging of the wound due to damage to the nerves serving the abdominal wall muscles

**Occasional (between one in 10 and one in 50)**
- Possibility of further stones

**Rare (less than one in 50)**
- Severe kidney bleeding requiring transfusion, embolisation or surgical removal of kidney
- Long term drainage of urine from drain site due to slow healing of the opening in the kidney
- Infection, pain or hernia of incision requiring further treatment
- Scarring or stricture of collecting system requiring further surgery
- Damage to lung, bowel, spleen, liver requiring surgical intervention
- No guarantee of removal of all stones and need for further operations
- Need to do further open surgery or radiological procedures to remove stone(s)
- Anaesthetic or cardiovascular problems possibly requiring intensive care admission (including chest infection, pulmonary embolus, stroke, deep vein thrombosis, heart attack and death)

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.

You will feel slightly uncomfortable for at least six weeks after the procedure and you will need at least eight weeks off work after this operation.
Most patients with kidney stones have associated infection of the urine and you will usually be discharged with instructions to continue taking antibiotics for several weeks post operatively.

After surgery through the loin, the wall of the abdomen around the scar will bulge due to nerve damage. This is not a hernia but can be helped by strengthening up the muscles of the abdominal wall by exercises.

**What else should I look out for?**

If you develop a temperature, increased redness, throbbing or drainage at the site of the operation, please contact your GP.

If you develop any unexpected abdominal pain, loin pain or other symptoms, you should contact your GP immediately.

**Are there any other important points?**

A follow up outpatient appointment will normally be arranged six to eight weeks after the operation. A further kidney x-ray or radioisotope measurement of kidney function may be requested at that stage to assess the recovery of the kidney following stone removal.

It is not unusual to experience twinges of discomfort with any incision on your abdomen and these twinges can go on for several months.

If there are any small stones remaining in your kidney, shockwave lithotripsy may be arranged at a later stage.

You can prevent further stone development 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 or 257257
01223 274432 or 274431
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
e-mail: 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 now 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, large print or audio, please ask the department where you are being treated, to contact the patient information team: patient.information@addenbrookes.nhs.uk.
Please note: We do not currently hold many leaflets in other languages; written translation requests are funded and agreed by the department who has authored the leaflet.

Document history
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