LAPAROSCOPIC (KEYHOLE) REMOVAL of the WHOLE KIDNEY & URETER

Information about your procedure from
The British Association of Urological Surgeons (BAUS)

This leaflet contains evidence-based information about your proposed urological procedure. We have consulted specialist surgeons during its preparation, so that it represents best practice in UK urology. You should use it in addition to any advice already given to you.

To view this leaflet online, scan the QR code (right) or type the short URL below it into your web browser.

http://rb.gy/vm1s6

KEY POINTS

- The aim of laparoscopic nephroureterectomy is to remove a tumour-bearing kidney and its ureter, using a telescopic (keyhole) technique, through several small incisions in your abdomen
- Sometimes, an additional incision is needed to remove the lower part of the ureter
- One of the keyhole incisions needs to be enlarged to remove the kidney and ureter
- In some surgical units, the procedure may be performed using robotic assistance
- Recovery can take up to 6 weeks and may take longer
- You will require regular, long-term follow-up with scans and bladder examinations to be sure the tumour has not recurred elsewhere in your urinary tract

What does this procedure involve?

Removal of your kidney, with its surrounding fat, for suspected cancer of the surface lining of the kidney through three to five “keyhole” incisions, using a telescope and operating instruments put into your abdominal (tummy) cavity. One of these incisions may need to be enlarged to remove the kidney ± ureter.

We detach the lower part of your ureter with a “cuff” of bladder wall, using

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a telescope passed into your bladder. Sometimes, we need to make a separate open incision (cut) to remove the lower ureter; this depends on the site and extent of the tumour.

What are the alternatives?

- **Observation alone** – leaving the tumour in your kidney and observing it carefully for any signs of enlargement
- **Open nephroureterectomy** – removing the whole kidney and ureter through one (or more) abdominal or loin incisions
- **Endoscopic control of the tumour** – usually using flexible instruments passed up from your bladder and laser treatment to the tumour
- **Palliative treatment** – using radiotherapy or chemotherapy to control symptoms such as bleeding, if surgery is not appropriate or is deemed too hazardous

What happens on the day of the procedure?

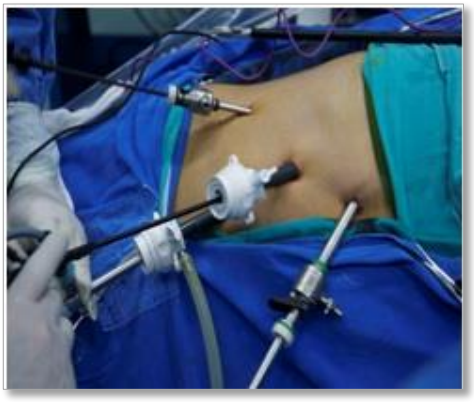
Your urologist (or a member of their team) will briefly review your history and medications, and will discuss the surgery again with you to confirm your consent.

An anaesthetist will see you to discuss the options of a general anaesthetic or spinal anaesthetic. The anaesthetist will also discuss pain relief after the procedure with you.

We may provide you with a pair of TED stockings to wear, and we may give you a heparin injection to thin your blood. These help to prevent blood clots from developing and passing into your lungs. Your medical team will decide whether you need to continue these after you go home.

Details of the procedure

- we normally carry out the procedure under a general anaesthetic
- we usually give you an injection of antibiotics before the procedure, after you have been checked for any allergies
- we distend (inflate) your abdominal (tummy) cavity by injecting carbon dioxide gas using a special needle



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- we create several keyhole incisions (ports) and insert operating instruments through them
- we free your kidney and the upper ureter using these instruments
- we disconnect the remaining lower ureter using either a telescope passed into bladder or a separate incision (cut) in your lower abdomen
- we remove the kidney and ureter from your abdomen by enlarging one of the port incisions
- we close the wounds with absorbable stitches which normally disappear within two to three weeks and we inject local anaesthetic into the wounds for pain relief
- we put a catheter in your bladder to monitor your urine output; this is removed as soon as you are mobile
- we usually put a drain down to the area where the kidney was removed, to prevent fluid accumulation; this is removed when it stops draining
- the procedure takes from three to four hours to complete, depending on complexity
- you can expect to be in hospital for three to five days

Following major abdominal surgery, some urology units have introduced Enhanced Recovery Pathways. These actually start before you are admitted to hospital. After your surgery, they are designed to speed your recovery, shorten your time in hospital and reduce your risk of re-admission.

We will encourage you to get up and about as soon as possible. This reduces the risk of blood clots in your legs and helps your bowel to start working again. You will sit out in a chair shortly after the procedure and be shown deep breathing/leg exercises. We will encourage you to start drinking and eating as soon as possible.

Are there any after-effects?

The possible after-effects and your risk of getting them are shown below. Some are self-limiting or reversible, but others are not.

We have not listed very rare after-effects (occurring in less than 1 in 250 patients) individually.

The impact of these after-effects can vary a lot from patient to patient; you should ask your surgeon's advice about the risks and their impact on you as an individual:

After-effect	Risk
Pain or discomfort at the incision site	 Almost all patients
Shoulder tip pain due to irritation of your diaphragm by the carbon dioxide gas	 Almost all patients
Temporary abdominal bloating (gaseous distension)	 Almost all patients
Risk of tumour recurrence elsewhere in your urinary tract requiring repeated telescopic examinations of your bladder	 Between 1 in 2 & 1 in 10 patients
Bleeding, infection, pain or hernia at the incision site requiring further treatment	 Between 1 in 10 & 1 in 50 patients
Bleeding requiring transfusion or conversion to open surgery	 Between 1 in 10 & 1 in 50 patients
Need for additional treatment for cancer after the procedure	 Between 1 in 10 & 1 in 50 patients
Recognised (or unrecognised) injury to organs/blood vessels requiring conversion to open surgery (or deferred open surgery)	 Between 1 in 50 & 1 in 250 patients
Entry into your lung cavity requiring insertion of a temporary drainage tube	 Between 1 in 50 & 1 in 250 patients
The abnormality in your kidney or ureter may turn out not to be cancer	 Between 1 in 50 & 1 in 250 patients

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Involvement or injury to nearby local structures (blood vessels, spleen, liver, lung, pancreas & bowel) requiring more extensive surgery	 Between 1 in 50 & 1 in 250 patients
Persistent urine leakage from your bladder requiring prolonged catheterisation or further surgery	 Between 1 in 50 & 1 in 250 patients
Anaesthetic or cardiovascular problems possibly requiring intensive care (including chest infection, pulmonary embolus, stroke, deep vein thrombosis, heart attack and death)	 Between 1 in 50 & 1 in 250 patients (your anaesthetist can estimate your individual risk)

What is my risk of a hospital-acquired infection?

Your risk of getting an infection in hospital is between 4 & 6%; this includes getting *MRSA* or a *Clostridium difficile* bowel infection. This figure is higher if you are in a "high-risk" group of patients such as patients who have had:

- long-term drainage tubes (e.g. catheters);
- bladder removal;
- long hospital stays; or
- multiple hospital admissions.

What can I expect when I get home?

- you will get some twinges of discomfort in your incisions which may go on for several weeks; this can used be controlled by simple painkillers such as paracetamol
- any staples or stitches in an incision to remove the lower ureter are usually removed after seven to 10 days
- most people can return to work after four to six weeks but complete recovery may take longer
- you will be given advice about your recovery at home
- you will be given a copy of your discharge summary and a copy will also be sent to your GP
- any antibiotics or other tablets you may need will be arranged & dispensed from the hospital pharmacy
- the pathology results on your kidney will be discussed in a multi-

disciplinary team (MDT) meeting
- you and your GP will be informed of the results at the earliest possible opportunity
- we normally arrange a follow-up appointment for you once the pathology results are available

General information about surgical procedures

Before your procedure

Please tell a member of the medical team if you have:

- an implanted foreign body (stent, joint replacement, pacemaker, heart valve, blood vessel graft);
- a regular prescription for a blood thinning agent (e.g. warfarin, aspirin, clopidogrel, rivaroxaban, dabigatran);
- a present or previous MRSA infection; or
- a high risk of variant-CJD (e.g. if you have had a corneal transplant, a neurosurgical dural transplant or human growth hormone treatment).

Questions you may wish to ask

If you wish to learn more about what will happen, you can find a list of suggested questions called "Having An Operation" on the website of the Royal College of Surgeons of England. You may also wish to ask your surgeon for his/her personal results and experience with this procedure.

Before you go home

We will tell you how the procedure went and you should:

- make sure you understand what has been done;
- ask the surgeon if everything went as planned;
- let the staff know if you have any discomfort;
- ask what you can (and cannot) do at home;
- make sure you know what happens next; and
- ask when you can return to normal activities.

We will give you advice about what to look out for when you get home. Your surgeon or nurse will also give you details of who to contact, and how to contact them, in the event of problems.

Smoking and surgery

Ideally, we would prefer you to stop smoking before any procedure. Smoking can worsen some urological conditions and makes complications

more likely after surgery. For advice on stopping, you can:

- contact your GP;
- access your local NHS Smoking Help Online; or
- ring the Smoke-Free National Helpline on **0300 123 1044**.

Driving after surgery

It is your responsibility to make sure you are fit to drive after any surgical procedure. You only need to contact the DVLA if your ability to drive is likely to be affected for more than three months. If it is, you should check with your insurance company before driving again.

What should I do with this information?

Thank you for taking the trouble to read this information. Please let your urologist (or specialist nurse) know if you would like to have a copy for your own records. If you wish, the medical or nursing staff can also arrange to file a copy in your hospital notes.

What sources have we used to prepare this leaflet?

This leaflet uses information from consensus panels and other evidence-based sources including:

- the Department of Health (England);
- the Cochrane Collaboration; and
- the National Institute for Health and Care Excellence (NICE).

It also follows style guidelines from:

- the Royal National Institute for Blind People (RNIB);
- the Information Standard;
- the Patient Information Forum; and
- the Plain English Campaign.

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PLEASE NOTE: the staff at BAUS are not medically trained, and are unable to answer questions about the information provided in this leaflet. If you have any questions, you should contact your Urologist, Specialist Nurse or GP in the first instance.

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