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# **RADICAL LAPAROSCOPIC (KEYHOLE) NEPHRECTOMY (REMOVAL OF A KIDNEY FOR SUSPECTED CANCER)**

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

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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 the online version of this leaflet, type the text below into your web browser:

[http://www.baus.org.uk/\\_userfiles/pages/files/Patients/Leaflets/Radical nephrectomy lap.pdf](http://www.baus.org.uk/_userfiles/pages/files/Patients/Leaflets/Radical%20nephrectomy%20lap.pdf)

## **Key Points**

- The aim of laparoscopic nephrectomy is to remove a tumour-bearing kidney, using a telescopic (keyhole) technique through several small incisions in your abdomen
- In some patients, the adrenal gland and nearby lymph nodes are also removed
- One of the keyhole incision needs to be enlarged to remove your kidney
- The procedure is normally well-tolerated with an average length of stay of around three days
- Recovery normally takes four to six weeks but it can be longer
- Regular, long-term follow-up with scans is required after removal of a kidney tumour

## **What does this procedure involve?**

Removal of your tumour-bearing kidney through three or four keyhole incisions, using a telescope and operating instruments put into your abdominal (tummy) cavity. One incision will need to be enlarged to remove the kidney.

## **What are the alternatives?**

- **Observation alone** – leaving the tumour in your kidney and observing it carefully for any signs of enlargement

- [Open radical nephrectomy](#) – removing the whole kidney and its surrounding tissues through an abdominal or loin incision
- [Open partial nephrectomy](#) – removing only the part of the kidney containing the tumour, through an abdominal or loin incision
- [Laparoscopic partial nephrectomy](#) – removing only the part of the kidney containing the tumour, using a telescopic (keyhole) technique; laparoscopic partial nephrectomy can also be performed using robotic assistance

## 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 and you will be asleep throughout
- we may 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
- we create several keyhole incisions (ports) and insert operating instruments through them (pictured)
- we free your kidney and its surrounding fat using these instruments, and extract the kidney from your abdomen by enlarging one of the port incisions
- we close the wounds with absorbable stitches or clips which normally disappear within two to three weeks and 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 sometimes 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 one to three hours to complete, depending on complexity
- you can expect to be in hospital for three 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	 Between 1 in 2 & 1 in 10 patients
Temporary abdominal bloating (gaseous distension)	 Between 1 in 2 & 1 in 10 patients

Bleeding, infection, pain or hernia at the incision site requiring further treatment	 1 in 33 patients (3%)
Recognised (or unrecognised) injury to organs/blood vessels requiring conversion to open surgery (or deferred open surgery)	 Between 1 in 10 & 1 in 50 patients
Bleeding requiring transfusion or conversion to 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
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)
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
The abnormality in the kidney may turn out not to be cancer	 Between 1 in 50 & 1 in 250 patients
Dialysis may be required to stabilise your kidney function if your other kidney does not function well	 Between 1 in 50 & 1 in 250 patients

## What is my risk of a hospital-acquired infection?

Your risk of getting an infection in hospital is approximately 8 in 100 (8%); 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 be controlled by simple painkillers such as paracetamol
- you should have recovered completely after 10 to 14 days
- most people can return to work after two to four weeks
- 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 (warfarin, aspirin, clopidogrel, rivaroxaban or 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.

BAUS runs a national audit and collects data from all urologists undertaking this surgery. There are two reasons for this. First, surgeons are required by the Department of Health to look at how well the surgery is being done under their care and, second, to look at national trends for the procedure.

Some basic patient data (e.g. name, NHS number and date of birth) are entered and securely stored. This is required so that members of the clinical team providing your care can go back to the record and add follow-up data such as length of stay or post-operative complications. This helps your surgeon to understand the various outcomes of the procedure.

Although BAUS staff can download the surgical data for analysis, they **cannot** access any patient identifiable data. This information is used to generate reports on individual surgeons and units; these are available for the public to view in the [Surgical Outcomes Audit](#) section of the BAUS website.

### ***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 free NHS Smoking Helpline on **0800 169 0 169**.

### ***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](#).

## **Disclaimer**

We have made every effort to give accurate information but there may still be errors or omissions in this leaflet. BAUS cannot accept responsibility for any loss from action taken (or not taken) as a result of this information.

### **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 do have any questions, you should contact your urologist, specialist nurse or GP.