

Laparoscopic nephrectomy and nephroureterectomy

(Keyhole surgery to remove the kidney)

Introduction

This leaflet contains information for patients having laparoscopic nephrectomy (keyhole surgery to remove the kidney) or nephroureterectomy (surgery to remove the kidney and ureter).

What is nephrectomy?

Nephrectomy is an operation to remove a kidney. There are 3 types of nephrectomy:

1. Simple nephrectomy for benign (non-cancerous) conditions, this involves removal of the kidney only.
2. Radical nephrectomy for treatment of suspected cancer, where the whole kidney and structures around the kidney including the adrenal gland, lymph nodes and fatty tissue are removed.
3. Nephroureterectomy for treatment of suspected cancer of the kidney drainage system, where the kidney and ureter to the level of the bladder are removed.

How is the operation performed?

The operation is performed under a general anaesthetic (while you are asleep). The surgeon will make 3 to 4 small, 1 to 2 centimetre cuts (known as entry ports). The cuts will be made between the ribcage and pelvic bone on the side where the kidney is to be removed. A telescopic camera is passed through one of the ports. This will allow the surgeon to look at the kidney and surrounding organs.

Surgical instruments, used to disconnect the kidney from its blood supply, are passed through the other ports. A slightly larger cut, depending on the kidney or tumour size (of about 4 to 6 centimetres) is then made at the front of the lower abdomen to remove the kidney from the body. This same cut is used to disconnect the ureter from the bladder during a nephroureterectomy.

Reference No.

GHPI1318_06_21

Department

Urology

Review due

June 2024

Patient Information

In some cases, a robot can be used to assist with the procedure. This is known as robot assisted laparoscopic nephrectomy. The surgeon is completely in charge of the robot from a nearby console. Instruments are attached to the robot arms improving the accuracy and efficiency of movement within the body.

Expectations/benefits

In the majority of cases the aim of the operation is to cure your cancer.

In some cases, the operation is performed to reduce the amount of cancer because the cancer may have already spread. This allows other treatments to work better. If this is the case (or is suspected to be the case), this will have already been discussed with you.

If the surgery is being performed for a non-cancerous/benign condition, the aim is to relieve symptoms.

Alternative treatments

Observation

No treatment is given and we will wait to see how your condition progresses.

This option can be suitable for small tumours in patients considered unfit for surgery. It is not recommended for large tumours or in those patients considered suitable for surgery.

Partial nephrectomy

Removing the tumour with a rim of normal kidney, this is only suitable for select, smaller tumours.

Open surgery

Removal of the kidney through a single large incision, recommended for tumours larger than 8 to 10 centimetres.

Radiofrequency ablation/cryotherapy

Using heat or freezing to treat the tumour while leaving the kidney in the body. This is only suitable for certain smaller tumours.

Patient Information

Immunotherapy or tyrosine kinase inhibitor therapy

Medical treatments used to target cancer cells when the tumour has already spread outside the kidney and removal of the kidney is not going to provide a cure.

What is the difference between laparoscopic and open surgery?

The main difference is in how the surgeon gains access to the kidney, either through a single, large open cut (open surgery) or several smaller cuts (laparoscopic surgery). Laparoscopic (keyhole surgery) offers the same level of cancer control as open surgery, but with a shorter hospital stay and recovery time.

Advantages of laparoscopic surgery

Advantages include:

- Reduced blood loss with a reduced chance of needing a blood transfusion.
- Reduced pain after the operation. There is no large abdominal wound to heal.
- A shorter stay in hospital. Most patients normally go home after 2 to 3 nights, compared to 5 to 6 nights after open surgery.
- Smaller scars but the scars will still be visible.
- Quicker return to normal activity, usually 3 to 4 weeks after keyhole surgery as compared with 6 to 8 weeks after open surgery.

There are no clear disadvantages of laparoscopic surgery compared to open surgery.

Risks

A laparoscopic nephrectomy is still major surgery and does carry risks associated with both the anaesthetic and the operation.

Problems related to the anaesthetic

- Chest infection
- Deep Vein Thrombosis (DVT) – blood clot in legs
- Pulmonary Embolus (PE) - blood clot in lungs
- Heart attack or stroke

**Patient
Information****Problems related to the operation**

Common (experienced by 1 in 10 patients)

- Temporary shoulder tip pain
- Temporary abdominal bloating

Occasional (experienced between 1 in 10 and 1 in 50 patients)

- Bleeding - the kidney has a very good blood supply and connects to the main artery (aorta) and vein (vena cava) in the body. Major bleeding is therefore a risk with any kidney operation, and may require a blood transfusion.
- Infection - any cut to the skin carries a risk of infection. Antibiotics are given to help reduce the risk of this at the time of operation. Any redness or swelling of the wound site after the operation may need further treatment.
- Conversion to an open operation – this may be needed if there is significant bleeding, injury to other structures (for example, bowel or blood vessels) or the surgeon is failing to make good progress. The chance of this happening is 5 in every 100 patients.
- Delayed wound problems - this includes pain, numbness (usually temporary) and weakness of the abdominal wall muscles which can cause a wound hernia that may need surgical repair.

Rare (in less than 1 in 50 patients)

- Injury to other structures. Other organs, especially those near to the kidney, are at risk of injury during the removal of the kidney. The structures more likely to be damaged include the bowel, spleen, liver, pancreas, diaphragm and the nerves of the abdominal wall muscles. The risk of injuring the bowel is lower when the surgeon accesses the kidney through the back (retroperitoneal approach), rather than through the abdomen (transperitoneal approach).
- Damage to the lung cavity. This would need the temporary insertion of a chest drainage tube.
- Tumour may be benign or non-cancerous once analysed in the laboratory.

**Patient
Information****Before the operation**

You will receive an appointment to attend the pre-admission clinic where your suitability and fitness for surgery and anaesthetic will be assessed. It is important for you to provide information on your previous and on-going health problems during the consultation. Please bring a list of your current medication. We may arrange for you to have further tests such as a chest X-ray, blood tests and/or an electrocardiogram (ECG) trace of the heart.

You will be asked to sign a consent form for the operation during this consultation. Please feel free to ask any questions. You will also have the chance to talk to your surgeon on the day of the operation.

Medications

You will be given specific advice if you take any medication that thins your blood such as rivaroxaban, apixaban, warfarin, clopidogrel or aspirin. You may need to stop taking these before your operation. Do not make any changes to your regular medications unless asked to by the pre-assessment nurses.

Fasting

You will be given instructions on diet during your pre-admission clinic appointment.

You will not be able to eat anything for 6 hours before your operation. This is so that we can safely give you an anaesthetic. We will give you clear instructions on fasting. It is important that you follow these instructions.

Anaesthetic

An anaesthetist will see you before your operation and assess you for your anaesthetic. This operation requires a general anaesthetic, so you will be asleep throughout the procedure.

**Patient
Information**

After the operation

You will wake up from the anaesthetic in the recovery room. A registered nurse will stay with you until you are fully awake. This can take 1 to 2 hours. You will then be moved back to the ward.

You will have:

- A catheter fitted. This is a hollow tube that drains urine from the bladder.
- Surgical clips or sutures (stitches) will be used to close the cuts and these will be covered with waterproof dressings.
- A drip will be inserted in to a vein in your arm to allow fluids to be given. The fluid will stop you from becoming dehydrated.
- Oxygen mask or nasal prongs – to give you extra oxygen as needed.

Eating, drinking and washing

You will be able to drink fluids when you wake up and can start eating a light diet within a few hours of your operation. You will be able to shower within 24 hours of your surgery.

DVT prevention

You will be given a daily blood thinning injection of enoxaparin or FragminTM. This, along with the stockings, reduces the risk of you developing a DVT (blood clot in the legs). The injections will need to be given for 28 days in total after your operation. You or a family member/friend will be taught how to give the injections before you leave the hospital.

Will I have any pain after the operation?

Yes, but you will be given pain relief into the vein via a drip as necessary plus local anaesthetic into the port sites (cuts) after your operation. Rarely some patients need a PCA (patient controlled analgesia) for the first 24 hours after the operation. Most patients find that they need very little pain relief after the operation. Please let the nurse looking after you know if you are in pain as pain relief can be given as needed.

Patient Information

Early mobilisation is encouraged as this will reduce the risk of blood clots in your legs or lungs. Deep breathing exercises are also encouraged to reduce the risk of a chest infection.

Your catheter will be removed when you are mobile enough to get to the toilet unless your surgeon has specified otherwise.

Leaving hospital

You will be discharged when:

- You have passed urine.
- You can move around comfortably and freely.
- Your pain is well controlled by pain relief taken by mouth.
- You have an adult with you at home for the first 24 hours after discharge.

This is usually on day 2 following your operation. However, some patients are ready to leave the day after their operation.

You will be given a copy of your discharge summary before you leave the hospital. A copy will also be sent to your GP.

What to do when you get home?

It is important to remember that you have had major surgery and that you need to rest. It may take up to 12 weeks to fully recover from your operation. Most people return to normal activities by 4 weeks after the operation.

During this recovery time you should not perform any heavy lifting or strenuous activities (such as shopping, vacuuming, mowing the lawn). This may slow your recovery time and delay wound healing. However, you are encouraged to remain active to reduce the risk of DVT.

What should I look out for?

If you develop a temperature, increasing redness on or around the wound, or pain or leakage from the site of the operation, then you should seek medical advice from your GP or contact the Urology Team on the numbers at the end of this leaflet.

**Patient
Information**

Driving

It is your responsibility to make sure you are fit before driving. We recommend that you avoid driving for 3 weeks after your operation and do not return to driving until you can safely perform an emergency stop. You do not normally need to inform the DVLA unless you have a medical condition that will last for longer than 3 months after surgery and may affect your ability to drive.

Returning to work

We suggest that you take 2 to 4 weeks off work. If your job involves heavy lifting or strenuous activity please talk to your surgeon or GP.

Contact information

If you have any further questions or problems before, during or after your operation, help or advice can be obtained from:

Nurse Practitioners for Urology

Tel: 0300 422 5193

Tel: 0300 422 3640

Tel: 0300 422 2222 and ask for bleep 2120, 2376 or 1675

Calls can be made between 8:00am and 5:00pm

Uro-oncolgy Cancer Nurse Specialist

Tel: 0300 422 6672

Calls can be made between 8:00am and 5:00pm

Your consultant

Tel: 0300 422 2222 and ask for your consultant's secretary.

Calls can be made between 8:00am and 4:00pm

Bibury Ward

Tel: 0300 422 2353

**Patient
Information**

Further information

Macmillan Cancer Support

Website:

www.macmillan.org.uk/Cancerinformation/Cancertypes/Kidney

Cancer Research UK

Website:

www.cancerresearchuk.org/about-cancer/type/kidney-cancer/

Please note, the Trust cannot be held responsible for the content of the literature provided by external bodies.

Content reviewed: June 2021