

Having a robotic-assisted laparoscopic radical nephrectomy

This leaflet explains what a robotic-assisted laparoscopic radical nephrectomy is. It includes information about the benefits and risks of the surgery, whether there are any alternatives, and what you can expect when you come to hospital.

If you have any further questions, please speak to a doctor or nurse caring for you.

What is a radical nephrectomy?

Radical nephrectomy is an operation to remove the whole of your kidney that has disease or a suspected cancer. We remove the whole of your kidney, and/or the surrounding fatty tissue, lymph nodes, the adrenal gland and upper end of your ureter (tube carrying urine from the kidney to the bladder). These are taken out to increase the likelihood of removing all of the suspected cancer cells.

What is laparoscopic surgery?

Laparoscopic surgery is also often called keyhole surgery. A laparoscopic radical nephrectomy is carried out using several small incisions or cuts.

What is robotic-assisted laparoscopic radical nephrectomy?

A robotic-assisted laparoscopic nephrectomy is keyhole surgery to remove a diseased kidney using the da Vinci[®] robotic system, through small keyhole incisions. Keyhole instruments and a camera are used, allowing the surgeon to see inside of your abdomen. These are attached to robotic arms which are controlled by the surgeon.

Guy's and St Thomas' was one of the first NHS trusts to offer robotic-assisted surgery for urological procedures. The da Vinci[®] robot provides high definition imaging and a three-dimensional (3D) view of your abdomen for the surgeon. The da Vinci[®] robotic system is now used widely across the UK, US and Europe and is currently being used for many different areas of surgery. Guy's Hospital has the latest da Vinci[®] robot, the XI Dual console, and is the most experienced robotic centre in the UK.

The da Vinci[®] system allows the surgeon higher levels of precision during the removal of the kidney than standard laparoscopic surgery.

Why should I have a robotic-assisted laparoscopic radical nephrectomy?

A robotic-assisted laparoscopic radical nephrectomy is the most common type of surgery for the treatment of kidney cancer that has not spread beyond the kidney, though it may still be carried out if the cancer has spread to other organs. A kidney may also be removed if it is damaged from repeated infections, causing pain, or if it contains a very large cyst which is causing symptoms such as pain.

Can I live with just one kidney?

Yes. Your remaining kidney will take over the function of your removed kidney to filter your blood and to produce urine.

Are there any alternatives?

Yes. Your surgeon will discuss different methods and options with you. Alternatives include:

- observation – we give you no treatment but wait to see how your condition progresses
- embolisation – the blood supply to the tumour is cut off
- open surgery
- partial nephrectomy or nephron sparing surgery – only the part of the kidney with the suspected tumour is removed. In some instances a partial nephrectomy is not advised, for example, if the area of concern is too close to the central working area of the kidney (the renal pelvis).

What are the advantages of laparoscopic surgery?

- **Less blood loss.** In the keyhole surgery, blood loss is typically 200-500ml (a cup or mug full), whereas in an open nephrectomy it can be more than 1000ml. There is therefore less risk of needing a blood transfusion with laparoscopic surgery.
- **Less pain after the operation.** As there is no large abdominal wound, patients rarely need strong painkillers following laparoscopic surgery and can return to normal activities and work sooner compared to open surgery.
- **A shorter stay in hospital.** Most patients go home one to two nights after laparoscopic surgery, compared to an average of five to seven nights for open surgery.
- **Smaller scars.** The laparoscopic operation avoids the large scar from open surgery, although the smaller scars from the ports will be visible.

What are the disadvantages of laparoscopic surgery?

There are no clear disadvantages compared to open surgery. The potential complications outlined in this leaflet are essentially the same for both procedures. Sometimes conversion to open surgery is required if the operation cannot be completed with keyhole surgery.

What are the possible risks?

A robotic-assisted laparoscopic radical nephrectomy is major surgery. Your consultant will discuss the risks below with you in more detail, but please ask questions if you are uncertain.

Problems relating to the anaesthetic. Although rare, events such as the following may occur:

- a chest infection
- deep vein thrombosis or DVT (blood clot in the leg)
- a pulmonary embolus (blood clot in the lung)
- stroke or heart attack.

If you have any of these problems you may need to stay in the intensive care unit and your recovery will be delayed.

Common complications (experienced by more than one in 10 people):

- temporary shoulder pain due to the carbon dioxide (clear gas) used during surgery to inflate your abdomen and help the surgeon see more clearly – this pain disappears as the gas is reabsorbed by the body
- temporary abdominal bloating.

Occasional complications (experienced by between one in 10 and one in 50 people):

- bleeding, requiring further surgery or blood transfusions
- infection, pain or bulging of the incision site requiring further treatment
- damage to the lung cavity, requiring insertion of a temporary drainage tube into the chest
- if there is a lot of bleeding or technical difficulties during the operation, your surgeon may need to change to an open radical nephrectomy.

Rare complications (experienced by less than one in 50 people):

- involvement or injury to nearby local structures (blood vessels, spleen, liver, lung, pancreas and bowel) requiring more extensive surgery
- the abnormality of the kidney may later be shown not to be cancer
- if your remaining kidney functions poorly, you may need to have dialysis.

Very rare complications:

- death – between three and eight in every 10,000 patients die from complications.

It is important to note that you may need further treatment for your cancer after your surgery. If we find that the cancer has spread outside of your kidney, you will be referred to an oncologist (cancer specialist) who will discuss further treatment options with you.

How can I prepare for my surgery?

We will send you a date to attend a pre-assessment clinic before your surgery. It is very important that you come to this appointment, as this is when we will assess your suitability and fitness for surgery and anaesthetic. We will carry out a number of tests to make sure that your heart, lungs and other kidney are all working properly. You may have:

- a chest X-ray
- ECG or electrocardiogram (which records the electrical activity of your heart)
- some blood tests.

Your doctor will also explain any further tests you may need. **Please note that if you do not attend this appointment, we may have to cancel your surgery.**

If you smoke, you may be asked to stop smoking, as smoking increases the risk of developing a chest infection or blood clots. It can also delay wound healing because it reduces the amount of oxygen that reaches the tissues in your body. If you would like to give up smoking:

- speak to your nurse
- contact the hospital stop smoking service, **t:** 020 7188 0995, or **e:** gst-tr.stopsmoking@nhs.net
- call Smokefree National Helpline on **t:** 0300 123 1044, or visit **w:** www.nhs.uk/smokefree.

In general, it is a good idea to try and keep active in the weeks leading up to your operation. We recommend walking for 20 minutes at least three times a week. Your surgeon may also ask you to lose weight prior to surgery to minimise any risks and allow optimal recovery.

Medicines

If you are taking any medication, these may need to be temporarily stopped or adjusted around the time of your surgery or treatment. You will be given information on how to do this at your pre-assessment appointment. Do not make any changes to your usual medicines and continue to take them unless you have been advised to do so. Please remember to bring them into hospital with you.

If you are taking any medicines that thin your blood, such as antiplatelet medicines (for example aspirin or clopidogrel) or anticoagulant medicines (for examples warfarin or rivaroxaban), please tell your doctor or the nurse as you may need to stop them temporarily before your surgery. Also tell your doctor or nurse if you have diabetes as you may need to alter the dose of your diabetes medicines, as you will need to fast before the procedure. Further information on stopping any medicines will be given to you when you come for pre-assessment. Please ask us if you have any questions.

Please let us know if you are taking any regular medicines (including anything you buy yourself over the counter or any herbal or homeopathic medicines) and if you have any allergies to any medicines.

Fasting

We will give you information about fasting. Please do not eat or drink anything (except non-fizzy water) for six hours before your appointment. This means that you cannot suck on sweets or chew gum. You are allowed to drink water up to two hours before your surgery. It is important to follow the instructions. If there is food or liquid in your stomach during the anaesthetic, it could come up to the back of your throat and damage your lungs.

Patients are admitted to hospital either on the day of their operation or the day before. Your surgeon will decide which day is suitable for you. The admissions coordinator will ring you to tell you when to come in. If you are admitted on the day of your operation, you will be asked to have a shower at home in the morning before you come in.

Giving my consent (permission)

We want to involve you in decisions about your care and treatment. If you decide to go ahead, you will be asked to sign a consent form. This states that you agree to have the treatment and you understand what it involves.

Once you are in hospital

Most patients will be admitted via the surgical admissions lounge (SAL), 1st floor, Tower Wing, Guy's Hospital. Occasionally patients may be admitted to the ward the night before the surgery. The pre-assessment nurse will inform you if you are suitable for same day admission.

When you arrive in hospital, you will be seen by a nurse in the SAL who will check your details and prepare you for your surgery. You will be asked to put on a clean gown and anti-thrombus stockings. These help to prevent you developing a blood clot in your leg (deep vein thrombosis or DVT) during or after your surgery. You may take them off to shower during your hospital stay, but you must keep them on at all other times to help reduce the risk of clots. You will be able to remove them when you leave hospital.

Your surgeon will come and see you before the surgery, and place a mark on your body having reviewed your scans to confirm which kidney is to be removed.

You will be having the surgery under general anaesthetic, which means that you will be asleep for the whole of the operation and will not feel any pain. The anaesthetist will see you before your surgery to discuss the anaesthetic. You should receive the leaflet, **Having an anaesthetic**. Your specialist nurse will be available if you have any further questions or concerns. The anaesthetist will put a cannula (a thin tube into your blood vessel) through which the medications are given to put you to sleep and to prevent pain.

There may be a wait before you go to theatre, depending where you are on the list. You will walk to theatre accompanied by a nurse. Once in the anaesthetic room, you will be asked to lie on the trolley and you will be attached to a heart monitor and a cuff placed on your arm to monitor your blood pressure.

Your overnight bag will be labelled with your name, stored securely and taken to the ward for you. Once anaesthetised, you will be taken through to the operating theatre.

What happens during the operation?

Four to six incisions are made, each incision 5-10mm in length. Special plastic tubes (ports) are placed through each incision to help the robotic instruments pass through easily. A robotic camera is placed through one incision which allows the surgeon to see pictures of inside your body on high definition (HD) monitors in the theatre. The remaining incisions allow access for the surgical instruments used during the operation.

One of the incisions is enlarged so that the surgeon can remove the kidney through it once it has been disconnected from the surrounding tissue and blood vessels. The operation generally takes between two and three hours.

What happens after my operation?

After the surgery is finished, you will be taken to the recovery room and remain there until you come around from the anaesthetic. This may take an hour or two. You may be taken to the high dependency or intensive care unit while you recover for the first 24 hours. This will depend on how well you are after your surgery and your general health before your operation.

You will then be taken back to your ward. On the day of the procedure, friends and family members can wait in the ward day room and visit you afterwards. Aston Key and Florence Ward are the urology wards where you will be admitted after your procedure. These are on the 4th floor, Borough Wing. Your consultant will see you after you have returned to the ward and your nurse has settled you in.

You may wake up with the following.

- **A catheter.** This is a hollow tube inserted into the bladder, which will collect your urine so you will not need to leave your bed. It will also allow nurses to carefully monitor your urine output. The catheter will be removed as soon as you are fully awake, normally the morning after your surgery.
- **Drain.** This is a hollow tube inserted into the abdomen to drain fluids. It will normally be removed the day after surgery if there is minimal output.
- **Dressings.** Surgical glue/staples or absorbable stitches are used to cover the port holes. These wounds are covered in dressings.
- **A drip.** This delivers fluids into one of your arm veins to prevent you getting dehydrated. It is usually removed the day after your surgery when you are able to drink freely.
- **An oxygen mask or nasal prongs** (thin plastic tube which delivers oxygen in the nose). These give you extra oxygen in the first day or two after your operation if required.

Eating and drinking. You will be able to drink clear fluids when you wake up and should be able to start eating a light diet within a few hours. Your ward nurse will be able to advise you at the time.

Washing. You should be able to shower within 24 hours of your surgery.

You may also be given a daily blood-thinning (anticoagulant) injection. This reduces the risk of a DVT (blood clot in the leg). The injections may be needed for 28 days in total. You or a family member/friend will be taught how to give the injections before you leave the ward.

Will I feel any pain after the operation?

You will be given local anaesthetic to the port hole wounds in your abdomen. Most patients find that they need little pain relief after the operation, but please let us know if you are in pain and we will give you medicine as needed.

Some patients experience shoulder pain for a few days. This is due to the gases used to inflate the abdomen during surgery. The best thing to reduce this discomfort is to sit up, get out of bed and move around to help dispel the air.

Leaving hospital

You will be discharged from hospital when:

- you have passed wind
- you can move around safely
- you are able to pass urine
- your pain is well-controlled with the painkillers we are giving you.

When leaving hospital, you should have:

- a supply of painkillers (and a daily blood-thinning (anticoagulant) injection if required)
- a date for your follow-up appointment (if you have not received an appointment, please contact the CNS team on t: 020 7188 7823)
- contact details of the nurse specialist and ward should you have any concerns.

What do I need to do after I go home?

The most common complaint after surgery is tiredness and feeling bloated. It is important to remember that you have had major surgery and that you need to rest at home. Recovery time from abdominal surgery varies. You will need a period of time to recover fully before returning to normal activities. You may find you need to rest or sleep more than usual in the first two weeks. You should be active within your home and build up to returning to your usual tasks.

You will need to:

- Eat a light diet (avoid heavy, starchy meals) until your bowel movements are back to normal. You can help your bowel movement return to normal by drinking plenty of water (1.5 to 2 litres a day).
- Take it easy. Do not lift anything heavy or do anything too energetic (such as carrying heavy shopping, vacuuming, mowing the lawn, lifting weights or running) for at least two to four weeks after your surgery. Doing these things may put too much strain on your wounds and may make your recovery take longer. Build up your activities slowly and only do as much as you feel able to.
- Give yourself a couple of weeks rest before returning to work. If your work involves heavy lifting or exertion, please speak to your consultant.
- Only start driving again when you are able to perform an emergency stop without feeling hesitant. Check with your insurance company to make sure you are covered to start driving again. **If you are taking painkillers please check with the pharmacist whether it is safe to drive.**
- The skin clips (staples) should be removed 12-14 days post op. This can be done by your practice nurse at the GP surgery or in clinic at your follow up appointment.

Will I have a follow-up appointment?

Yes. You will be seen by your surgeon or a member of their team about two weeks after your operation. Your follow-up after this will depend on your cancer type – this will be explained to you when you attend your first follow-up appointment.

Commonly asked questions

Does the robot do the surgery?

No, the surgeon does the surgery. The robot allows the surgeon to operate in small spaces in the body and to precisely control two 7mm instruments. The robot is controlled by the surgeon and does not work on its own.

How much pain will I be in after the surgery?

Since the surgery is done through small incisions, most patients experience much less pain than with open surgery, and will therefore require less painkillers. You will be given regular painkillers for the first few days. After one week, most patients will not experience any pain.

When can I exercise?

We encourage light walking right after the procedure and brisk walking after two weeks. We recommend you wait until six weeks after your surgery to resume aerobic exercise, heavy lifting or running.

When can I have sex again?

This will depend on when both you and your partner feel comfortable. It is safe after one week.

Can I shower or bathe?

Yes, the wounds in your abdomen are either dissolvable stitches or waterproof clips. Allow warm water to run over your abdomen. You can use your usual hygiene products. It is important that you rinse the soap thoroughly from your body as this may irritate the wounds. You should pat yourself completely dry.

When can I drive?

When you feel comfortable to do so and when you are able to perform an emergency stop. Please also check with your insurance company before returning to drive.

When can I return to work?

Please allow at least two weeks' recuperation before returning to work. If your work is more physical or involves any heavy lifting, please speak to your doctor before leaving the hospital. This can be discussed further when you attend for your follow-up appointment.

Contact us

If you have any questions or concerns about your operation, please contact the CNS team on **t:** 020 7188 7823 (Monday to Friday, 9am to 5pm). You can also call the hospital switchboard on **t:** 020 7188 7188 and ask for the bleep desk. Ask for bleep 1133 and wait for a response. This will connect you to the CNS team directly. Out of hours, please contact Florence or Aston Key wards on **t:** 020 7188 2441, or contact your GP for advice.

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit **w:** www.guysandstthomas.nhs.uk/leaflets

Useful sources of information and support

Macmillan Cancer Support provides information and support to anyone affected by cancer.

t: 0808 800 1234 **w:** www.macmillan.org.uk

South East London Cancer Network provides information for people affected by cancer in South East London.

w: www.patientinfo.selcn.nhs.uk

Cancer Research UK has a patient information website, with information on all types of cancer and treatment options, as well as a book list for further information.

w: www.cancerhelp.org.uk

Kidney Cancer UK provides information, counselling and support for those with kidney cancer.

t: 08000029002 **t:** counselling 03001020101 **w:** www.kcuk.org.uk

Pharmacy Medicines Helpline

If you have any questions or concerns about your medicines, please speak to the staff caring for you or call our helpline.

t: 020 7188 8748, Monday to Friday, 9am-5pm

Your comments and concerns

For advice, support or to raise a concern, contact our Patient Advice and Liaison Service (PALS). To make a complaint, contact the complaints department.

t: 020 7188 8801 (PALS) **e:** pals@gstt.nhs.uk

t: 020 7188 3514 (complaints) **e:** complaints2@gstt.nhs.uk

Language and accessible support services

If you need an interpreter or information about your care in a different language or format, please get in touch.

t: 020 7188 8815 **e:** languagesupport@gstt.nhs.uk

NHS 111

Offers medical help and advice from fully trained advisers supported by experienced nurses and paramedics. Available over the phone 24 hours a day.

t: 111 **w:** www.111.nhs.uk

NHS website

Online information and guidance on all aspects of health and healthcare, to help you take control of your health and wellbeing.

w: www.nhs.uk

Was this leaflet useful?

We want to make sure the information you receive is helpful to you. If you have any comments about this leaflet, we would be happy to hear from you, fill in our simple online form, **w:** www.guysandstthomas.nhs.uk/leaflets, or **e:** patientinformationteam@gstt.nhs.uk

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