Urology Department

Robotic-assisted (Da Vinci®) Laparoscopic partial removal of 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 Hospital. 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 removal of part of the kidney with the surrounding fat for suspected or proven cancer of the kidney, through several keyhole incisions. It involves the placement of a telescope and operating instruments into your abdominal cavity using three to five small incisions, a robot assisted technique will then be used to remove the kidney tumour. One incision will need to be enlarged to remove the kidney tumour.

What are the alternatives to this procedure?
Partial nephrectomy by open surgery, observation of the lesion or total removal of the kidney by laparoscopic or open surgery.

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 pre-medication by the anaesthetist which will make you dry-mouthed and pleasantly sleepy.
You will need to wear anti-thrombosis stockings during your hospital stay; these help prevent blood clots forming in the veins of your legs during and after surgery.

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 or Clopidogrel (Plavix®)
- a previous or current MRSA infection
- high risk of variant Creutzfeldt-Jakob Disease (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?

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.

A bladder catheter is normally inserted during the operation to monitor urine output and a drainage tube is usually placed through the skin into the bed of the kidney. A ureteric catheter is sometimes inserted during the operation up to the kidney by means of a telescope passed into the bladder.

The robotic partial nephrectomy is an operation to remove the kidney tumour using laparoscopic techniques. A robotic console is placed beside you in the operating theatre. Attached to the console are up to four robotic arms; three for instruments and one for a high magnification 3D camera to allow the surgeon to see inside your abdomen. The three robotic arms have the ability to hold various instruments attached to them and allow the surgeon to carry out your operation.

The instruments are approximately seven millimetres in width. The instruments have a greater range of movement than the human hand and because of their size; they allow the surgeon to carry out the operation using 3D imaging in a small space within the body.
With robotic surgery, the instruments are placed on to the robotic arms through small port holes into your abdomen. The operating surgeon sits in the same room but away from the patient and is able to carry out more controlled and precise movements using robotic assistance. The robot does not, of course, do the operation. The instruments are controlled by the surgeon (who does the operation) and the robot cannot work on its own.

**What happens immediately after the procedure?**

You will be given fluids to drink from an early stage after the operation and you will be encouraged to mobilise early to prevent blood clots in the veins of your legs. Your catheter and drain will be removed as soon as possible, often on the first day after surgery. You should expect to be discharged home two days after surgery and have arrangements in place at home to allow for this.

**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 shoulder tip pain
- [ ] Temporary abdominal bloating
Occasional (between one in 10 and one in 50)
- Infection, pain or hernia of the incision requiring further treatment
- Total removal of the kidney may need to be performed if partial removal is not thought to be possible
- Bleeding requiring blood transfusion or conversion to open surgery
- Urinary leak from the cut edge of the kidney requiring further treatment or insertion of a ureteric stent
- The histological abnormality may eventually turn out not to be cancer

Rare (less than one in 50)
- Entry into lung cavity requiring insertion of a temporary drain
- Recognised (or unrecognised) injury to organs/blood vessels requiring conversion to open surgery (or deferred open surgery)
- Involvement or injury to nearby local structures (blood vessels, spleen, liver, kidney, lung, pancreas, bowel) requiring more extensive surgery
- Anaesthetic or cardiovascular problems possibly requiring intensive care admission (including chest infection, pulmonary embolus, stroke, deep vein thrombosis, heart attack and death)

Hospital-acquired infection (overall risk for Addenbrooke’s Hospital)
- Colonisation with MRSA (0.01%, two in 15,500)
- Clostridium difficile bowel infection (0.02%; three in 15,500)
- MRSA bloodstream infection (0.00%; 0 in 15,000)

(These rates may be greater in high risk patients such as those with long term drainage tubes, after removal of the bladder for cancer, after previous infections, after prolonged hospitalisation or after multiple admissions.)

What should I expect when I get home?

Before you leave hospital, the team will ensure you are safe to be discharged 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.

There will be some discomfort from the small incisions in your abdomen but this can normally be controlled with simple painkillers. All the wounds are closed with absorbable stitches which do not require removal or staples which will need to be removed 10 days following surgery by the nurse at your GPs practice. It will take 10 to 14 days to recover fully from the procedure and most people can return to normal activities after two to six weeks. If a ureteric stent has been inserted, you may notice that you pass urine more frequently with pain in the bladder region.
What else should I look out for?

If you develop a temperature, have increased redness, throbbing or drainage at the site of the operation and/or increasing abdominal pain or dizziness, please contact your GP or Ward N2 (01223 256650) immediately. Any other post-operative problems should also be reported to your GP, especially if they involve chest symptoms.

Are there any other important points?

A follow-up outpatient appointment will normally be arranged for you approximately six weeks after the operation. At this time, we will be able to inform you of the results of pathology tests on the removed section of the kidney.

It will be at least 14 to 21 days before the pathology results on your kidney are available. It is normal practice for the results of all biopsies to be discussed in detail at a multidisciplinary meeting before any further treatment decisions are made. You and your GP will be informed of the results after this discussion. If a ureteric stent has been inserted, arrangements will be made for its removal approximately six weeks after your discharge from hospital.

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 or single rooms 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 require.

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 may need to remove hair to allow them to see or reach your skin. If the healthcare team consider it is important to remove the hair, they will do this by using 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 for hair removal, as this can increase the risk of infection to the site of the operation.
If you have any questions, please ask the healthcare team who 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?

Yes. As part of your operation, various specimens of tissue will be sent to the pathology department so that we can find out details of the disease and whether it has affected other areas. This information sheet has already described to you what tissue will be removed.

We would also like your agreement to carry out research on that tissue which will be left over when the pathologist has finished making a full diagnosis. Normally, this tissue is disposed of or simply stored. What we would like to do is to store samples of the tissue, both frozen and after it has been processed. Please note that we are not asking you to provide any tissue apart from that which would normally be removed during the operation.

We are carrying out a series of research projects which involve studying the genes and proteins produced by normal and diseased tissues. The reason for doing this is to try to discover differences between diseased and normal tissue to help develop new tests or treatments that might benefit future generations. This research is being carried out here in Cambridge but we sometimes work with other universities or with industry to move our research forwards more quickly than it would if we did everything here.

The consent form you will sign from the hospital allows you to indicate whether you are prepared to provide this tissue. If you would like any further information, please ask the ward to contact your consultant.

All laparoscopic procedures are subject to continuous audit by the British Association of Urological Surgeons Section of Endourology.

In addition, the National Institute of Health and Clinical Excellence (NICE) requires that we maintain a careful review of laparoscopic procedures.
Who can I contact for more help or information?

**Uro-oncology nurse specialist**
Telephone: 01223 586748

**Surgical care practitioner**
Telephone: 01223 348590 or 256157 or bleep 154-351

**Patient Advice and Liaison Centre (PALS)**
Telephone:
+44 (0)1223 216756 or 257257
+44 (0)1223 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: +44 (0)1223 217769
Email: 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: +44 (0)1223 217589

**Access office (travel, parking and security information)**
Telephone: +44 (0)1223 596060

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:……………………………….
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.

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.

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