

Robotic-assisted laparoscopic pyeloplasty

This leaflet explains more about Robotic-assisted laparoscopic pyeloplasty, including the benefits, risks and any alternatives. It also provides information on 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 pyeloplasty?

A pyeloplasty is an operation to repair or the junction of the ureter (the tube that connects the kidney to the bladder) and the kidney. When this tube is narrowed it does not allow the kidney to function properly by affecting its ability to drain. Over time this will damage the kidney.

What is laparoscopic surgery?

Laparoscopic surgery is also often called keyhole surgery. It is carried out using several small incisions (also called **keyholes** or **port holes**) rather than the one large incision for traditional open surgery.

What is robotic-assisted surgery?

Robotic-assisted surgery is a laparoscopic technique that uses a robotic console (the daVinci® system) to help your surgeon during the operation. Your surgeon is in the same room, but away from you, and controls the robotic arms to perform the operation. **It is important to understand that the robot is not performing the surgery.** The surgeon still carries out the procedure, but the robotic console allows more controlled and precise movements during the operation.

The robotic console has three arms; one holds a high magnification 3D camera, which is inserted into your abdomen through one of the keyholes. This allows your surgeon to see inside your abdomen. The other robotic arms can hold various instruments, which your surgeon will use to carry out the operation. The instruments are smaller than those used for traditional open surgery. Robotic-assisted surgery has a number of advantages over traditional surgery:

- Average blood loss is around 200ml to 500ml compared to 500ml to 1500ml for traditional open surgery.
- You are generally able to start eating and drinking more quickly after robotic assisted surgery.
- You are often able to leave hospital a day or two sooner than if you have traditional open surgery.

What is a robotic-assisted laparoscopic pyeloplasty?

A robotic-assisted laparoscopic pyeloplasty is keyhole surgery to repair or re-fashion the junction where the ureter meets the kidney.

The da Vinci® robot provides high-definition imaging and a three-dimensional (3D) view of your abdomen for the surgeon. 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 process of reconstruction (rebuilding) of the kidney and ureter during the procedure than standard laparoscopy.

Why should I have a robotic-assisted laparoscopic pyeloplasty?

Your doctor will have already discussed with you why he/she recommends you should have this procedure. The benefits of keyhole surgery, compared with traditional open surgery, include:

- **Less blood loss.** Blood loss is typically about 200 to 300mls for robotic-assisted surgery, whereas in a traditional open pyeloplasty it can be more than 1,000mls. This means the risk of needing a blood transfusion is smaller with robotic-assisted surgery.
- **Less pain after the operation,** because there is no large abdominal wound. Patients rarely need strong painkillers, and can return to normal activities and work sooner compared with traditional open surgery.
- **Shorter hospital stay.** Most patients go home one or two nights after robotic-assisted surgery, compared to an average of three or four nights for traditional open surgery.
- **Smaller scars.** It avoids the large scar from traditional open surgery, although you will have smaller scars from the keyholes.
- **More precise suturing (stitching),** compared with standard laparoscopic keyhole surgery
- **Quicker full recovery,** enabling you to return to work sooner than with traditional open surgery.

What are the risks?

As with any surgery, there are some risks associated with this procedure. Some of the more common ones include:

Possible early complications of any major operation

Problems that can occur while you are in hospital recovering are similar to those for any major operation. These include:

- bleeding requiring the need for a blood transfusion or re-operation
- injury to nearby nerves or tissues
- a chest infection
- blood clots in your lower leg (deep vein thrombosis or DVT), which could pass to your lung
- wound infection
- bruising around your wounds, poor wound healing or weakness at the wound sites.

Specific risks for a robotic assisted laparoscopic pyeloplasty

- Damage to structures inside your abdomen, bowel, liver, spleen, or blood vessels.
- and other organs from the instruments. This risk is higher when the instruments are inserted, so the telescopic instrument (the high magnification 3D camera) is inserted first and then used to help insert the other instruments.
- There is a risk of developing a hernia due to the small incisions made for the instruments which is known as 'port site hernia'.
- Carbon dioxide (used during surgery) could become trapped in your abdomen. This can cause pain in one or both shoulders, but disappears as the gas is reabsorbed by your body.
- Bleeding requiring blood transfusion (occurs in fewer than two out of every 100 procedures). Occasionally a bleeding blood vessel can be blocked in the x-ray department using angiography (blood vessel imaging).
- Urinary leak around the kidney joining to the ureter tube (three to five in 100). This may require a prolonged hospital stay.
- Complications associated with general anaesthetic, such as irregular heartbeat, chest infection, or blood clots in the legs (deep vein thrombosis or DVT) or lungs (pulmonary embolism).
- Recurrence due to failures of the repair 5-10%
- Failure of the repair may need to a recurrence of the narrowing. This occurs in 5% to 10% of cases
- The need to convert to traditional open surgery.
- Nerve compression, where the pressure from the positioning of your body during the operation can reduce the blood flow supplying your nerves and cause damage. This may require further treatment.
- There is a small risk of dying from this surgery (one to two in a hundred patients. This is no higher than for traditional open surgery.

Your surgeon will discuss these risk factors with you in detail. If you have any questions, concerns or need further information, please feel free to ask him/her.

How can I prepare for my procedure?

We will send you a date to come to the pre-assessment clinic before your surgery. You must 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 kidneys are working properly. You may have a chest X-ray, ECG or electrocardiogram (which records the electrical activity of your heart) and some bloods taken. Your nurse will explain any tests you need.

If you do not attend this appointment, we may have to cancel your surgery.

Smoking

If you smoke, you should try to stop smoking, as this increases the risk of developing a chest infection or deep vein thrombosis (DVT), or lung (pulmonary embolism). Smoking can also delay wound healing. For help giving up smoking, please speak to your nurse, or call the Trust stop smoking service on **020 7188 0995** or call the NHS Smoking Helpline on **0800 169 0 169**.

Medication

Please bring all of the medicines that you currently take or use with you, including anything that you get from your doctor on prescription, medicines that you have bought yourself over the counter, and any alternative medicines, such as herbal remedies.

Please continue to take all your regular medications as normal, but if you take any antiplatelet medicines (such as aspirin, clopidogrel, prasugrel or ticagrelor) or any anticoagulant medicines (such as warfarin, acenocoumarol, phenindione, rivaroxaban, dabigatran, apixaban or edoxaban), then you will need to stop them temporarily before you have the surgery. If you are taking heparin injections eg dalteparin, enoxaparin then you should continue until admission

- You should stop taking **aspirin** at least seven days before your operation
- You should stop taking **clopidogrel, prasugrel or ticagrelor** at least 7-10 days before your operation
- If you are taking **warfarin, acenocoumarol or phenindione**, please inform your surgical team or nurse in pre-admission clinic in advance as these will need to be stopped 4 days **before surgery** and if necessary your nurse in pre-admission will arrange anti coagulation injections to replace your regular medication.
- If you are taking one of the **new anti coagulation medications** such as **rivaroxaban, dabigatran, apixaban or edoxaban**, please inform your surgical team or nurse in pre-admission clinic in advance as these will also need to be stopped in sufficient time before surgery. and if necessary arrange anti coagulation injections to replace your regular medication

If you have diabetes then you may need to alter the dose of your **diabetes medicines** around the time of surgery.

Do not make any changes to your usual medicines, whatever they are for, without consulting your doctor first.

Diet

It is helpful if you can follow a healthy diet, incorporating fresh fruit and vegetables into your daily consumption.

It is important you maintain a good fluid intake, aiming to drink between 2-3 litres during a 24 hour period to prevent a urinary tract infection (UTI) this can be water, sugar free squash, juices, but you should limit the amount of tea and coffee you drink to one or two cups a day.

Exercise

In the time between seeing your surgeon in clinic and having your surgery, it is helpful to try to maintain being as active as possible. This can be as simple as walking to the shops, or using the stairs rather than the lift.

If you can do 20 minutes, four times a week, of fast walking, this will help with your fitness and recovery from surgery.

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.

If you would like more information about our consent process, please speak to a member of staff caring for you.

What happens on the day of my surgery?

You may eat and drink as normal the evening before the surgery. However, you will not be able to have anything to eat or drink for at least six hours before the operation.

You will have your robotic/laparoscopic pyeloplasty under a general anaesthetic, which means that you will be asleep for the whole of the operation and will not feel any pain.

Hospital Admission

Most patients will be admitted via the Surgical Admissions Lounge (SAL) 1st floor Tower Wing. 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.

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.

You will be having the surgery under general anaesthetic, which means that you will be asleep the whole of the operation and will not feel any pain. The anaesthetist will put a cannula (a thin tube into a blood vessel) through which the medications are given to put you to sleep. The anaesthetist will see you in the SAL to check all is in order for your procedure.

You will be seen by the nurse and a checklist will be completed. You will be asked to put on a hospital gown and special stockings to reduce the risk of developing blood clots in your legs.

There may be a wait before you go to theatre, depending on where you are on the list.

You will walk to the 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

What happens after the surgery?

You will wake up in the recovery room with a catheter in your bladder, a wound drain in your tummy, and four to five small wounds from where the incisions have been made. The incisions may be closed with either sutures (stitches) or surgical clips. Stitches are dissolvable and clips are normally removed 10 days after your operation.

You will be monitored in the recovery room and once you are stable you will be transferred back to the ward. We do ask that you move your feet and wiggle your toes to help promote circulation in your legs while you are immobile.

Your catheter will remain in for about 24 hours and the drain will come out after about 24 hours.

The average length of stay in hospital for this procedure is one to two days.

You will be able to leave hospital when:

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

You may be given a daily blood-thinning (anticoagulant) injection and will be asked to wear anti-thrombosis stockings. This reduces the risk of you developing a blood clot in the leg or lung. **These injections may need to be given for 28 days in total and will therefore need to be continued after you have left hospital.** You or a family member/friend will be taught how to give these injections before you leave the ward.

What can I expect after I go home?

You should remember that although you may feel well and do not have a large scar, you still have had major surgery. You will need a period of time to recover fully before returning to normal activities. You should be active within your home and build up to returning to your usual tasks.

You may have some pain associated with the surgery and it is also common to feel lethargic after major surgery. You may need to rest or sleep more than usual in the first two weeks after the operation.

A stent (internal kidney tube) is placed during the operation, to allow the join between the kidney and ureter to heal. This can cause stent symptoms:

- Frequency of passing urine
- Urgency of passing urine
- Pain when passing urine
- Blood in the urine

These symptoms get better once the stent is removed.

Will I have a follow-up appointment?

Yes. You will have a follow-up appointment with your consultant team, to find out the results from your surgery. You will also need an appointment to have your stent removed under local anaesthetic. If you have not received an appointment, please call 020 7188 7823 for advice on when you will be seen.

Your follow-up after this will depend on your surgeon. This will be explained to you when you attend your first follow-up appointment.

Some commonly asked questions

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 fewer painkillers. You will be given regular painkillers by mouth or injection 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. Four weeks after the surgery you can resume jogging, aerobic exercise and heavy lifting.

Can I shower or bath?

Yes, the stitches in your tummy are either dissolvable or waterproof clips. It is important that you rinse the soap thoroughly from your body as this may irritate the wounds, and that you pat yourself completely dry.

When can I drive?

You should only drive again when you are free of pain and able to perform an emergency stop comfortably. You should check with your insurance company to make sure you are covered to start driving again. If you are taking painkillers please check with a pharmacist whether it is safe for you to drive.

When can I have sex again?

This will depend on when both you and your partner feel comfortable but it is safe after two weeks.

When can I return to work?

You can return to work when you feel well and comfortable. We usually advise taking two weeks off work, depending on the type of work you do. If your job involves lifting, please speak to your doctor before leaving hospital as you may need to take longer off work.

Please check with your employer which sickness note they require. It is usually okay to self-certificate for up to seven days but if you are off work for a longer period you will need to see your GP for a certificate. We cannot supply certificates.

If you have any further questions, please do not hesitate to speak to the nursing or medical staff.

Contact us

If you have any questions or concerns about your operation, please contact the Clinical Nurse Specialist's (CNS) office on on **020 7188 7823** (Monday to Friday, 9am to 5pm). Alternatively, you can bleep the CNS calling the hospital switchboard on 020 7188 7188 and asking for the bleep desk. Ask for bleep 1133 or 2841 and wait for a response. **Out of hours**, please contact Florence ward on 020 7188 8818, Aston Key ward on 020 7188 8860 or your GP for advice.

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

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 9am to 5pm, Monday to Friday

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

NHS Choices

Provides online information and guidance on all aspects of health and healthcare, to help you make choices about your health.

w: www.nhs.uk

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t: 0800 731 0319 **e:** members@gstt.nhs.uk **w:** www.guysandstthomas.nhs.uk/membership

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