

Robot assisted kidney transplantation

This leaflet explains more about robot assisted kidney transplantation. It will tell you why you are being offered it, the benefits, risks and alternative treatments. It will give you an overview of the process from being referred to our clinic to follow-up after your kidney transplant.

If you have any further questions or concerns please speak to a doctor or a nurse caring for you, the contact details are at the end of this leaflet.

You have already been given information about the different types of kidney transplants. The aim of this leaflet is to explain more about robot assisted renal transplantation. The transplant team here at Guy's and St Thomas' have performed more than 1,000 laparoscopic ('keyhole') operations on living kidney donors, making us the most experienced team in the UK for this sort of procedure.

However, there are technical difficulties in performing a laparoscopic operation in transplant recipients. Using a robotic system to help in the operation may allow us to overcome these problems, and perform a less invasive procedure. The operation is likely to be longer than a conventional transplant, taking around three hours on average, compared with two and a half hours for traditional open surgery.

What is robotic assisted kidney transplantation?

We have had a robotic system (DaVinci) at Guy's Hospital for over a decade. It is mainly used to perform urological surgery, such as operations on the prostate or bladder.

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.

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 open surgery:

- Average blood loss may be less than 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.

For robot assisted kidney transplantation the aim is to use a much smaller incision (cut) than used for traditional open surgery (about 7cm) to insert the kidney into the abdomen, and then to stitch the blood vessels and the ureter (the tube which connects the kidney to the bladder) using robotic instruments. As well as this incision, four or five small (0.5 to 1cm) incisions are used to insert the instruments into the abdomen. Since part of the operation is performed using the robot, and part using conventional instruments, the procedure is known as 'robot assisted.'

Why should I have robot assisted kidney transplantation?

Robot assisted kidney transplantation is a new programme in the UK and introduced at Guy's and St Thomas' in the summer of 2016., In the first instance the procedure is offered to patients undergoing living donor transplantation.

We believe that robotic assisted kidney transplantation will allow you to recover more quickly and that you will experience less pain after the operation than with traditional open surgery, although this is still to be tested in large trials.

Has the procedure been performed already?

This procedure has been performed in Chicago, two centres in India, and Italy. Results from all these centres have been good, although formal comparisons with traditional open surgery, in the form of trials, are yet to be carried out.

The largest experience is from the two centres in India, who have carried out over 120 and 80 robot assisted transplants respectively. The first group report one surgical complication (clotting of the renal vein) and the second group no surgical complications.

What are the risks of robot assisted kidney transplantation?

There are some risks that are associated with transplant surgery, irrespective of the technique used. There is more detail about the risks associated with transplant surgery in the booklet: **Your Guide to Kidney Transplantation**. Please ask for a copy of this booklet if you don't have one. Your surgeon will discuss the possible risks of this operation with you in more detail before asking you to sign a consent form. Please ask questions if you are uncertain about anything.

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 kidney transplantation

- Damage to structures inside your abdomen, 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'.
- There is the potential risk of twisting of the kidney ('torsion') after the transplant, as it is placed in the main abdominal cavity (intra-peritoneal) rather than behind it (retroperitoneal), however this should be minimised by fixing the kidney to the abdominal wall.
- There may also be an increased risk of scarring affecting the bowel in the long term (adhesive obstruction).
- 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.
- 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 women. This is no higher than for traditional open surgery.

What is the experience of the team?

The team consists of five surgeons; three transplant surgeons all of whom have an extensive experience of laparoscopic ('keyhole') donor operations and two urology surgeons, who have an extensive experience of robot surgery.

The first five operations will be performed with the help of one of the Indian surgeons, who has carried out over 270 robot assisted transplants.

Members of the team have visited the two Indian centres, and have watched the technique being performed. The team have also undergone specific training on the robot, and have practised techniques using both the robot itself and a simulator (model).

Are there any alternatives?

Yes; you do not have to agree to undergo robot assisted transplantation. You can have your surgery using traditional open surgery, and if you chose to do so, your care will not be affected. You will be given adequate time to think about your decision, and opportunities to discuss this with a member of the surgical team.

Giving your 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 after I have my transplant?

Your care after the operation will be as described in the booklet: **Your Guide to Kidney Transplantation**. We will ask you some questions whilst you are in hospital (such as assessing your pain) in order to gauge the effectiveness of the procedure, and will collect some data (such as time taken to return to normal activities) on your recovery when you are seen at the transplant clinic.

We hope you have found this leaflet useful. All patients are different and we strongly advise that you discuss your situation carefully with your medical and nursing teams to ensure that you understand the implications for you personally.

Contact us

Professor Nizam Mamode (Consultant Transplant Surgeon)

020 7188 1543

Lisa Silas (Advanced Nurse Practitioner – Living Donation)

020 7188 5688

9am – 5pm Monday to Friday, outside these hours, please contact: 07917 084 532

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 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

Get involved and have your say: become a member of the Trust

Members of Guy's and St Thomas' NHS Foundation Trust contribute to the organisation on a voluntary basis. We count on them for feedback, local knowledge and support. Membership is free and it is up to you how much you get involved. To find out more, and to become a member:

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

Leaflet number: 4291/VER1

Date published: August 2016

Review date: August 2019

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