

# Types of surgery for kidney cancer

## Useful information for cancer patients

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This information is about the different operations that you may have for kidney cancer. Surgery can be used to treat almost any stage of kidney cancer.

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You can view this information in a larger print on our website.

### **Surgery for kidney cancer**

Surgery can remove an early stage or locally advanced kidney cancer with the aim of curing it. It can also be used to remove secondary cancers to control the growth of the cancer and relieve symptoms.

### **Curing cancer that has not spread**

To do this, it must be possible to remove the cancer completely. Stage 1 and 2 kidney cancers are contained within the kidney and are most likely to be curable with surgery. Stage 3 cancers have spread into a nearby lymph node, the adrenal gland or the vein leading to the kidney. It is sometimes possible to

cure them with surgery if the surgeon can get all of the cancer out.

Depending on the stage of the cancer the surgeon may remove part of the kidney (partial nephrectomy), the whole kidney (simple nephrectomy), or the kidney as well as nearby lymph nodes and the adrenal gland (radical nephrectomy).

### **Partial nephrectomy**

This operation is commonly used for small kidney cancers that have not spread. The surgeon removes the cancer and part of the kidney surrounding it. Some of the kidney is left behind. Doctors call this nephron sparing surgery. The nephron is the filtering unit of the kidney, so you have some working kidney left after the operation.

This type of surgery used to be rare. But many kidney cancers are being found at an early stage, by accident, when you have a scan for something else. This type of treatment is often appropriate for them. If at all possible, removing part of the kidney is used for anyone with a stage 1 kidney cancer (less than 7cm across). In some people, it may not be possible to have this type of surgery, even with a small tumour, because of its position within the kidney. If you are at all worried about this, talk it through with your surgeon.

### **Simple nephrectomy**

The surgeon removes the whole kidney and the urine collecting tube (ureter) on that side.

### **Radical nephrectomy**

The surgeon removes the whole kidney with the tissues around it, including the adrenal gland. The adrenal gland is attached to the kidney. The surgeon also removes some lymph nodes in the area. The

surgery is fairly major but if your cancer has not spread, this is all the treatment you will need.

### **If you can't have surgery**

If you have a very small kidney tumour and are not well enough for surgery, your specialist may offer you treatment to destroy the cancer by freezing it. They call this cryotherapy. Another treatment that can destroy the cancer cells is radio wave treatment (radiofrequency ablation).

### **Keyhole and robotic surgery**

Surgeons can sometimes remove the kidney using small cuts in the abdomen instead of making one large cut. They may use laparoscopic surgery or robotic surgery. These techniques can have different risks and benefits to standard open surgery techniques.

### **Laparoscopic surgery**

Keyhole surgery is also called minimal access surgery or laparoscopic surgery. It means having an operation without needing a major incision (wound site). The surgeon uses an instrument a bit like a telescope. This is called a laparoscope. It has a camera at one end and an eyepiece at the other so that the surgeon can see inside the body. The surgeon will usually make a number of small cuts through your skin. They can put the laparoscope and other small instruments through these to carry out the surgery. So you will end up with 3 or 4 small wounds, each a centimetre or so long. The surgeon can manipulate the instruments and watch what they are doing on the camera. It is possible to remove a whole kidney or part of a kidney using laparoscopic surgery.

### **Robotic surgery**

Assisted robotic surgery is a type of keyhole (laparoscopic) surgery. It is also called da Vinci surgery. A surgeon does the surgery through small cuts in the abdomen and uses a special machine (robot) to help. In the UK it is mainly available at specialist cancer hospitals. During the surgery a robotic machine is beside you. The machine has 4 arms. One holds the camera and the others hold the surgical instruments. The surgeon makes small cuts in

your abdomen. The camera and instruments are put in through the cuts to do the surgery. The surgeon then carries out the surgery using a machine to control the robots arms. The surgeon has a 3D view of the operating area that they can magnify up to 10 to 12 times.

### **Benefits and risks of keyhole surgery**

The advantages of keyhole surgery over normal, open surgery are:

- You are likely to be more comfortable and need less painkilling medication after your operation
- You can usually go home from hospital more quickly
- You usually recover from the operation more quickly

There are drawbacks. The operation may take longer, so you may be under anaesthetic for longer. In some of these operations, the surgeon has to switch to regular, open surgery during the procedure. This could be because the position or size of the tumour makes it difficult to reach, or because there is difficulty controlling bleeding, for example.

If you are interested in having this type of surgery, talk to your surgeon. You may need a referral to a specialist urological surgeon with particular experience in laparoscopic kidney surgery.

### **Treatment after surgery**

In most cases, the operation to remove your kidney will not affect your bladder. This means you will not need a urostomy (a bag to collect your urine). But you might need a drainage tube (urinary catheter) from your bladder for a few days after your operation.

If your surgeon is satisfied that all the cancer has been removed, you won't need any further treatment. If the surgeon is concerned that some cancer cells may have been left behind, your doctor may discuss with you the option of having biological therapy treatment as part of a trial. Or your doctor may recommend a course of radiotherapy but this is not common.

Although many treatments have been tested in research trials, at the moment there is no treatment that can reduce the chance of kidney cancer coming back after surgery. Currently trials are being carried out to see if biological therapies can do this.

### Relieving symptoms

Even if your cancer is unlikely to be cured with surgery, it may still be worth you having an operation to remove it. Your doctor may call this a palliative nephrectomy. Sometimes the primary cancer causes troublesome symptoms that can be successfully treated by removing the kidney. The kidney tumour may be causing you pain locally, or causing blood in your urine. Or you may have general symptoms such as fevers or weakness.

The tumour can change the levels of chemicals in your blood, which can cause symptoms such as sickness or drowsiness. In kidney cancer, the tumour may release chemicals called cytokines that can cause these symptoms. Removing the tumour can reduce or get rid of these symptoms.

Removing the cancerous kidney may also slow down the progress of the cancer outside the kidney. 2 recent clinical trials have shown that patients who have advanced kidney cancer may live longer if they have the affected kidney removed. This treatment may be suitable for you if you:

- Have a primary cancer that can be removed with surgery
- Have a kidney cancer that is causing troublesome symptoms
- Have only a small amount of secondary cancer
- Are fit enough to make a good recovery from the operation

### Removing cancer spread

Removing cancer that has spread (secondary cancer) is very specialist surgery. It is becoming more common, as it is possible to slow down a cancer and so give a longer and better quality of life to people with advanced cancer. In some cases, it is possible to cure a cancer by removing a single area of cancer

spread. It is possible to have secondary kidney cancer removed from your:

- Lung
- Liver
- Bone (in rare circumstances)
- Brain
- Skin

These operations are all very different from each other. And will vary depending on your particular medical situation. So it is not possible for us to give full details of these operations here.

### Blocking the blood supply to the tumour

Doctors can block the main blood vessels that carry blood to the area of the kidney that has the cancer. They inject small pieces of gelatine sponge or some plastic beads. They call this arterial embolisation. It reduces the supply of oxygen and food to the cancer, and may make it shrink. This treatment may be used if you have an early stage kidney cancer but are not well enough to have either part of all of the kidney removed. This is not a cure because the cancer is not removed and there is a chance of cells breaking away in the future and spreading to other parts of the body.

### Having arterial embolisation

Embolisation is a minor operation done in the X-ray department. You stay in hospital at least overnight, so are admitted to a ward. In the X-ray department, you will be asked to lie on the X-ray table. Then you will be given a medicine to make you sleepy. The doctor will give you some local anaesthetic and then put a long tube (a catheter) into the main blood vessel in your groin. The doctor feeds the catheter up through your blood vessels until it is in exactly the right place and injects the sponges or beads to block the artery. The doctor then removes the catheter. You will have a tight dressing put on to the small wound site in your groin and you will be taken back to the ward to rest.

### After embolisation

You will need to rest for at least 4 hours. You may have some pain for a day or two following this treatment and your doctor or nurse will give you

painkillers. You may also have side effects caused by the breakdown of the kidney cancer cells. The cells can release toxins that can cause a high temperature (fever), sweats, weakness, and lack of energy for a few days. If you find this troublesome, try taking paracetamol every 6 hours until the side effects improve.

**For more information**, visit our website <http://www.cruk.org/cancerhelp>

You will find a wide range of detailed, up to date information for people affected by cancer, including a clinical trials database that you can search for trials in the UK. Our information is based on the best current scientific evidence and reviewed regularly by leading clinicians and experts in health and social care.

For answers to your questions about cancer call our Cancer Information Nurses on 0808 800 4040 9am till 5pm Monday to Friday.

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