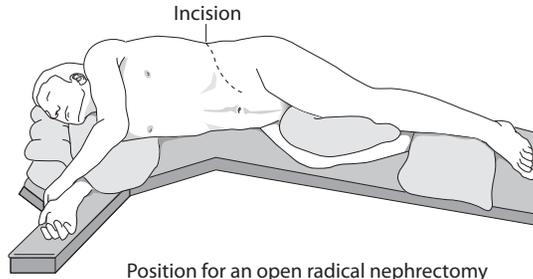


through the flank or upper abdomen (“open” radical nephrectomy).



Position for an open radical nephrectomy

Today, new techniques may allow kidney removal by laparoscopic technique. This involves a series of “keyhole” abdominal incisions through which a video camera and surgical instruments can be inserted to operate on the kidney. Once freed up, the cancerous kidney is removed through a small incision.

Laparoscopic nephrectomy is as effective as the traditional “open” nephrectomy with the advantage of a shorter hospital stay and recovery time. This technique is not appropriate for all patients or tumours and, in any case, during surgery, the surgeon may decide that “open” surgery may be safer or more effective.

Occasionally, the tumour can be removed safely while preserving the rest of the kidney, a **partial nephrectomy**. It may be appropriate for those with small kidney cancers, a single kidney or impaired kidney function. In these patients, preserving as much kidney tissue as possible may be necessary to prevent the need for dialysis. Partial nephrectomy may be more difficult technically than the traditional open nephrectomy, requiring additional preparation prior to surgery.

Newer procedures to treat some small kidney tumours while sparing healthy kidney tissue are being developed (e.g. cryoablation, radioablation).

After kidney surgery

After kidney surgery, hospitalization can be up to one week or more. Complete recovery with return to normal function may take as long as three months, although many are able to return to work by six to eight weeks. The hospital stay and recovery period after laparoscopic nephrectomy is generally shorter.

Usually, following nephrectomy, the remaining kidney provides adequate function such that one can live a normal life. Dialysis is rarely necessary.

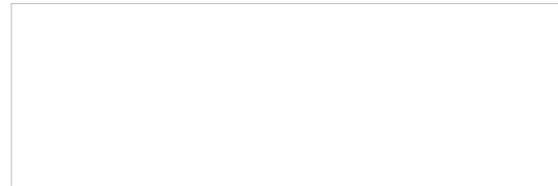
For anyone with only one kidney, it is important to prevent and treat any other health problem, such as high blood pressure or diabetes, which may damage the remaining kidney. Certain medications may affect kidney health after surgery and these should be reviewed with your doctor.

Follow-up

After surgery for kidney cancer, you should be evaluated periodically by your physician to ensure that there is no recurrence of cancer or other problem. This may involve blood tests and imaging of your lungs and abdomen. No further treatment is necessary for tumours confined to the kidney.

New drug treatments available if your cancer has spread outside of the kidney or recurs after surgery. .

Benign kidney tumours, especially cysts, are common and often do not require any treatment once their nature is clearly established. Kidney cancer frequently can be cured with surgical removal. Your urologist will help you understand your problem and, with you, plan treatment, if necessary.



36E-KTUE0107



The Canadian Urological Association produced this publication.

The information in the publication is not intended to convey medical advice or to substitute for direct consultation with a qualified medical practitioner. The Canadian Urological Association, Inc., disclaims all liability and legal responsibility howsoever caused, including negligence, for the information contained in or referenced by this brochure.

© 2007. Canadian Urological Association, Inc. All Rights Reserved.

Kidney Tumours

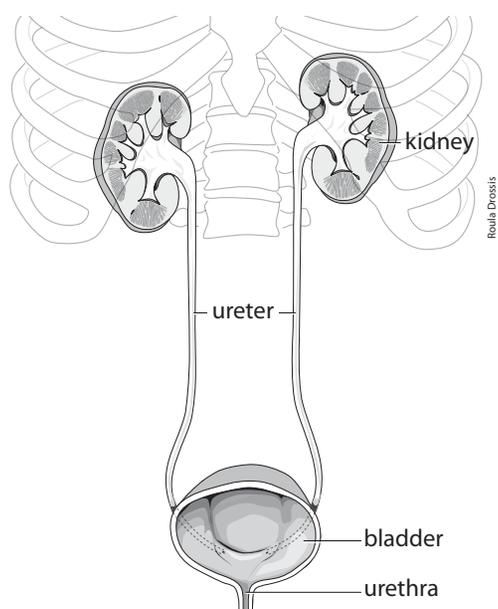


*Kidney growths are common.
Their nature will determine whether
treatment is required.*

You have been found to have a kidney “growth” or tumour. Such growths often are found incidentally during abdominal imaging by ultrasound, x-ray or computerized tomography (CT) scan obtained for the evaluation of other conditions. The nature of your kidney growth will determine whether treatment is required and what that treatment should be.

The kidneys filter your blood to eliminate excess water, waste products and impurities that are excreted in urine. They maintain your fluid and electrolyte (sodium, potassium) balance which is important in blood pressure regulation and the function of organ systems. Several hormones necessary to other bodily functions are produced by the kidneys.

Normally, a person has two kidneys located on either side of the mid-back and protected by the lower rib cage. Each kidney is wrapped in an envelope of fat within a thin, fibrous sheath called the perinephric (Gerota’s) fascia. The adrenal glands, one found on top of each kidney, produce additional hormones.



Urinary tract

When one kidney is lost to illness, injury or surgery, the other can normally take over all of its functions without affecting health on the whole. Severe kidney damage or loss, however, may require that its blood cleansing function be taken over by a dialysis machine.

Benign kidney tumours

Any abnormal growth (or “mass”) is called a tumour. This tumour can be benign (non-cancerous) or malignant (cancerous). Malignant tumours have the ability to grow into other tissues and spread to other parts of the body while benign ones do not. Without treatment, a cancerous tumour may be deadly. A benign tumour may cause trouble when its size causes discomfort or interferes with bodily functions.

The most common kidney growth is a **cyst**, a thin-walled collection of watery fluid. Kidney cysts are found frequently on imaging and, usually, cause no symptoms. “Simple” cysts are benign and require no follow-up once their nature has been defined by ultrasound or CT scan. A very large cyst producing discomfort or pain may require drainage or surgical removal.

Occasionally, a cyst may have characteristics making it suspicious for something more sinister. This “complex” cyst requires further investigation or follow-up. Rarely, your physician may suggest surgery if the nature of a suspicious cyst cannot be determined clearly.

An **angiomyolipoma** is a benign kidney tumour made up of abnormal blood vessels, muscle and fatty tissue. CT scan usually can establish its nature. An angiomyolipoma most often requires no treatment although periodic follow-up by imaging may be useful to ensure that it is not growing. If it reaches a certain size, an angiomyolipoma may be more prone to injury and bleeding. For this reason, even if non-cancerous, treatment, by surgery or interruption of its blood supply, may be appropriate.

An **oncocytoma** is a rare benign kidney tumour. Unfortunately, it cannot be distinguished reliably from kidney cancer on imaging and, therefore, surgical removal is required in many cases.

Kidney cancer

The most common malignant kidney tumour is called renal cell carcinoma (RCC). In Canada, it is the sixth most common cancer in men and the tenth most common in women. It generally occurs between the ages of 50 and 70 years. RCC may grow slowly without producing any symptoms until the tumour is quite large when it may reveal itself with blood in the urine, flank pain or a lump in the region of a kidney. Most kidney cancers are now found unexpectedly with imaging (ultrasound or CT scan) obtained for other reasons, such as gallbladder examination.

Less frequently, other malignant tumours may appear in a kidney including sarcoma, lymphoma or cancer that has spread from another organ.

Diagnosis

When a tumour is suspected, imaging by ultrasound, CT scan or magnetic resonance imaging (MRI) may help determine whether it is benign or malignant. These scans allow your doctor to clarify the tumour’s nature and whether it is contained within the kidney or, possibly, invading other tissues. Kidney cancer can spread to other organs (metastasize). Additional tests including x-rays of the lung, a bone scan and blood tests may be required to determine if it has spread. Biopsy (tissue sampling) of the tumour is rarely required as 90 percent of solid (non-cystic) tumours are cancerous (renal cell carcinoma) and a biopsy may be both risky and inaccurate.

Treatment

The treatment of kidney cancer (renal cell carcinoma) depends on a number of factors related to tumour characteristics and your health. Some tumours may grow slowly and may safely be observed without treatment. If the cancer remains confined to the kidney, the most effective treatment is surgery to remove the entire kidney within its fibrous sheath and envelope of fat (**radical nephrectomy**). The adrenal gland and lymph nodes around the kidney may also be removed depending on the stage and location of the tumour. This surgery traditionally requires an incision