

# THE CONRAD PEARSON CLINIC

UROLOGY CENTER OF THE SOUTH

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## Kidney Cancer *By Robert S. Hollabaugh, Jr. MD*

### Introduction

Kidney cancer (also called renal cell carcinoma or renal adenocarcinoma) is a disease in which malignant (cancer) cells develop in the microscopic tubules (very small tubes) of the kidney. In normal anatomy, there are two kidneys, one on each side of the backbone, above the waist. The tiny tubules in the kidneys function to filter and clean the blood, taking out waste products and making urine. The urine passes from each kidney through a long tube called the ureter into the bladder, where the urine is stored until it is passed out of the body with urination. Renal cancer is typically treated by surgical removal of the kidney. A person can live a completely normal life with only one kidney, provided that they maintain the health of the solitary kidney. The American Cancer Society predicts that there will be about 38,890 new cases of kidney cancer in the year 2006 in this country. About 12,840 people will die from this disease. Most people with this type of cancer are older, and it is very uncommon among people under age 45. Renal cell carcinoma, which originates in the functioning tubules of the kidney is the most common variety of kidney cancer, but other types of cancer can develop in the kidney system. Cancer that originates in the drainage system of the kidney (ureters or the renal pelvis) is different from renal cell cancer, and is treated with different considerations.

### Causes

We do not yet know exactly what causes kidney cancer, but we do know that certain risk factors are linked to the disease. A risk factor is anything that increases a person's chance of getting a disease such as cancer. Different cancers have different risk factors. Some risk factors are under our control, while others are not. Having a risk factor, or even several, does not necessarily mean that a person will get the disease. The following are risk factors for renal cell carcinoma.

#### SMOKING

Cigarette smoking increases the risk of getting kidney cancer by about 40%. This risk drops some if you stop smoking.

#### WEIGHT

An obese person has a much higher risk of getting kidney cancer.

#### EXERCISE

Several studies have found that people who are not very active are more likely to get kidney cancer than people who exercise regularly.

#### FAMILY HISTORY

People with family members who have kidney cancer (especially a brother or sister) have a much higher chance of getting the disease. Some people inherit a genetic tendency to get kidney cancer.

### HIGH BLOOD PRESSURE

This also increases the risk. People with high blood pressure are often treated with drugs, so it is hard to tell if the higher risk is caused by the drugs or the high blood pressure itself.

### MEDICINES

A once popular pain-reliever (phenacetin) has been linked to kidney cancer. Because this medicine has not been used in the United States for over 20 years, it no longer appears to be a major risk factor. Some drugs used to treat high blood pressure and certain heart problems have also been linked to kidney cancer. It's not clear whether the higher risk is caused by the drugs or the disease. But people who need these drugs should take them.

### KIDNEY DISEASE

People with advanced kidney disease who need to be on dialysis have a higher risk of kidney cancer. Dialysis is a treatment used to remove toxins from the body of people whose kidneys are not working.

### GENDER

Kidney cancer is found about twice as often among men as among women. This could be because men are more likely to be smokers and to be exposed to cancer-causing chemicals at work.

Preventive measures to lower the risk of renal cancer involve stopping smoking, controlling high blood pressure, staying at a healthy weight, and eating plenty of fruits and vegetables.

## Diagnosis

In past decades, kidney cancer was often found at a late stage because it only begins to cause symptoms after it has become quite large. Since the kidneys are deep inside the body, there is no way to see or feel small tumors during a physical exam, and there are no simple screening tests to find kidney cancers. Pain, nausea, a mass in the belly or other symptoms that might otherwise prompt a visit to the doctor usually arise only after the cancer has been there for some time. In today's world of medicine, kidney cancer is found at an earlier stage because of the widespread availability of CT scans, MRI scans, and ultrasounds. When patients have unexplained blood in the urine, a CT scan is usually obtained as part of the evaluation, which is extremely reliable in detecting kidney cancers, even tiny ones. In addition to cases where the cancer is identified by specifically looking for it, many cases of kidney cancer are found "incidentally," meaning that the cancer is found "by accident" during tests for some other illness such as gallbladder disease. Ultrasound and CT scans are commonly used in evaluation of other medical problems, and they "incidentally" image the kidneys as part of the overall testing. Patients often comment that they went to the hospital for one problem and found out about another. While it is never good news to find out that you have a cancer, it is fortuitous in these cases as it is usually detected at a very early stage. The survival rate for kidney cancer found "incidentally" or at a very early stage is extremely high (greater than 90% cure rate).

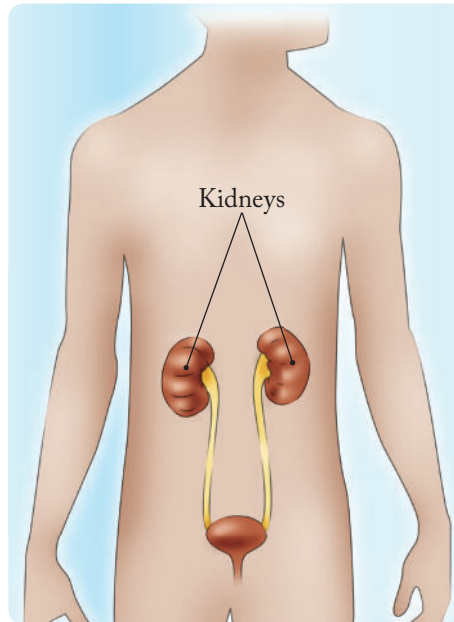
Patients often ask if a biopsy is needed to confirm the cancer before treatment. In most cases, the appearance of the tumor on CT scan is conclusive and no biopsy is needed. In rare cases, a biopsy may be recommended, especially if there is only one kidney, or if there is suspicion of other types of cancer.

## Treatment

Surgery is the main treatment for renal cell cancer. The chances of surviving kidney cancer without having surgery are poor. Depending on the type and stage, you might have one of the following types of surgery. While medical innovation continues to

improve surgical outcomes, many patients still avoid seeing the doctor because the prospect of surgery is frightening. People dread not only the operation itself but also

### ANATOMY



the recovery period. While radical surgery is sometimes necessary, many cases can be managed using minimally invasive surgical techniques, which provide real patient benefits of less pain and quicker recovery without compromising cancer control. At the Conrad Pearson Clinic we utilize the latest worldwide advances to manage urologic cancers here in the Mid-South.

### RADICAL NEPHRECTOMY

In this operation, the whole kidney, the adrenal gland (the gland that "sits" on top of the kidney), and the fatty tissue surrounding the kidney are removed. Nearby lymph nodes are sometimes removed as well (regional lymphadenectomy). Traditionally, renal cancer has been managed by this type of surgery. Standard removal of a kidney (nephrectomy) requires a large skin incision under the ribs in order to expose the deep location of the kidney. The operation is done under general anesthesia and usually takes about 2 hours. Following this type of surgery, patients can expect to be hospitalized for at least 3 or 4 days, and have an additional 6 weeks of strict limitations on lifting and exercise.

### PARTIAL NEPHRECTOMY

The surgeon removes only the portion of the kidney where the cancer is located, while the rest of the kidney is left alone. This has long been a consideration if your cancer was in both kidneys or if you had only one kidney. In today's world of medicine, partial nephrectomy is a standard consideration for almost all renal tumors. The exact location, tumor size, and relation to the kidney's blood supply are factors that determine if partial nephrectomy is the best option for a particular case. This operation is also done under general anesthesia and usually takes about 3 hours. Following partial nephrectomy, patients can expect to be hospitalized for at least 3 or 4 days, and have an additional 6 weeks of strict limitations on lifting and exercise.

### LAPAROSCOPIC SURGERY (RADICAL OR PARTIAL LAPAROSCOPIC NEPHRECTOMY)

In this method for removing kidney tumors, the operation is done through small incisions. The medical term for this approach is laparoscopic nephrectomy. Laparoscopic surgery first gained favor in the late 1980's when the technology was used for gallbladder removal. Since then laparoscopic techniques have been safely applied to many other types of surgery, including removal of the colon, appendix, spleen, prostate, pancreas, and kidney. The laparoscopic technique involves placing 3 or 4 small ports, called trocars, through the patient's skin and into the abdomen. Small instruments inserted through the ports are then used to perform the operation. A small camera inserted to view the area helps the surgeon perform the procedure. The actual process of removing the organ is the same, but the laparoscopic approach is much less invasive than open surgical exploration. Not all tumors can be removed laparoscopically. The most challenging situations involve large tumors where the anatomy is distorted. With any laparoscopic case, if it is determined to be too dangerous during the surgery, the case is converted to an open exploration. This rarely is necessary, but is always a possibility. The advantages of laparoscopy include a shorter hospital stay, faster recovery, and less pain afterwards. Patients often leave the hospital one or two days following surgery, and the

drastically smaller incisions that are used for the laparoscopic approach are much less painful. Recovery is quicker and patients can usually resume all activities in just a few weeks.

#### CRYOSURGERY (ALSO CALLED CRYOTHERAPY OF THE KIDNEY):

Using laparoscopic technique, the kidney tumor is located, and then a small freezing probe can be inserted into the tumor. The freezing process kills the cancer cells, and then the probe is removed. The surrounding tissue of the kidney remains healthy. This technique is invaluable, especially in cancer cases where preservation of the rest of the kidney is critically needed. In decades past, surgeons had no reliable way to remove or treat just the portion of the kidney that was cancerous, and so the whole kidney was removed just to be safe. Now, armed with all of the most advanced technology of laparoscopy and

cryotherapy, the Conrad Pearson Clinic can provide state-of-the-art treatment for even the most complex cases of renal carcinoma. Not all kidney tumors are good candidates for freeze therapy. Cryotherapy of the kidney is an option for tumors less than 4 centimeters in size. Also, the tumor needs to be in a certain location to be able to reach it reliably.

#### REMOVAL OF METASTASES

Sometimes surgery is done to remove cancer that has spread. This can help relieve pain or other symptoms even though it does not usually help patients live longer. It is most often done if there are only a few tumors that can be removed easily.

Some people can't have surgery because of poor health (heart or lung problems, for example). While surgery is usually the best option, nonsurgical treatments like radiation or chemotherapy may be the only realistic or safe choices for treatment. Radiation therapy

involves treatment with high-energy rays (x-rays) to kill or shrink cancer cells. External radiation aims radiation from outside the body at the cancer. In some cases, it is used merely to ease symptoms such as pain or bleeding. Overall, kidney cancer does not respond well to radiation. Side effects of radiation can include nausea, diarrhea, tiredness, and mild skin changes that look like sunburn.

Chemotherapy is the use of anticancer drugs injected into a vein or given as a pill. These drugs enter the bloodstream and reach throughout the body, making the treatment useful for cancers that have spread to distant organs. Unfortunately, kidney cancer does not usually respond well to chemotherapy, and thus it is rarely recommended. Newer chemotherapy agents are being developed that hopefully will offer better results.

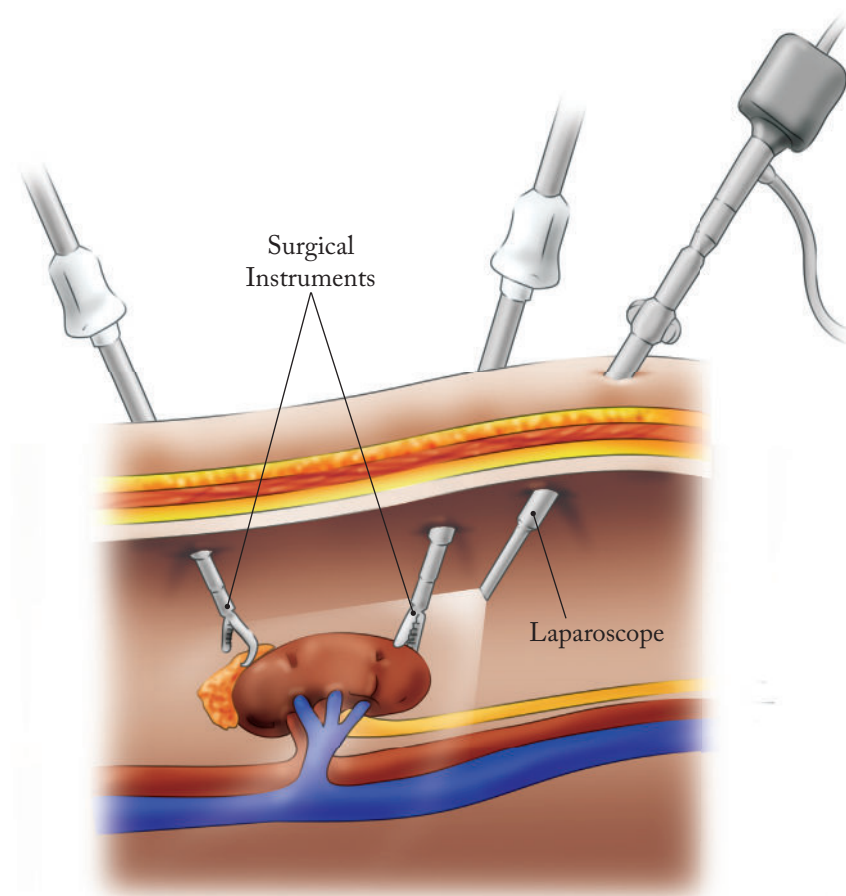
Because conventional chemotherapy for kidney cancer does not work very well, doctors are looking at a newer approach called biologic therapy, or immunomodulation. This is treatment that boosts the body's own defense system to help fight off or destroy cancer cells. There are several different kinds of biologic therapy used to treat renal cell cancer. Drugs called cytokines have become one of the standard treatments for kidney cancer that has spread. For a small number of patients, cytokines can shrink the cancer to less than half its original size. The side effects of immunotherapy can be severe and, rarely, fatal. For this reason, only doctors experienced in the use of cytokines should give this treatment to people with kidney cancer.

### Post- Operative Instructions

#### INCISIONS

After any of the surgeries mentioned above, there will be a dressing over the incision, possibly even several small incisions. Sometimes your doctor will have removed the dressing even before you leave the hospital. If not, the gauze or dressing can be removed 3-4 days after surgery. At that time the wound can stay open to the air. For a few days, the wound may continue to weep fluid or spot blood and fresh gauze can be used until this stops. Unless specifically instructed, do not put creams or ointments on the incision. Clean the wound by letting shower water and soap rinse over it. Do not scrub the incision as this will irritate

#### LAPAROSCOPIC NEPHRECTOMY





it. Do not soak in bath water for at least 7 days, as soaking will slow the wound healing process. In some cases, stainless steel staples are used instead of skin stitches. These usually are removed in the office 7 – 10 days following surgery. The staple removal is virtually painless.

## DIET

When you go home after surgery, you may resume eating whatever you like. In general, however, you may want to avoid spicy foods and caffeine beverages early in the recovery. Try to drink plenty of water (6 eight ounce glasses each day) to maintain good urine production.

## ACTIVITY

In all cases it is important to get up out of the bed and leisurely stroll around the house two or three times minimum each day in the weeks following surgery. This protects the lungs and circulation. Laying in bed constantly may feel good, but is a major risk for pneumonia and blood clots following surgery. If you have a large incision (more than 6 inches) then you need to avoid any heavy lifting for 6 weeks. Try not to lift anything heavier than a phone book, as the strain will only aggravate healing and make things more painful. With large incisions, heavy lifting may cause the wound to separate or lead to a hernia development. Because of this, heavy lifting, recreational exercising and sports should be avoided for 6 weeks. With small incisions (laparoscopic surgery), the incisions may be sore but patients can resume activities as tolerated after 2 weeks. There is much less risk of hernia with smaller incisions.

## DRIVING

You should avoid driving until 2 weeks after surgery. You may feel well enough to drive, but your reflexes are much slower. Because you won't react as quickly, the risk of an auto accident is higher. Car wrecks only complicate surgery and healing. Let someone else do the driving for two weeks, unless it is an absolute emergency.

## CONSTIPATION

Narcotics and anesthesia medications constipate people. It is not unusual to have no bowel movement for 3-5 days following surgery. Conservative measures like natural food laxatives (prunes) or Metamucil usually work. If not, take 30 cc of mineral oil daily. It is fine to try milk of magnesia or other over the counter laxatives as well. Be cautious; too much laxative will likely result in several days of diarrhea. If the problem is ongoing, ask your doctor. Remember, the narcotic pain medication that you are taking is making the constipation worse.

## COMPLICATIONS

The most worrisome complication following major urologic surgery is the development of blood clots. These may form in the leg and, if they break loose, can pass to the lungs. This is called a PULMONARY EMBOLUS (PE) and is a life-threatening condition. Signs of clots in the leg include one-sided leg pain or swelling (although not everyone has this). Signs of pulmonary embolus include sudden shortness of breath, pain on deep breathing, sudden weakness or fainting, and coughing up blood.

If you think that you have any of these symptoms, go the Emergency Room or contact your doctor immediately.

The best way to prevent clots or a PE is to remain active by walking, wearing compressive stockings (the white tight hose from the hospital), and avoid sitting or laying for long periods.

## Outcomes

Renal cell cancer is highly curable if it is diagnosed and treated when still localized to the kidney. The probability of cure is directly related to the stage or degree of tumor dissemination. When the cancer is surgically removed, cure rates exceed 90%. Even when regional lymphatics or blood vessels are

involved with tumor, a significant number of patients can achieve prolonged survival and probable cure. When distant metastases are present, disease-free survival is poor; however, occasional selected patients will survive after surgical resection of all known tumor. Late tumor recurrence many years after initial treatment occasionally occurs, so regular follow-up for many years with labwork and CT scans is important.

## Possible Signs and Symptoms of Kidney Cancer Include:

- » Blood in the urine
- » Low back pain on one side (not from an injury)
- » A mass or lump in the belly
- » Tiredness
- » Weight loss, if you are not trying to lose weight
- » Fever that doesn't go away after a few weeks and that is not from a cold, the flu, or other infection
- » Swelling of ankles and legs

Talk to your doctor if you notice any of these problems. They are usually caused by something less serious than kidney cancer, but only your doctor can tell for sure. If there is any reason to suspect kidney cancer, the doctor will take your medical history and do a physical exam and then decide if additional tests need to be done.

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