KIDNEY CANCER

Kidney Cancer Patient Guide

Urology Care FOUNDATION™
The Official Foundation of the American Urological Association

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Urology Care Foundation Kidney & Adrenal Health Committee

Mike's Story

**Name has been changed.*

Mike* is the Chief Deputy Tax Commissioner in Atlanta, Georgia. He was diagnosed with a stage 2 renal tumor. Mike had an aortic aneurysm and was having a follow-up CT scan when his renal tumor was found. At the time, Mike said he did not have any symptoms. Unless his tumor had gotten bigger or more advanced, Mike's doctor said he might never have had symptoms.

Mike had an open partial nephrectomy to treat his kidney cancer. His doctor said it would be the best way to save his kidney function. Mike says he has been fortunate because he has not had any side effects from his treatment. "I was able to get back to work three weeks later," he says.

Mike says he has been seeing his doctor regularly and is looking forward to a good prognosis. "I recommend anyone dealing with kidney cancer to have frank talks with their health care team about what treatment options may work best," he urges.

Introduction

Your doctor has just given you the news there is a growth in your kidney. What is it and what does this mean for you? Our kidneys' main job is to filter our blood. Sometimes we develop masses (growths or tumors) inside our kidneys. Some of these growths are cancerous but many are not. You must have your mass checked out to learn if it is cancerous or not.

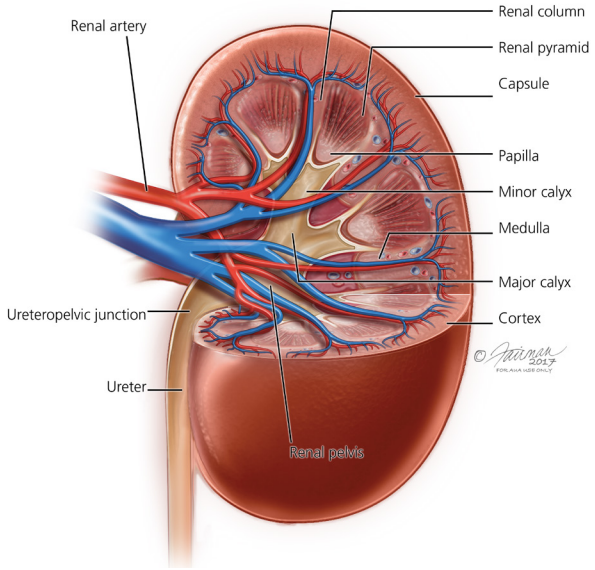
There are many different options for treatment. Often there are even more choices if your cancer is found early. Your medical team is there to help you learn more about the pros and cons of treatments. This guide will tell you about kidney cancer and the steps you can take if a mass forms in your body.

GET THE FACTS

What is the Purpose of our Kidneys?

Our kidneys serve many purposes, but they mainly do the following:

- Detoxify (clean) our blood
- Balance fluids
- Maintain electrolyte levels (e.g., sodium, potassium, calcium, magnesium, acid)
- Remove waste (as urine)
- Make hormones that help keep bones strong, blood pressure stable and build red blood cells



What is a Kidney Mass?

A ***tumor****, or mass, is an abnormal growth in the body. A kidney ***mass***, or tumor, is an abnormal growth in the kidney. Some kidney masses are ***benign*** (not cancerous) and some are ***malignant*** (cancerous).

One in four kidney masses less than 4 cm are benign. Smaller masses are more likely to be benign. Larger masses are more likely to be cancerous. Some tumors may grow slowly while some can be faster growing – or more aggressive. Aggressive tumors may form, grow and spread very quickly.

Most kidney growths (about 40%) are small, ***localized masses***. Localized means that the tumor has not spread from where it first started. The main classes of tumors are:

- **Renal cell carcinomas (RCC).** These are the most common malignant kidney tumors. They are found in the part of the kidney where the filtering occurs. RCC may form as a single tumor within a kidney or as two or more tumors in one kidney.
- **Benign kidney tumors.** About 20% of tumors removed from kidneys are benign. There are about nine named tumors in this class. Some can grow quite large but they are almost always non-cancerous and do not spread to other organs.
- **Wilms tumors.** Wilms tumors almost always occur in children and are rarely found in adults.

What do we know about Kidney Cancer?

Kidney cancer is one of the top 10 most common cancers in the United States, with more than 70,000 new cases diagnosed each year. More men than women are diagnosed with kidney cancer. Kidney cancer can be seen in anyone but is more common in African Americans, Native American and Alaskan Native people. You can get kidney cancer at any age but it is more common in older people (those greater than 75 years old). The earlier stage that kidney cancer is diagnosed, the better your chances for survival as there are more treatment options for during early stages.

All words that appear in blue and italics are explained in the glossary.

What Causes Kidney Masses?

There is no known cause for developing a kidney mass. But there are a number of things that can increase your risk for kidney tumors such as:

- Smoking
- Obesity, poor diet
- High blood pressure
- Being on kidney dialysis
- Workplace exposure to chlorinated chemicals
- Heredity, which accounts for about 4-6% of kidney cancer cases

What are the Symptoms of a Kidney Mass?

Most kidney masses have no symptoms in the early stages. If there are symptoms, they will most likely be:

- ***Hematuria*** (blood in urine)
- Flank pain between the ribs and hips
- Low back pain on one side (not caused by injury) that does not go away
- Loss of appetite
- Weight loss not caused by dieting
- Fever that is not caused by an infection and does not go away
- Anemia (low red blood cell count)

GET DIAGNOSED

Over half of kidney masses are found by chance. Often they are found during imaging for another symptom or when you see a doctor about some other problem. If your doctor thinks you may have kidney problems, they might send you to a ***urologist***. A urologist is a doctor who specializes in the urinary system.

How are Kidney Masses Diagnosed?

There are no routine laboratory tests to find kidney masses. Your health care provider may use many tests to help learn more about your kidneys. Here are some tests and procedures you might expect:

- ***Physical exam and history***
- **Basic or *complete metabolic panel (CMP)*** to check organ function
- ***Complete blood count (CBC)*** to check the blood for signs of disease
- ***Urinalysis*** to check for infection, blood and protein in urine
- **Serum creatinine levels or other kidney function tests** to check if the kidneys are getting rid of waste
- ***Ultrasound*** to get images of your kidneys
- ***CT scan*** **and** ***MRI*** to help diagnose and stage kidney masses
- ***Bone scan*** **and chest x-ray** to find out if the cancer has spread
- **Kidney mass *biopsy*** to help find out what type of tumor you have

What does Tumor Grade and Stage Mean?

A ***tumor grade*** tells how aggressive the cancer cells are in your body. A ***tumor stage*** tells how much the cancer has spread. Grades 1 through 4 show increasing severity with "1" being the lowest level and "4" the highest. A higher grade and more advanced stage usually come with larger tumor size and more aggressive tumors. Tumor size helps in assessing risk for cancer developing.

Kidney cancer is staged using the tumor node metastases (TNM) system.

The "T" in the TNM system tells us the size of the main (primary) tumor and whether it has grown into nearby areas.

- T1: Tumor 7.0 cm (about 2.8 inches) or less, confined to the kidney
  - T1a: Tumor 4.0 cm (about 1.6 inches) or less, confined to the kidney
  - T1b: Tumor 4.0-7.0 cm, confined to the kidney
- T2: Tumor greater than 7.0 cm, confined to kidney
  - T2a: Tumor greater than 7.0 cm and less than 10.0 cm, confined to the kidney
  - T2b: Tumor greater than 10 cm (about 3.9 inches), confined to the kidney
- T3: Tumor grows into major veins but not into the adrenal gland and not beyond Gerota's fascia
- T4: Tumor reaches beyond Gerota's fascia (including the adrenal gland). This is not a localized tumor.

The "N" in the TNM system tells us how much the tumor has spread to nearby (regional) ***lymph nodes***.

- N0: No regional lymph node metastasis
- N1: Metastasis in regional lymph node(s)

The "M" in the TNM system tells us about ***metastasis*** and whether the cancer has spread (metastasized) to other parts of the body. Spread is most common to the lungs, bones, liver, brain, and far off lymph nodes.

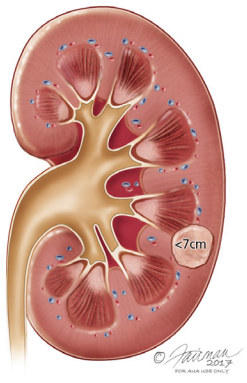
- M0: No distant metastasis
- M1: Distant metastasis

Stage I and II tumors include cancers of any size that are confined to the kidney.

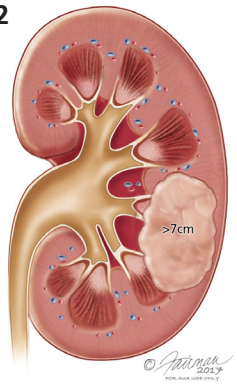
Stage III tumors are either locally invasive (T3) or involve lymph nodes (N1).

Stage IV tumors have spread beyond the kidney into organs nearby (T4) or distant metastases (M1).

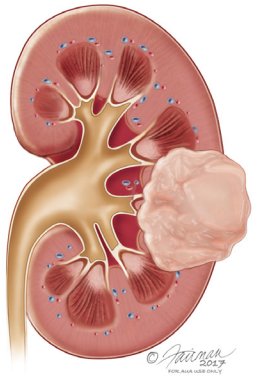
T1



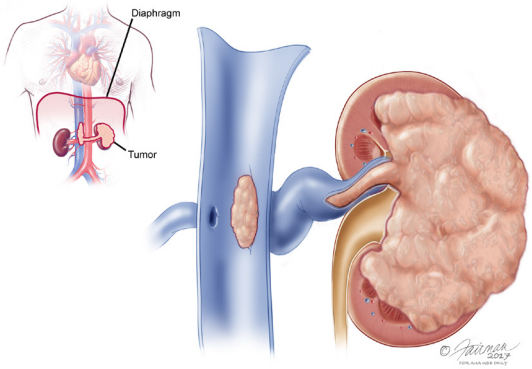
T2



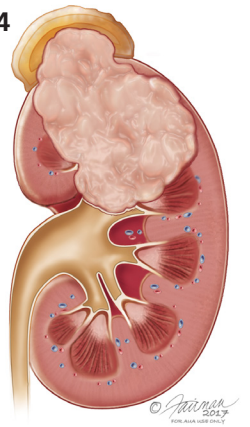
T3



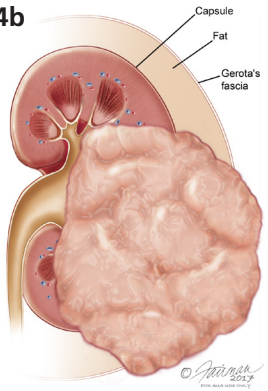
T3b



T4



T4b



GET TREATED

The main goals in treating kidney masses is to cure you of the cancer and to protect kidney function where possible. Protecting kidney function is especially important for patients with only one kidney or some other kidney disease. For some patients, surgery will never be needed. For others, surgery may be the best choice. In some instances, you may be advised to have a biopsy of the tumor to learn more about its potential aggressiveness. Then your doctor may recommend one of four treatment choices. These are:

- Active surveillance
- Ablation
- Partial nephrectomy
- Radical nephrectomy

Active Surveillance

For ***active surveillance***, your doctor will see you at intervals for tests and imaging (taking pictures of inside your body). Active surveillance is considered for small masses less than 3 cm (about 1.2 inches) in size. The goal is to prevent progression and avoid potential risks and negative effects of other treatments. Your visits will be every three, six or twelve months as necessary. You may also have chest x-rays, as well as CT scans and ultrasounds. How often you see your doctor will depend on tumor size and stage and your age and general medical condition.

Ablation

If your tumor is small (T1a, mass less than 3 cm in size), your surgeon may consider ***ablation***. Ablation destroys the tumor with extreme heat or cold. Your doctor may do a biopsy before ablation so a pathologist can look closely at the tumor cells to see if there is cancer.

Cryoablation (cold ablation) is when very cold gases are passed through a probe to destroy the tumor cells.

Radiofrequency ablation (hot ablation) is when a thin, needle-like probe is placed through the skin to reach the tumor. An electric current is passed through the tip of the probe to heat the tumor and destroy the cells.

Partial Nephrectomy

Nephrectomy means removal of the kidney. ***Partial nephrectomy*** means the doctor removes the tumor and the diseased part of the kidney but leaves the healthy part. If your tumor is at T1a stage (4 cm or less), your doctor may suggest a partial nephrectomy. A partial nephrectomy can also be done for larger tumors if the tumor appears confined and amenable to this surgical approach.

Radical Nephrectomy

During a ***radical nephrectomy***, the whole kidney is removed. This is done if your kidney tumor shows signs of becoming cancerous or is very large or aggressive. Your body can function well with one good kidney if the other is removed.

Surgery for both types of nephrectomy can often be done via ***laparoscopic surgery*** but may need to be done by traditional open surgery depending on the size and characteristics of the tumor. During laparoscopy, your surgeon makes a very small hole in your abdomen and threads a thin, lighted tube to the site to look at the kidney.

Care Management

Your health care team is likely to have several different medical professionals such as a radiologist, urologist, nephrologist, pathologist and medical oncologist. These specialists will work with you to consider all your choices and discuss the risks and benefits of treatment. Genetic counseling might also be recommended if you have a family history of kidney tumors.

Have an open and frank talk with your health care team about your treatment choices.

OTHER CONSIDERATIONS

It is of great value to stay in touch with your health care provider and keep follow-up appointments. These check-ups are important to watch for re-growth of tumors. After initial treatment, your doctor may perform many of the same tests used to diagnose the kidney mass.

A healthy lifestyle can be of value. If you use tobacco now, try to stop. Try to limit your alcohol intake and to eat a balanced diet. Exercise and try to keep your weight within recommended limits.

Questions to Ask Your Doctor

- ❒ Do I have kidney cancer?
- ❒ What is the stage and grade of my cancer and what does that mean?
- ❒ Has the mass spread anywhere else?
- ❒ What are my treatment choices?
- ❒ Which treatment should I choose, and why?
- ❒ Will I have a lot of pain? How will my pain be managed?
- ❒ Will I be cured after treatment?
- ❒ What are the chances that the mass will return after treatment?
- ❒ What risks or side effects should I expect from treatment?
- ❒ What can I do to keep my kidneys more healthy?
- ❒ What should I do to get myself ready for treatment?
- ❒ What will we do if the treatment does not work?
- ❒ Can you recommend another urologist for a second opinion?
- ❒ What more can I do to protect my health?
- ❒ How often will I need to have checkups after treatment?
- ❒ How long will I need to stay in the hospital?
- ❒ Following surgery, will I need additional treatments?

GLOSSARY

Ablation
Destroys the tumor with extreme heat or cold.

Active Surveillance
Patients are not treated initially and see their doctor at regular intervals to assess a mass for progression; this is a potential pathway for small kidney masses less than 3cm (about 1.2 inches), particularly if the patient is older or when general health is compromised to some degree.

Benign
A mass that is not cancerous.

Biopsy
A biopsy is when cells or tiny parts of an organ are removed and studied. A pathologist views the sample under a microscope. Findings can tell if the tumor started in another part of your body or if it started in the kidney. A biopsy may also tell if there is an infection such as an abscess. A biopsy may also help to determine if the mass is benign or malignant and how aggressive it might be.

Bone Scan
A test where a very small amount of a radioactive substance, called a tracer, is injected into a vein; areas where too much tracer is absorbed by the body may indicate cancer.

Complete Blood Count (CBC)
Checks the levels of blood counts in the blood stream. If amounts are higher or lower than normal, that may be a sign of disease.

Complete Metabolic Panel (CMP)
Used to evaluate organ function and check for certain conditions.

Cryoablation
A treatment to kill cancer cells with extreme cold passed through a probe to destroy the tumor.

CT Scan
A procedure that uses both x-rays and computer technology to produce detailed images of the body.

Hematuria
Blood in the urine.

Laparoscopic Surgery
A form of surgery where the surgeon passes a thin, lighted tube through a small cut in the belly to look at the organs inside the abdomen and pelvis. Today, this type of surgery is typically done robotically.

Localized Mass
A mass that is confined to one area of the organ.

Lymph Nodes
Small bean-sized collections of immune system cells.

Malignant
A mass that is cancerous.

Mass
An abnormal growth.

Metastasis
Cancer cells have broken away from where they first formed, traveled through the blood or lymph system, and formed new tumors in other parts of the body.

MRI
Magnetic resonance imaging (MRI) uses a magnetic field and radio waves to create detailed images of the organs and tissues within the body.

Nephrectomy
The removal of the kidney.

Partial Nephrectomy
The removal of part of the kidney with reconstruction of what remains.

Physical Exam and History
A health care provider checks body and asks questions about health and family; health habits, past illnesses and treatments will also be discussed.

Radical Nephrectomy
The complete removal of the kidney.

Radiofrequency Ablation
The use of radio waves to heat and destroy abnormal cells.

Tumor
An abnormal growth.

Tumor Grade
How aggressive the cancer cells appear under the microscope, which generally correlates with the behavior of the tumor.

Tumor Stage
The size of cancer and how much it has spread into nearby lymph nodes or to other parts of the body.

Ultrasound
The use of high-frequency sound waves to produce images of structures within the body.

Urinalysis
Checks for infection, blood and protein in your urine.

Urologist
A doctor who specializes in the study, diagnosis and treatment of problems of the urinary tract.

Notes

About the Urology Care Foundation

The Urology Care Foundation is the world's leading urologic foundation – and the official foundation of the American Urological Association. We provide information for those actively managing their urologic health and those ready to make health changes. Our information is based on the American Urological Association resources and is reviewed by medical experts.

To learn more, visit the Urology Care Foundation's website, **UrologyHealth.org/UrologicConditions** or go to **UrologyHealth.org/FindAUrologist** to find a doctor near you.

Disclaimer

This information is not a tool for self-diagnosis or a substitute for professional medical advice. It is not to be used or relied on for that purpose. Please talk to your urologist or health care provider about your health concerns. Always consult a health care provider before you start or stop any treatments, including medications.

For more information, visit **UrologyHealth.org/Download** or call 800-828-7866.

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Urology Care FOUNDATION™

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