

**BRAD LEIBOVICH:** Hello. My name is Brad Leibovich. I'm a urologic surgeon. I specialize in kidney cancer here at Mayo Clinic.

I'm going to speak with you today about more advanced kidney cancer. Thankfully, kidney cancer usually presents with early stage disease, meaning that patients are found with small tumors that are confined to the kidney, usually found by mistake when people get a scan, like a CAT scan, or an MRI, or an ultrasound for some other reason. These tumors are usually found without the patient having any symptoms. Unfortunately, about one third of patients show up with disease that's more advanced when we find it. Sometimes these patients will have symptoms. But many of these patients are found without symptoms as well, when another scan is obtained for some other reason.

If a patient is going to have symptoms, sometimes they'll feel a mass on the belly or on the side. Sometimes they'll have pain, but usually not. On occasion, patients will have blood in the urine or other symptoms from a kidney tumor. Patients with significantly advanced disease can have symptoms such as loss of appetite, loss of weight, and other symptoms.

If a patient is found with disease that's large, but still within the kidney at the time of diagnosis, then the expectation is still that we can cure that patient, usually with surgical therapy. The main treatment for kidney cancer, when it's found before it has spread anywhere else, is surgical removal. And there are some alternatives that our team can discuss with individual patients that are more appropriate in some circumstances than surgical removal.

Unlike other tumors, if we find a kidney cancer, and we've surgically removed it, that's usually the only treatment. That is, we remove the tumor and simply keep an eye on the patient, with more scans as time goes on, rather than using any drugs or radiation after surgery.

For those patients that have spread of disease beyond the kidney at the time that it's found, then the treatment is often more complex. Surgery is still the mainstay of treatment for these patients. We remove the main tumor. And in many cases, we remove the areas of spread. For areas that can't be removed, we often talk about additional treatment.

This is often in the form of drug therapy. But the drugs we use are very different from standard chemotherapy drugs, that are more commonly used for other types of cancer. In some cases, we use radiation therapy or a combination of surgery, radiation therapy, and drug therapy.

One of the reasons that I was interested in kidney cancer and this specialty in the first place is the fact that the expectation is that we can cure people or extend their life significantly. And that we can do this without having any significant impact on the patient's quality of life. Most patients have an excellent quality of life, and if not cure, a significant extension of life with our treatments.

The other reason that I really enjoy taking care of kidney cancer patients here at Mayo Clinic is our multidisciplinary approach to managing patients with kidney cancer. We have an extensive team, that comprises not only me and my colleagues in urology, but colleagues in radiation oncology, medical oncology, pathology, diagnostic radiology, interventional radiology. We also take advantage of our surgical colleagues in other specialties, such as vascular surgery, hepatobiliary surgery, other general surgeons, colorectal surgeons, thoracic surgeons, sometimes cardiac surgeons.

This multidisciplinary approach with multiple team members participating in a patient's care allows us to tackle some things that might not be considered surgical options elsewhere. In addition to being able to tackle complex surgeries, we're able to remove areas of spread of disease, tackle kidney cancer if it has grown through the vein, sometimes up through the main vein that drains the kidney, even into the heart. When we take care of patients with these complex surgical problems, our outcomes remain excellent thanks to the multidisciplinary approach and the utility of many different surgeons taking care of their area of expertise in these operations.

The combination of the surgical approach, and medical oncology, and radiation oncology input allows us to offer patients significant extension of life and in some circumstances cure, even with very advanced disease. And we expect that we're able to do this while maintaining excellent quality of life.

If we're able to completely remove all disease in a kidney cancer patient, then there's no further therapy after surgery. We simply keep an eye on patients. If we're not able to completely remove everything, that's when our colleagues take over from medical oncology and radiation oncology. In some circumstances, patients are eligible for clinical trials, either clinical trials of additional therapy after what we think is complete surgical removal in a case where we're worried we could see recurrent disease, or surgical clinical trials, or clinical trials of drug therapies that are not yet approved by the FDA for patients with more advanced

disease.

We have an extensive research program. We follow not only our clinical outcomes, but we have research in all areas of disease, from very early disease, to improved surgical techniques, to the treatment of advanced disease with novel drug therapies.