Patricia Rios:

Our topic for today's is understanding ureteroenteric stricture disease. And again, this is part of our Bladder Cancer Advocacy Network Patient Insight Webinar Series. And for those of you that don't me, I'm Patricia Rios the director of education and advocacy.

So this is a very important and very interesting topic. We're grateful to Dr. Lee for returning back to help us understand what this disease is. How it's formed, and how it's treated. So a little bit of background on Dr. Lee. Dr. Lee is a reconstructive urologist at Northwestern University. He completed his general surgery internship and urology residency at Temple University. He then went on to complete a fellowship in advanced robotic urology, oncology, and reconstruction at Temple University and a fellowship in urologic trauma and reconstruction at the University of Washington.

Dr. Lee, as many of you learned last time, when he was here with us, has a particular interest in robotic reconstruction of the upper and lower urinary tract. After Dr. Lee's presentation, you're going to hear from one of Dr. Lee's patient. So we are grateful today that we have here Anthony Vacek, who is from Chicago, Illinois, but goes by the name of Tony. And Tony will be talking about his experience with this particular disease. Again, known as ureteroenteric stricture disease. He will talk about his experience with the surgery and rehabilitation, and how long it's been since his surgery.

So I look forward to hearing more from Tony. So stay tuned after Dr. Lee's presentation to hear that. After we hear from Tony, we'll have a Q&A session. So as a reminder, please enter your questions throughout the webinar, and we'll try to get to as many of those during that dedicated session. So with that, I'm going to hand over the screen to Dr. Lee to talk a little bit more about this condition. Again, why it forms and how it's being treated. So with that, Dr. Lee,

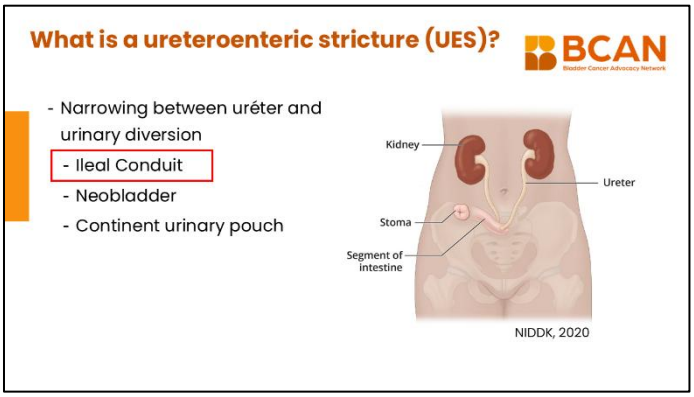
thank you so much again for joining us. We look forward to learning and to spending the next hour with you. And with that, the screen is all yours.

Dr. Ziho Lee:

Awesome. Well, thanks again for having me on. I know I said this last time, but I really appreciate these opportunities to interface directly with the members of BCAN. It's always nice to answer questions in a little bit different of a setting than the clinical office or at conferences, where I'm talking with various other physicians. And so I really appreciate this opportunity. Happy to answer any type of questions that anyone may have.

All right, perfect. So today I'm going to talk about something called ureteroenteric stricture disease. I know it's a mouthful, but essentially what it is, is scar tissue that forms where the ureter meets the ileal ... Or any urinary diversion, and I'll go in through all that stuff. Again, I know the Q&A box is open, so feel free to put up any questions and I will try my best to answer all of them.

Dr. Ziho Lee:

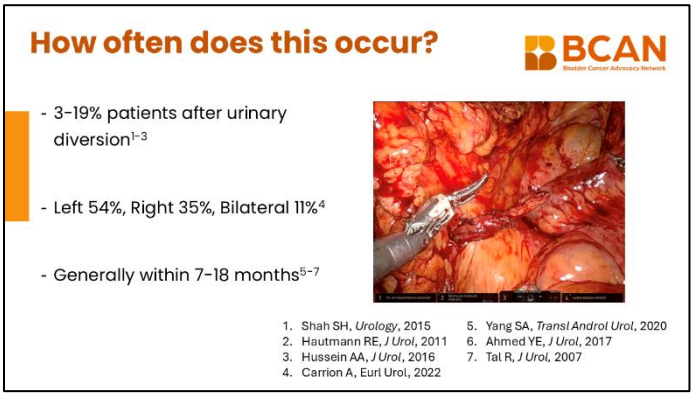


So what is a ureteroenteric stricture? Like I was saying, it's narrowing between the ureter and your urinary diversion. So when we look at human anatomy, most patients have two kidneys, one on each side, as you can see here on the screen, and there's this long tube called the ureter. Essentially, the job of that tube is to transport urine down into your urinary diversion. And so there's three major kinds. We have the ileal conduit, which is the most common, but you could also have a neobladder or a continent urinary pouch.

And so essentially what we're talking about is scar tissue right here between where the ureter has been connected to your urinary diversion. And in most cases, it's going to be your ileal conduit. And so that's what I'm going to be focusing on today.

Dr. Ziho Lee:

So how often does this occur? The literature says 3 to 19%. I think in most series, it's about 10% of cases after any urinary diversion, whether that's an ileal conduit, a neobladder, or Indiana pouch. You can have these scar tissues that form after surgery. Most of these, as you can see, 54% will occur on the left side. So why does it occur mostly on the left side? Well, this is an image of a robotic. This is a surgery that I was performing where ...

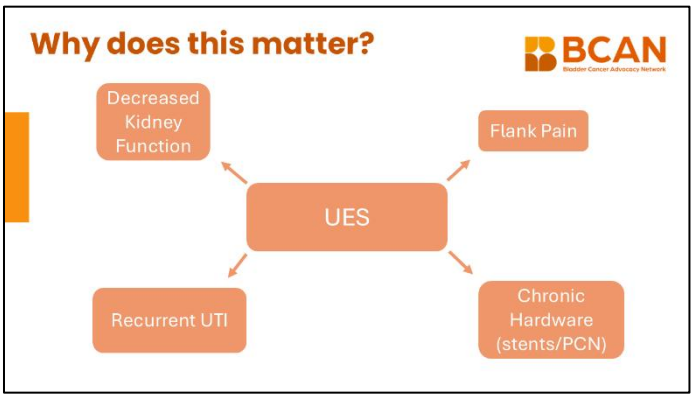


This is the ureter. It's a small straw that has been cut. And essentially what the left side has to do is you have to swing the left ureter from the left to the right side through essentially the blood supply of the colon. And so the reason why most of these occur on the left side is because on the left side, you need to perform a little bit more aggressive dissection, and that literally needs to be swung through. We call this the mesentery or the blood supply of the colon. And because you're doing that, it can be stretched a little bit more and you can cause a little bit more trauma to the area.

What I can tell you about ureteral surgery, a big part of my practice is on ureteral reconstruction. We do a lot of ureteral reconstruction here at Northwestern, but what I can tell you is the ureter is an extremely fragile organ, and so it's very easily damaged. It's a structure that you need to operate it on without actually touching it directly. And so it's a very fragile organ that can get scarred up, which is why this ureteroenteric stricture problem can happen.

Usually these strictures happen within 7 to 18 months of surgery. And the reason is because ... What happens is that after your connection, you can have a little bit of ischemia or decreased blood supply to the area that causes some scar. And so today I really thought I'd focus on an overview of what this is, and then also take you guys through the nitty-gritty of surgical reconstructions and how we've changed the space here at Northwestern.

Dr. Ziho Lee:



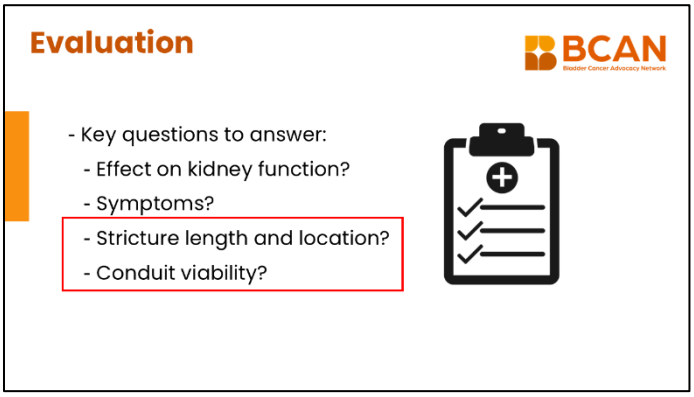
So why does this matter? Why is this a problem for people? Well, you ureteroenteric stricture, first of all, can cause flank pain. You can have pain on your side. So when the kidneys get blocked, sometimes what can happen is you can have pain on your side that can be an achy type pain that can cause issues with patients. And so that's number one. Number two, a lot of these patients that are referred to see me, they've had a lot of chronic hardware. So they've had stents on the inside, or sometimes they come in with a tube on the outside. It's called a nephrostomy tube, where the urine drains from the side and into a bag, not your stoma bag, but a bag on your back that helps drain the kidney.

These chronic drains can really be a problem because it can cause infections, you need frequent surgeries, and it's just not really comfortable for patients. And so I would say the vast majority of patients that I see come with these chronic stents or nephrostomy tubes. It can also cause recurrent urinary tract infections. Patients with any urinary diversion, you are at a higher risk for urinary tract infections after the surgery. But in the case, when you have a stricture, it can cause more frequent infections. Why? Well, you have hardware, you have abnormal anatomy, the urine's having a hard time getting down. And so these patients are at higher risk for infections.

Most significantly, these strictures or scar tissue formation can also cause decrease in kidney function. This is one of the most common reasons why I operate on patients. So patients who have blockage of your kidney from this scar tissue, it causes irreversible renal function loss or kidney function loss that you can't get back. And so for me, in my practice, that's one of the most common reasons I operate is because I don't want patients' kidneys to get worse.

Dr. Ziho Lee:

So when I do evaluation of patients with this that are referred to me, what are the key questions I like to answer? Number one is, how is it affecting the kidney? Is the patient going to be safe? The kidneys, as we know, is a vital organ for survival. And so for me, as a reconstructive urologist, who can help patients with this condition. I really want to preserve the kidney function as much as possible.

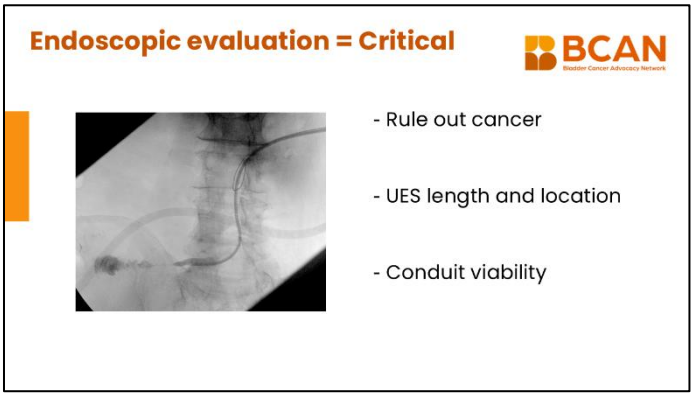


Also, is the patient having symptoms? Are they having pain? Are they having infections? Next, I need to know, how long is the scar tissue? Is it on the left side? Is it on the right side? Is it on both sides? And so I really need to answer that question. Lastly, I need to answer, how is the urinary diversion? Is the ileal conduit narrow? Does that need to be fixed too? Is the neobladder still okay? Does the patient need to switch to an ileal conduit? So these are all questions that I'm trying to answer before undergoing reconstructive surgery.

And so what I really focus on from my standpoint, from a surgical and treatment standpoint is, how long is the area of narrowing, where it is? And then also, is the conduit or urinary diversion, is it viable? Are we going to be able to keep that or do I need to make a new one?

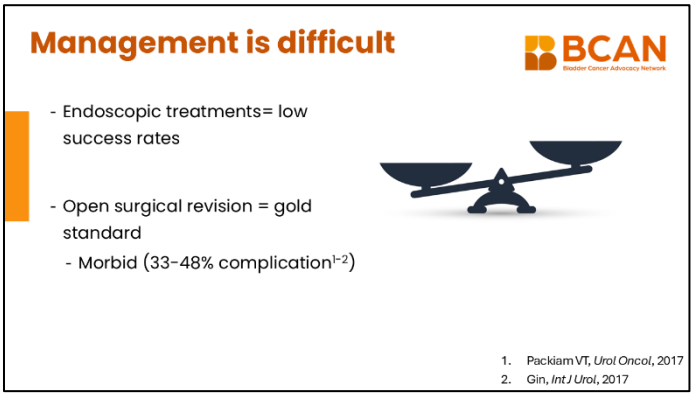
Dr. Ziho Lee:

So this is a very common picture. So I take all my patients in for ... I call this the diagnostic procedure, where patients come to the operating room with me, we have them under sedation, and I use X-rays and cameras to take pictures.



So what you're seeing here is this thick tubular structure here, this is actually a camera. It's a small camera called a ureteroscope. I put this through the back, through a small hole. We drive through the kidney, down the ureter, and you can see here the tube gets from this thick appearance to ... You see this narrow appearance. So this narrowing right here, this is the stricture or the scar tissue. If you imagine in the cartoons, you have this hose and then someone is stepping on that hose. That's what I oftentimes tell my patients. And then this thicker area here, this is an ileal conduit. So this is a nice robust ileal conduit. This little area here, this narrowing, this is the scar that I need to fix.

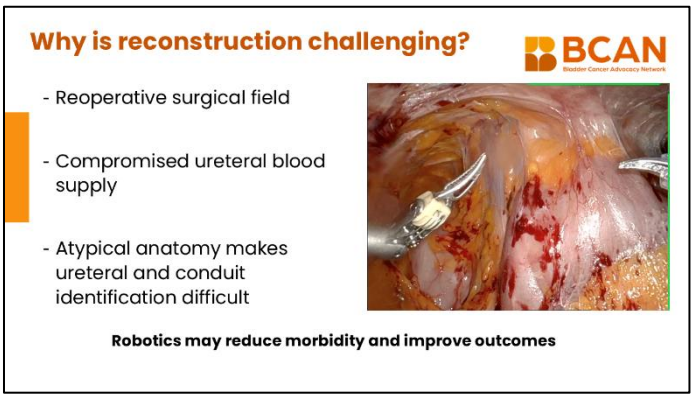
Dr. Ziho Lee:



So management of this is very difficult. A lot of times patients are recommended to dilate the area or balloon, try to dilate the area. In my experience, this is really limited in terms of success rate. I would say maybe 20, 30% success rate over long-term. So in my practice, I don't even offer endoscopic evaluation. Oftentimes when patients are referred to me, they've had endoscopic or these minimally invasive procedures, like dilation or making a little nick into the tube. They've had two or three of these procedures already.

The gold standard treatment for this is where you make a large incision, so you make a cut, opening the mid-portion of your belly, and you do open surgery to repair it. However, it is a very morbid surgery. Why? And we'll go into that in a little bit, but the complication rate is almost 50% in these patients. So it's a pretty morbid operation because you're making this big cut.

Dr. Ziho Lee:



So why is reconstruction challenging? So this is an image of me doing the surgery robotically through five small dime size holes. You can see here there's scar tissue everywhere. This is a piece of intestine, piece of intestine, but because this patient had had prior surgery, like the cystectomy and the conduit that the patient had before. There's a lot of scar tissue and that makes surgery very complex. It increases the risk for injury.

So why is it challenging? Why is reconstruction challenging? And why is it not really performed at many institutions? Well, it's reoperative. I'm going back in where someone had previously done the surgery. Additionally, I told you guys before that the ureter is very fragile. Someone's already operated on this ureter and now it's scarred up likely because an issue of blood supply. And now I'm expected to go back in there, where it's already compromised and try to fix it. And so that makes surgery a lot more high risk, in that I need to preserve and try to help this ureter with its blood supply.

Lastly, there's atypical anatomy. So I'm not usually the person who does the cystectomies, while I do a fair number of them. I don't do them for cancer. When patients are referred to me, they're referred from all over the United States. I have patients that travel. I think last year we

operated on patients from about 40 states, but the atypical anatomy makes it difficult because everyone has a slightly different way of doing it. Maybe they cut the ureters up higher, maybe they left it lower. So I got to go in and figure out what was done before I can go and repair everything.