

urologic

ERIK P. CASTLE: Hi, I'm Erik Castle. I'm a urologist here at Mayo Clinic in Arizona, and my position is Associate Professor of Urology. My area of focus is urologic oncology, and one of my areas of expertise within that is robot-assisted surgery. So bladder cancer is the fifth most common malignancy, depending on gender.

MITCHELL R. HUMPHREYS: Hello, I'm Dr. Humphries. I'm one of the urologists at Mayo Clinic Arizona specializing in endourology, minimally-invasive surgical techniques. And most often, when we talk about the surgical therapy, that entails the kind of urinary diversion we're going to be performing-- whether it's an ileal conduit urinary diversion, which I basically describe to patients as a low-maintenance option, versus a continent catheterizable pouch, or a way of internally storing urine, versus a neobladder, which is another internal way of storing urine where they use their own mechanisms to void and empty their neobladder.

ERIK P. CASTLE: Within the Mayo system, it's approximately no more than 30% or 40% of patients will get neobladders.

MITCHELL R. HUMPHREYS: The ones that wouldn't be is if their disease extends to the urethra where we would then reconnect the urinary system up. They wouldn't be a candidate for that neobladder. Or if they had a very extensive disease that may require additional therapy.

ERIK P. CASTLE: We looked at what our hospital stay was for open cystectomy, and the average-- so the mean-- was a 10-day hospital stay. When we started with robot-assisted surgery for invasive bladder cancer, we found that that hospital stay dropped down to five days. So it was pretty significant.

Their position, just like a robot-assisted radical prostatectomy--

It all started with prostate surgery in early 2002. Still, the vast majority of cystectomies performed in the United States and worldwide are done open. That's considered the gold standard, or the standard of care, and has been around for a long, long time. The goal is to maintain the principles of oncologic surgery for bladder cancer that we do open. The operation from skin to skin, incision to completing the operation, takes about 4 and 1/2 to five hours.

Let's do the lymph nodes. So go like this. Push over.

Removing lymph nodes in radical cystectomy patients is key to achieving cure in a variety of patients that maybe can't get systemic therapy.

Yeah, take it.

And in 30% to 40% of patients that have lymph nodes that are positive, surgery alone cures them. So it's very important to do an adequate lymph node removal. So we do that first. And that takes about an hour to an hour and a half to really do a very extensive dissection. We identify the lymph nodes that we're going to remove. And those specific lymph nodes are the internal iliac lymph nodes, the obturator lymph nodes, the external iliac lymph nodes, and that's considered a standard lymph node dissection. Most commonly, we do an extended lymph node dissection, which is where we extend the dissection more proximal, and we do the common iliac lymph nodes and presacral lymph nodes. And those are clipped proximally and distally to control lymphatic drainage.

The average blood loss when we look at different series of radical cystectomy or radical bladder removal across the country can be as high as 1,000 milliliters, whereas the average blood loss for robotically-removed bladder is as low as 200 to 250 milliliters. Probably the biggest thing is that we are seeing parts of the body that we never saw open. The pelvis is a very small space. It can be a real challenge to see all the blood supply to the bladder, small little attachments under the bladder, because you just can't get your head down into the field. The robot gets the camera right there.

When we first started, we used to use the stapler, as well. And the stapler coalesces all the tissue together. And if you want to do nerve sparing, I think the stapler makes it much more difficult. If you staple, you're going to come across this whole packet right here. And so I think, if you're going to do nerve sparing, I think you have to use clips, just like you would with a prostatectomy. Because otherwise, you just run the risk of bagging the nerves.

MITCHELL R. HUMPHREYS: For men, if appropriate, we will do nerve sparing for the neurovascular bundles for future sexual function. The important parts are to maintain the external urinary sphincter and to take a biopsy of that area, as well as biopsies of the ureters so we know that the disease doesn't involve those particular areas.

ERIK P. CASTLE: So here are both our ureters. Let's go ahead and hold this bowel [INAUDIBLE]. We have our left one coming across.

And then we control the urethra, and that is controlled after we remove the bladder--