

Robotic Surgery for Prostate Cancer

Webcast

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Introduction

Andrew Schorr:

Hello and welcome once again to Patient Power on HealthNet on nmh.org. I'm Andrew Schorr. This is another one of our programs that we do with an eminent medical expert every two weeks on the Northwestern Memorial Hospital website.

We earlier did a discussion, a more general discussion, on prostate cancer, and of course prostate cancer is scary to any man, and of course we've been told that many men will die as they get older with prostate cancer rather than from it, but certainly when you have that diagnosis you want to know what should be done. And one of the approaches that's been developed now is not just surgery but using a robot, a robotic surgery for prostate cancer. So with us today is Dr. William Lin, who does robotic surgery at Northwestern Memorial Hospital. Of course, he's a urologist and he's associated with the Feinberg School of Medicine as well.

Dr. Lin, thank you so much for being with us on Patient Power.

Dr. Lin:

Sure.

When is Surgery Appropriate?

Andrew Schorr:

Dr. Lin, so we're aware of surgery as one modality, one approach in prostate cancer. When does surgery come into play? When does a man need surgery? And then we'll get into what are the different approaches for surgery.

Dr. Lin:

Well, whenever a patient is diagnosed with prostate cancer there are many different options available to the patients. The option can range from watchful waiting, radiation therapy, cryotherapy, high intensity frequency ultrasound therapy and surgery. Whether or not one elects to go through any of the options is very much dependent on patient preference. Most patients, if their health can tolerate a major procedure, would elect to go with either radiation or surgery.

Andrew Schorr:

Okay. But typically you go for surgery when the belief is that the cancer is contained within the prostate?

Dr. Lin:

Yes. That is an accurate statement.

Andrew Schorr:

So there we are. So a man if he's been diagnosed with prostate cancer and it's believed that it's localized. So then there have been various approaches to surgery over the years. You know, prostate cancer surgery is not a small thing to consider, so when you decide, Well, if I can have my prostate removed and the cancer go with it, that's for me. So tell us the different approaches to the surgery itself.

Dr. Lin:

Traditionally surgery has been done using the open approach where an incision is made from the umbilicus to the pubic bone, and through that incision the prostate is then separated from the bladder as well as from the urethra. The bladder is then brought down to the urethra, and a new anastomosis or new connection will be made to bridge the gap left by the removal of the prostate, and a catheter will be left across for the anastomosis to heal over time, usually about two weeks, and that's the idea of surgery, to remove the prostate. And that is the traditional open approach, again, through an incision spanning from the bellybutton, the umbilicus area to the pubic bone.

The other approach that is now becoming widely used is the robotic prostatectomy. There are quite a few different names applied to this technology. Some people call it robotic prostatectomy. Some people call it robotic-assisted laparoscopic prostatectomy, but they are all referring to the basic idea that using the robotic device which is controlled by the urologic surgeon to perform essentially the same procedure as open surgery except that there will be no incision of similar size as the open prostate surgery. Instead, there will be small, about one centimeter, incisions placed throughout the abdomen, approximately six small incisions placed throughout the abdomen to allow the robotic instruments to be introduced into the patient's body.

Once the instruments are inside, the surgeon will then control these instruments to accomplish the same objectives, basically to remove the prostate, separate the prostate from the bladder and the urethra and then to hook up the urethra with the bladder and leave a catheter across for healing to take place optimally.

Differences in Traditional and Robotic Surgery

Andrew Schorr:

Okay. I've got a couple of questions for you that that brings up. First I want to just go over to make sure I understand and all our listeners understand. So when someone has the traditional open prostatectomy they have a pretty good scar. They're going to get a pretty long incision in their abdomen.

Dr. Lin:

Typically, yes.

Andrew Schorr:

And how long is the recovery from that, usually?

Dr. Lin:

The recovery is usually about six weeks in a sense. You're not going to stay in the hospital for six weeks, obviously. You will stay in the hospital for anywhere between one to two nights. And then the catheter will come out at the end of the two-week healing period. After the catheter comes out the patient with the open incision will still have about four weeks left of recovery time from the incision, meaning there can still be tenderness around the incision area. Certainly, he can go around his daily activity with some restriction but definitely can be very functional even during the six-week period. No heavy lifting is recommended for that part, that is with open surgery.

Andrew Schorr:

Okay. So let's compare that with the robotic surgery. Obviously, just these small placements of instruments, maybe six holes in the abdomen, but what about the recovery from that?

Dr. Lin:

Recovery, again, very similar with open in the initial phase of the recovery process, one to two nights of hospital stay, catheter in for about two weeks, take the catheter out. After that patients are essentially through their recovery process in terms of healing from the incision. So instead of the more extended six-week period of incision healing it's cut down to about two weeks.

Andrew Schorr:

Okay. One other thing that of course men think about is the consequences of surgery, and of course you want to get rid of the cancer but you'd like to preserve your erectile function and your continence. Now, how is robotic surgery compared to open surgery related to the hope of doing that and sparing the nerves?

Dr. Lin:

Well, these are very important subjects for patients going through the treatment decision-making process. First, let's focus on the continence issue. We have a lot of data from open surgery documenting excellent results in terms of continence. With, say, the general group, the majority of patients undergoing open prostate surgery will have excellent return of continence over a period of a year. And depending on whose series you read, the continence data can range from 95 percent to 80 percent. Very, very good data.

And the maturity of the robotic data is definitely not as prominent as the open in the sense that robotic prostatectomy has only been done for the last five years or so. We don't have as much data, but so far the continence rate has been very comparable to the open procedure looking at the population as a whole who undergo robotic prostatectomy compared to open prostatectomy. But it is definitely very early data.

Regarding the potency preservation issue, again excellent data for the open surgery. Same thing can be said about robotic regarding the early nature of its data-collection process. Again, we have only been doing robotic surgery--we definitely have not been doing robotic surgery for as long as we have been doing open surgery so although early data indicating that the robotic prostatectomy potency preservation rate may be comparable to open, but the data is still immature. At least for now for us to conclude definitively that robotic prostatectomy will yield better results than open prostatectomy in terms of potency preservation.

Andrew Schorr:

Okay. So let me go over this then. So we know right off the bat that it's less trauma, if you will, for your abdomen, smaller incision and a quicker recovery makes sense from that. And then you believe what's going to show up over time is equivalent related to continence and erectile function.

Dr. Lin:

Yes. Over time I do think this will be the fact, that the open procedure in robotic procedure will yield very similar results in terms of potency preservation as well as continence preservation. However, I would find it extremely difficult for any procedure to be better than the open procedure in terms of the excellent outcomes that we have seen with open procedure both in the erectile function preservation arena as well as in continence preservation arena.

Who is a Candidate?

Andrew Schorr:

Okay. So now of the men who are candidates for surgery how is it decided who's a good candidate where you would suggest or recommend robotic surgery?

Dr. Lin:

Well, let's approach the question this way: Which group of men in my opinion are not candidates for robotic surgery.

Andrew Schorr:

Sure.

Dr. Lin:

Patients who have extensive prior abdominal surgery definitely would not be a good candidate for robotic surgery. Any kind of surgery in the abdomen will result in some degree of scarring internally, and in order for us to introduce these robotic instruments into the body we have to essentially enter the abdomen through these tiny little incisions. And if you have scar form in your body from prior surgery this introduction process may become quite treacherous. So we definitely do not think that patients with extensive prior abdominal surgery should have robotic prostatectomy or should consider robotic prostatectomy as their first choice. People are doing robotic prostatectomy on such patients, but again it's considered a relative contraindication.

Andrew Schorr:

Okay. Let me just get a little more specific there. So help me understand. If you had your appendix out or if you had gallbladder surgery or what sort of things would it be where you'd take a look at it?

Dr. Lin:

Well, I think that a relatively simple appendectomy without appendix rupturing prior to the appendectomy procedure is not necessarily a contraindication to robotic or any kind of laparoscopic procedure. However, if the patient has a previous history of colon resection, previous history of intestinal resection and then compounded with treatment such as radiation to the abdomen, definitely that will be considered a contraindication to surgery. But somebody who had simple procedures, like gallbladder surgery or appendectomy like you said, are still considered good candidates for robotic surgery.

Robotic Surgery Precision

Andrew Schorr:

Okay. Now let's get a little bit more into how you do it. So I have this image, I haven't seen it myself, that you, the urology surgeon, you're sitting at a console, and, now, it's not like out of Star Wars, R2-D2, when we talk about a robot, but robotic arms, I guess, that holds these micro instruments and I guess a camera and illumination device so you can see inside. That's right there at the patient.

Dr. Lin:

Yes

Andrew Schorr:

And you're using those. Now, but it allows you, I imagine, to turn the instruments in ways that maybe would be more difficult for you to do with your own hands.

Dr. Lin:

Sure. Let me go into this in a little more detail. You're exactly right. I think there's a general misconception out there that this DaVinci robot is, like you said, are R2-D2. You type in the program say, Go do Mr. So-and-so's prostatectomy. It jumps on the patient and takes care of this. That's not the case at all. The robotic instruments, just imagine tiny little robotic hands the size of our fingernails. These tiny robotic hands will be placed into the patient's abdomen by the surgeon. The surgeon then in turn after the robotic hands are placed into the abdomen will go sit on a computer console connected to the patient through coaxial cables. And this connection will allow the surgeon to control these tiny little hands inside the patient's body looking at the monitor that the console has.

Talking about the console monitor, what the surgeon sees in the console monitor is in fact a three-dimensional view of the patient's body cavity, internal space. This allows precise placement of these tiny little hands in certain parts of the body that are difficult to get to, because for human hands to reach certain spots the space oftentimes is very tight in the pelvis. But because these are tiny robotic hands they can really get to spots that human hands have difficulty getting into to with great precision.

And what allows the surgeon to see the space in three-dimensional way is very sophisticated optics provided by two separate cameras, one for the left eye and one for the right eye. These two cameras are then combined to get the surgeon the three-dimensional view that the surgeon has looking at the console monitor. So that is the basic idea of the robotic surgery. First the instruments are like tiny little human hands the size of your nail, fingernail, and these hands are introduced. These hands are then controlled by the surgeon looking at a three-dimensional monitor.

Andrew Schorr:

Now, you used this term DaVinci robot. So robotics have been around for a while, I think since the mid 80s, for medicine.

Dr. Lin:

Well, actually, the first robot was invented by DaVinci in the renaissance. That's why they named the robot DaVinci.

Andrew Schorr:

There you go. Well, let's carry it forward though. But as far as I know they were using it in brain surgery and different things. They had this PUMA device. So tell us about how we got to this point for prostatectomy and how much experience urology has had with it and how much experience you personally have had with it.

Dr. Lin:

Well, let's put it this way. The modern robotic surgery, the technology that we're using now was first developed by the military for field surgery. They envisioned people doing surgery for soldiers on the battlefield while the expert surgeons are still in the continental US, Walter Reed or one of the medical facilities. However, because of the change of the warfare pattern, this military technology eventually became a civilian property because the government no longer has the interest of developing that further.

So that has been the case since the late 80s. And the urological robotic application really didn't take off until about six years ago. And Henry Ford Hospital is one of the first major academic centers to commit to this technology and has really popularized its use in the urologic communities.

Finding an Experienced Surgeon

Andrew Schorr:

Okay. And you personally, how long have you been doing this? Or how often do you do this?

Dr. Lin:

I have only been doing this for about a year at this point. And so, again, our experience is very early with the robotic surgery, applying it to the radical prostatectomy procedure, but the results have been very encouraging.

Andrew Schorr:

Okay. You know, I think sometimes people need to think, I know I have as a patient, so on the one hand you have technology and on the other hand you have the competence of the doctor...

Dr. Lin:

Yes.

Andrew Schorr:

...and the art of medicine as well as the science of medicine. And so I know we can look to Northwestern for both. So the appropriate use of technology for the appropriate patient and the expertise of the physician. And I guess, I would just say from my Patient Power point of view, that's important to remind people. So it's not just about a robotic surgery device, very expensive device that hospital A or

hospital B has chosen to purchase, but it's about the surgeon and the expertise of the whole team. And certainly, as you said, when somebody has any kind of surgery they're going to be in the hospital for a few days or whatever, there's going to be a team, there's going to be recovery after that. And so what you're choosing really is the whole thing, not just the robot. Right, Doctor?

Dr. Lin:

Exactly. That is a very important point. I think that although the name "robot" implies that there's no human contact with the team taking care of the patient, that is so far from the truth. The interesting thing to me was when we were training for the robotic surgery the first thing the company who was running the training program asked for was which of the surgeons has the most open experience. That should be the surgeon who will pick up the robotic surgery the quickest.

So what we learn through open surgery is in fact translating to robotic surgery in an exceptional manner. And the surgeon experience, open experience, cannot be overlooked. And, again, it is very, very important for the patient to understand that the human side of surgery is very much maintained and cannot be more important than what we're doing now with the robotic procedure. Open experience is so important in this particular procedure.

Andrew Schorr:

Right. If you were my doctor I want your surgical judgment and then if you're choosing whether it's this surgical instrument or that, or the robot is in a sense your surgical instrument, I'm relying on you and your judgment to make those choices.

Dr. Lin:

Exactly.

Determining the Need for Surgery

Andrew Schorr:

Well, let's talk about some questions that come up. So we talked about surgery as one of the modalities or part of a continuum maybe of modalities for prostate cancer. Does surgery always come first? Where does surgery, whether it's robotic or not, fit in these days? How do you determine that?

Dr. Lin:

As I alluded to earlier, a lot of this is going to be patient driven. Let's assume that a patient is in his late 50s or early 60s. This is the age group where we typically see prostate cancer patients coming in to talk to us about various treatments. Let's assume that's the age, and let's assume that the patient's health is fair. Then patient options typically boil down to either radiation or surgery. And whether or not somebody going to say surgery is right for me depends a lot on their

personality. Some people would definitely tell you, Well, I want my prostate out. I don't want to see it ever again. Then surgery is the right thing to choose.

However some people feel very comfortable with radiation because the recovery with radiation is minimal. Even though the prostate is left behind, scientific data has demonstrated that cancer control results are very, very comparable as far as erectile function, preservation result as well as continence preservation result. Yet some people are very uncomfortable with the idea of still having the prostate left behind in the body. As you know radiation does not remove the prostate. It irradiates the prostate. Some people feel comfortable with that, some people don't. So everything boils down to what the patient feels comfortable with and whether or not his health can tolerate a major procedure.

Andrew Schorr:

So when you take all this together, surgery now and the various modalities and now add to that robotic surgery, how do you feel about the likelihood that a man can have these interventions and go on and have a pretty good, full life?

Dr. Lin:

We see it every day in our postoperative patients or postradiation patients. So many of them just continue with their lives. Whether or not you are single, whether or not you're married, we see so many of these patients every day going on with their lives, and it's really heartwarming.

Andrew Schorr:

I bet it is, and I'm glad you've got the robotic tool now to help people with smaller, more minimally invasive, if you will, as you go, and a quicker recovery and add that to your armamentarium, as we like to say, in the ways you can approach prostate cancer. And again have a discussion with a patient and let them weigh the pros and cons of all these approaches with you. Just one other question, sir, and that is, we had gotten a question in from Valerie from St. Louis, Missouri. She's concerned about her husband who's been diagnosed with prostate cancer, and it looks like he's a candidate for surgery and the specialist that he saw said they'd like to wait maybe eight weeks post-biopsy to have the surgery so that the prostate can heal and then the irritation and the inflammation from the biopsy can be diminished. But you also talked about men just wanting it out. Just like women with breast cancer, I want it out.

So is that a good idea to wait after the biopsies? And how urgent is it to have surgery whether it's robotic or not?

Dr. Lin:

I think that's a very common practice to wait anywhere from six to eight weeks. Whether or not there is any scientific basis to that is hard for me to comment. I look at it from the patient's perspective. It is always a shock to be given a

diagnosis of cancer, and it oftentimes takes a couple days if not weeks for this idea to sink in before really coming to terms with the diagnosis. And that's, for me, a more compelling reason to wait that period of time. Certainly, we have done surgery almost within two weeks of the biopsy, and we haven't encountered that much difficulty with the surgery, but that is only an anecdotal situation. Most patients do like to wait six to eight weeks. For me, that's more of an accepting phase that patients go through as they are given the diagnosis of cancer.

How urgent should this be done, scientifically? For most of the prostate cancer we see the urgency issue is not truly a relevant issue given what we know about prostate cancer. Unless the patient has the rare extremely aggressive prostate cancer, I think urgency should not be the driving force to hurry up and make is a decision.

Andrew Schorr:

Right. And you would know about the cancer cell type from the biopsy, right?

Dr. Lin:

Exactly.

Andrew Schorr:

So that's good to know. So somebody has got to wrap their head around their options, what their diagnosis has been. And I know patients who are thoughtful and play an active role in the decision-making, get comfortable with it. Certainly in any of these approaches, whether it be robotic or not, there's recovery time, and that's going to happen over a while, so you need to really be thoughtful about the way that you approach this.

Dr. William Lin, urologist and robotic surgeon now at Northwestern Memorial Hospital, thank you for being with us to share your expertise and help put robotic radical prostatectomy in perspective for us.

Dr. Lin:

I'd like to make one final comment.

Andrew Schorr:

Sure.

Dr. Lin:

Again, I again feel that there will be no surgery that's going to be better than open surgery in terms of its excellent data concerning cancer control and all of the relevant issues surrounding the recovery process such as continence preservation and erectile function preservation. I don't want patients to think, Oh, robotic surgery will definitely give me a better chance of having potency preserved or continence preserved. The data again with open surgery has been phenomenal.

Patients should look at it in a way that this is just another way to get the procedure done. It's using new tools, and I think time will tell that robotic surgery will prove to turn out to be just as effective a cancer control and modality as open.

Andrew Schorr:

Okay. That puts it in perspective, and I think that's really a great way to approach it.

Dr. William Lin, from the Feinberg School of Medicine and Northwestern Memorial Hospital, thank you for being with us, sir, and sharing your expertise today.

If you want to request an appointment online with Dr. William Lin, who has been our guest today, or find out more, just go to nmh.org. And of course if you'd like more information about any Northwestern Memorial Hospital service or physicians, again, nmh.org. We'll be back in two weeks on October 9 and we'll discuss sexuality and sexual health with an expert, Jeff Albaugh. I'm Andrew Schorr. You've been listening to Patient Power on HealthNet brought to you by Northwestern Memorial Hospital.

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