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Robotic Surgery for Women: The Future Is Here

#### ADVANTAGE OF USING ROBOTIC SURGERY FOR THE TREATMENTS OF BOTH BENIGN AND MALIGNANT GYNECOLOGIC CONDITIONS.

You are listening to ReachMD, The Channel For Medical Professionals. Welcome to advances in women's health sponsored in part by Eli Lilly. Your host is Dr. Lauren Streicher, Assistant Clinical Professor of Obstetrics and Gynecology at Northwestern University of Medical School, The Feinberg School of Medicine.

Robotic surgery the future is here. You are listening to ReachMD XM 157, The Channel for Medical Professionals. Welcome to Advances in Women's Health. I am Dr. Lauren Streicher, your host and with me today is Dr. Patrick Lowe, an Assistant Professor in the Department of Obstetrics And Gynecology at the Northwestern University Feinberg School of Medicine. Dr. Lowe is the Director of Gynecologic Oncology Robotics and Minimally Invasive Surgery Program.

DR. LAUREN STREICHER:

Welcome, Dr. Lowe.

DR. PATRICK LOWE:

Good morning. Thank you very much for having me. It is certainly my pleasure to be joining you guys today.

DR. LAUREN STREICHER:

Now, you know the majority of this 600,000 hysterectomies performed each year are done through an abdominal incision and right now only about 10% to 15% are performed laparoscopically, but we both know that even skilled laparoscopic surgeons can't always get the visualization they need to do with highly technical work laparoscopically and less resort to laparotomy and this is particularly to someone, who has cancer or lot of scar tissue or a very large uterus, which is of course where robotics comes in, so can you start by describing exactly what robotic-assisted surgery is?

DR. PATRICK LOWE:

Robotic-assisted surgery is in my opinion for the next generation of technology in minimally invasive surgery and so what the system actually has, it's actually a surgical system, okay, and has 3 components associated with it whereas standard laparoscopy has pretty much laparoscope, some surgical instruments, this actually has a dedicated vision system, a dedicated surgeons counsel as well as a dedicated patient's side cart and so the 3 components actually work in conjunction with each other to perform more difficult and more complex minimally invasive surgical procedures such as procedures for gynecologic malignancy such as cervical cancer, endometrial cancer and certainly complex benign gynecologic procedures.

DR. LAUREN STREICHER:

You know, my understanding is that this was originally developed by the military as a way of operating on wounded soldiers that couldn't get to the surgeons, so the surgeon be the robot would operate very remotely sometimes. How often is robotics performed remotely today?

DR. PATRICK LOWE:

Well, the FDA approval at least in United States with regard to robotic surgery, the surgeon has to be in the room with the robotic equipment.

DR. LAUREN STREICHER:

So, we are not doing remote stuff in the United States.

DR. PATRICK LOWE:

We are not doing remote stuff, but there is actually companies that are developing software, say for instance, if you had a expert in robotic surgery in for instance Arizona and you have a surgeon in the Mexico, who lived in remote location in New Mexico, they are attempting to develop software that will actually allow the surgeon in Arizona to proctor on a live basis the surgeon in the Mexico. In other word, you would be able to take over the controls of the robotic system to train and proctor that surgeon from a remote location.

DR. PATRICK LOWE:

So, we will be seeing a little bit more of that.

DR. LAUREN STREICHER:

I think we will probably be seeing that in the future.

DR. PATRICK LOWE:

So, what kinds of benign gynecologic cases do you think benefit from using the robot?

DR. LAUREN STREICHER:

Well, a lot of that depends on your experience as a laparoscopic surgeon. I have seen certainly people who are very skilled in laparoscopic surgery, who can do and perform simple laparoscopic case as to very difficult and complex laparoscopic surgery including a simple hysterectomy for menorrhagia, dysfunctional uterine bleeding, a ovarian cystectomy for simple cyst on an ovary, a myomectomy for dysfunctional uterine bleeding for those types of things.

DR. PATRICK LOWE:

So those things can be done laparoscopically?

DR. LAUREN STREICHER:

Correct.

DR. PATRICK LOWE:

What is the robot then?

DR. LAUREN STREICHER:

Correct, for the cases that you would normally do in an open procedure. Okay. In other words, a uterus that is 14-, 16-, 18-week size or 400 or 500 g uterus that has large myomas, large fibroids that you would normally do that case from an open procedure that may be a good candidate for robotics. The patients that have extensive evidence of pelvic endometriosis where you know you may have to dissect the ureters all the way out from the base of the pelvis to the bladder. Some of those types are more difficult surgical procedures that you would consider doing laparoscopically can be performed in my opinion because they are more complex, easier with robotics and then guide a safety approval in performing myomectomies. So, those are probably the 3 biggest areas that robotics could potentially benefit benign gynecology.

DR. PATRICK LOWE:

But I think you would agree that a lot of times of robotic in benign cases is used for cases that really are simpler that don't necessarily require robotics and obviously robotics is very expensive and insurance companies pay the same thing to the surgeons of the hospital, so honestly, do you think the benefit to the patient in most benign cases, simple cases justifies its expense. Do you think some of you are using this for marketing purposes?

DR. LAUREN STREICHER:

Well.

DR. PATRICK LOWE:

I know that is a hard question.

DR. LAUREN STREICHER:

Well, this is what I would say. This is how I have answered that question before. As long as 60%, 65%, 70% of hysterectomies whichever database whether it is governmental database or you know Medicare database or serial database whatever, as long as that percentage is still existing of hysterectomies being done through an open procedure, then I would say there is a role for certainly laparoscopy and robotics to sort of move that 60% because really in my opinion I think really open hysterectomy, I am sure you feel the same way too, should be may be about 20% of all hysterectomies in United States, but you and I both know that the large majority of practitioners either do not do laparoscopy, don't feel comfort for laparoscopy or do not perform robotic surgery and so there is a still large percentage of women who are having an open procedure that really could benefit from laparoscopy or robotics and so whether robotics is easier to learn than laparoscopy if you have never performed minimally invasive surgery before I don't know if you really know the answer to that, but until 15% to 20% of all hysterectomies are done in an open case, I think if new technology is available that can sort of shift that paradigm towards less invasive surgery with fewer complications, less blood loss, short hospitalization, quicker recovery because a lot of woman today not only have a lot of things to do at home, but they also have a professional carrier and so if you are able to go home the next day from surgery

DR. PATRICK LOWE:

Absolutely short recovery time.

DR. LAUREN STREICHER:

And recovery in 2 weeks that is a big impact on society.

DR. PATRICK LOWE:

I couldn't think anymore.

DR. LAUREN STREICHER:

And so there are some issues with cost associated with it being more expensive and part of that is we need to do this cost analysis.

DR. PATRICK LOWE:

They are not taking into effect the cost of the patients and loss of revenue which is a big factor

DR. LAUREN STREICHER:

Right.

DR. PATRICK LOWE:

So, can you start by talking little bit about the time line, when did minimally invasive techniques and specifically robotics for cancer surgery become an option?

DR. LAUREN STREICHER:

Well, specifically for gynecologic cancers, it's I think a lot of the listeners will be surprised to learn that laparoscopy as an option for endometrial cancer and cervical cancer has been around since the early 90s. You know, the first series of publications on laparoscopy for treating endometrial cancer and cervical cancer are published between 1992 and 1995.

DR. PATRICK LOWE:

But during the 90s, how often did that happen?

DR. LAUREN STREICHER:

These were basically expert centers that were pushed in the anvil with laparoscopy and looking for more minimally invasive approach and we were basically trying to prove that this new technology and new techniques were safe and feasible and when they did that what then developed was we need to do a randomized trial to see if its equivalent to open procedures and it has been a historical teaching that if you have endometrial cancer, you have cervical cancer, that you should have an open surgery and as the 90s went on, computer technology improved, surgical technology improved as well as instrumentation, what we saw were more and more institutions at least probably on the East Coast and west coast were starting to implement laparoscopy in their program and the way they did that was they would sent a surgeon to France or Germany and they would spent 6 weeks or 3 months with the surgeons in Europe, who had developed this technique. They would come back to United States and then they would start a program at their institution places like University of Southern California where I did my fellowship. Where more of them catering in New York MD Anderson and Texas and so what happened was things migrated from here to the United States, okay, because in Europe they actually think minimally invasive surgery first and open surgery second, which is different than the historical approach in United States and so as more evident based that came out that this was safe, this was feasible. There was no difference or there were no concerns about an increased risk of recurrence or increased risk of survival and lot of retrospective and some small prospective studies. More and more institutions started performing laparoscopy, but.

DR. PATRICK LOWE:

So such a study that you are talking about. Is this laparoscopy?

DR. LAUREN STREICHER:

This is laparoscopy. Correct.

DR. PATRICK LOWE:

But, as you and I both know laparoscopy is hard to learn for benign gynecology. It is even more difficult to learn for gynecologic oncology and the reason is doing the lymph node dissection. It was always thought that doing the lymph node dissection was going to be rate-limiting step in being able to perform minimally invasive surgery because we had already been performing laparoscopic hysterectomies and laparoscopic assisted vaginal hysterectomy and so as a LAP 2 trial was started within the society of gynecologic oncology in the GOG more and more institutions are performing laparoscopy, but interestingly in 2004 and 2005 a lot of these societies do survey and they asked the question to the members of the Society of Gynecologic Oncology what are you feeling about laparoscopy for not only endometrial cancer, but cervical cancer and what they found out was that fewer than 8% of all gynecologic oncologist will use laparoscopy more than 50% of the time for every patient they see with endometrial cancer so there is about 41,000 new endometrial cancer cases per year. So if you only had 8% of all your practitioners feeling very stronger or even utilizing laparoscopy when it has been shown to be equivalent to open surgery, you got a big problem, okay, and the thought was that it is because a lot of gynecologist have not had formalized training in laparoscopy. You have to have an expert assistant. Okay, there is economics involved, training and learning and about the time that that survey came out was when the robotics was FDA approved for gynecologic oncology.

DR. LAUREN STREICHER:

I would like to thank my guest Dr. Patrick Lowe who has enlightened us about the advantage of using robotic surgery for the treatments of both benign and malignant gynecologic conditions.

I am Dr. Lauren Streicher. You are listening to ReachMD, The Channel for Medical Professionals. For complete program guide and podcasts, visit [www.reachmd.com](http://www.reachmd.com). For comments or questions, call us toll free at 888MD XM157.

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