

ROBOTIC-ASSISTED GYNECOLOGIC ONCOLOGY PROCEDURE
HALIFAX HEALTH
DAYTONA BEACH, FLORIDA
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KELLY L. MOLPUS, MD:

ANNOUNCER: Welcome to Halifax Health in Daytona Beach, Florida. You're just minutes away from seeing a robotic-assisted laparoscopic gynecological case live. This very progressive and minimally invasive approach will be performed by Dr. Kelly L. Molpus, a gynecological oncologist at Halifax Health and moderated by gynecologic surgeon Dr. Christopher Stanley. The procedure will utilize the da Vinci robotic system, which allows a more specific dissection. The robot gives the surgeon the ability to move instruments as they would normally move their hands in an open dissection. OR-Live makes it easy for you to learn more. Just click on the "request information" button on your webcast screen and open the door to informed medical care. Now let's go OR-Live.

00:01:02

JENNIFER HALL: Good evening, and thank you for joining us live at Halifax Health Medical Center in Daytona Beach, Florida. I'm Jennifer Hall, and I'm here with gynecologic surgeon Dr. Christopher Stanley. Dr. Stanley, can you tell us a little bit about the procedure we'll be seeing tonight?

00:01:18

CHRISTOPHER STANLEY, MD: Sure. Well, Jennifer, I'm glad to be here tonight, and we're going to watch Dr. Molpus performed a modified radical hysterectomy for the treatment of endometrial cancer. And for the lay people out there that want some more detail on that, what it means is we're taking the uterus out and the ovaries and the lymph nodes in the pelvis. And this has been the mainstay treatment for uterine cancer for eons, but what makes this procedure different is that we're using robotic surgery, the da Vinci robotic system, so we're performing major surgery through minor incisions. And if we can roll tape, I'll show you and explain a little bit more about what the platform actually provides and allows us to do.

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As you see, the first thing you notice is that the surgeon is sitting away from the patient. Dr. Molpus will be sitting at the console, where he controls the robot. And as you can see, the robot sits over the patient, and it's very important to realize that the robot is under Dr. Molpus's control and is in no way able to do anything that Dr. Molpus doesn't tell it to do. It has four separate arms: three operating arms and one camera arm. And what is nice about the robot and what is unique is that the little arms are able to articulate, just like your wrists would articulate. Dr. Molpus places his head in the console, and with the goggles there, you have 3-D vision, and also magnified by a factor of 10. So not only do you have good depth perception, you have excellent magnification. Then we can look here and see how the robot hands actually mimic whatever your fingers are doing, the robot itself does. And that is what allows us to put our hands essentially in the patient through these tiny incisions.

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JENNIFER HALL: That's amazing.

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CHRISTOPHER STANLEY, MD: It's a wonderful, wonderful piece of technology, and it's really in many ways revolutionized what we do with gynecologic oncology.

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JENNIFER HALL: I know. I'm really excited to see it tonight.

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CHRISTOPHER STANLEY, MD: Well, we're going to look over to see Dr. Molpus. Surgery's already started, and we will hear from OR room number two. Dr. Molpus, can you hear us?

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KELLY L. MOLPUS, MD: Yes, thank you. Thank you, and good evening. Welcome. We appreciate all of you interested in logging on this evening. We thank you to our live audience here in the hospital auditorium. We're well under way with this case. I'd like to, however, before we move forward, I'd like to introduce our vital operating room team. We have, as circulator, we have Debbie Johnson. As first assistant we have Lisa Jacobs Wilkinson. Our surgical tech is Tawna McLoughlin, who also is working as a bedside assistant this evening. And we have Kat Benson, who's taking care of anesthesia up at the head of the bed. So without further adieu, we'll take a look, show you where we are in the procedure, and move forward from there.

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CHRISTOPHER STANLEY, MD: So what we see Dr. Molpus -- what he is seeing right now is the uterus. And as you can see, the robotic instruments. And he's using three different arms. And in the right side are scissors, the left side are graspers, which also have the ability to coagulate. And out of the picture right now is another grasper which is used to move and keep the uterus in bound position.

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KELLY L. MOLPUS, MD: We're using that right now to hold this bowel back. It kept flopping down in our way. So Lisa, if you could please just kind of ease that uterus over to the left. You can see we're fairly well along in this procedure. This is the round ligament, and it has a small artery in it. And we're going to just ligate this. We've opened up these spaces, which I'll describe as we work in them. Using bipolar cautery here, and then the scissors also have monopolar cautery capacity. So in each hand we have the ability to cauterize.

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CHRISTOPHER STANLEY, MD: And you can see those large blood vessels there pulsating along the sides, and that's exactly what the robot allows Dr. Molpus to see in fine definition. So he has absolute control over the instruments, plus he has great depth perception, so he's not liable to inadvertently injure one of those major arteries.

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KELLY L. MOLPUS, MD: Here is the infundibular pelvic ligament. This is the structure that carries the ovarian artery and vein. And we've got this space fairly well opened. Our ureter. I'll show you the ureter here crossing into the pelvis. This enters the pelvis where the iliac vessels bifurcate from the common iliac artery to the external and internal iliac arteries. And that's a fairly consistent place to find the ureter as it enters vessels bifurcate. What I'm going to do now is isolate the infundibular pelvic ligaments, the gonadal vessels, so that we can take the blood supply to this ovary. And we use these scissors with cautery to open up the space. And so I have here in this pedicle the gonadal vessels, which can be taken easily with cautery. I like to take the gonadal vessels high in the pelvis to ensure there's no chance of an ovarian remnant. It also helps us generally set up the lymph node dissection. We've changed the order a little bit tonight to try to just demonstrate some key points during the procedure.

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CHRISTOPHER STANLEY, MD: Dr. Molpus, while you're doing this, we're going to take some questions. And if you want to interject at any particular point during the case, just step on in and let me know.

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KELLY L. MOLPUS, MD: Certainly.

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JENNIFER HALL: One of the things that we get lots of questions about is what are some of the potential advantages about robotic surgery.

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CHRISTOPHER STANLEY, MD: Well, the major issue with any sort of cancer treatment is to get the cancer tissue out of the pelvis -- or out of the body. It doesn't really matter to the patient how we do that as long as the tissue's gone. To have a large incision from sternum on your belly doesn't make you any more likely to beat your cancer, it just makes it longer for you to heal up. So being able to get the surgery done through the tiniest incisions allows the patients to heal much quicker, to get out of the hospital, and typically our patients are going home within the next day, 23 hours, 24 hours. When you're home out of the hospital, as clean as you try and make the hospital, the hospital's the worst place to be if you're having surgery because you're not really sick, you're just hurt. You'd rather be at home with your own germs taking care of things at home, and you're going to do a lot better. A hospital-acquired infection is a bad thing. It's the worst thing for a cancer patient because it really delays adjuvant therapy.

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KELLY L. MOLPUS, MD: Excuse me, Dr. Stanley. Tawna, if you can come in and grab this ovary for me, please.

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CHRISTOPHER STANLEY, MD: Got something you want to show us there, Dr. Molpus?

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KELLY L. MOLPUS, MD: I was just requesting a little assistance here.

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CHRISTOPHER STANLEY, MD: Looking across there, he's coming across tissue there. But the point about the advantages, the patient comfort is very important. The patient being able to get back to her life. As good as we are with cancer treatment, some patients are on limited time, so we give them more quality time. I mean, it's hard to quantify that to the accountants and things like that, but those patients, they value that time, and we should be able to give that to them. It's one of the things the robot does. So bottom line is, less pain, quicker return to function, and I really do think better quality of life.

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JENNIFER HALL: Now, on the flip side, would you say that there's any disadvantages?

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CHRISTOPHER STANLEY, MD: The only disadvantage would be, I think, the time the patient has to be under anesthesia is longer. And for the surgical team, the procedures are longer and more drawn out, so we're kind of taking the pain and heartache from the patient and putting it on the surgeon, which is a good deal. It's a good trade-off. But the patients have to be able to tolerate -- you can't really appreciate it here on the film, but when Dr. Molpus is operating on this patient, she's almost on her head. And that's a little bit of a stressful situation to be for four or five hours in that Trendelenburg position. But as long as the patient tolerates Trendelenburg, as long as they're medically capable to deal with the rigors of the long procedure, there are few downsides and few contraindications.

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JENNIFER HALL: The advantages far outweigh --

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CHRISTOPHER STANLEY, MD: I would say definitely. But again, it's not for every patient. But I think what we're doing now is we're trying to find -- we really have to find an excuse not to use laparoscopy or the robot. And I think you see this in GYN in general. I mean, traditionally, when I started training 20 years ago, we used -- everything was almost open. Laparoscopy now totally revolutionized and totally changed the mindset.

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JENNIFER HALL: That's wonderful. And thank you so much, Dr. Stanley. Dr. Molpus, what do you have going on in there right now?

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KELLY L. MOLPUS, MD: Now we're doing what we call skeletonizing, opening up this peritoneum and trying to isolate the uterine vessels and trying to just free up this tissue around it. It helps isolate the vessels. It's easy to coagulate them more securely if we get rid of some of this extra tissue. We also know as we open this tissue and drop it to the side, we know that our ureter drops laterally away from where we're going to take the vessels.

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CHRISTOPHER STANLEY, MD: If questions, more questions from the Internet --

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JENNIFER HALL: Yeah, we actually had a few of our online viewers submit some questions. And the question is, "How long does it take to learn how to use the da Vinci?" So this might be an opportunity to talk about the training that's required.

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CHRISTOPHER STANLEY, MD: Well, the da Vinci's just a tool. It does not get the surgeon off the hook for understanding good principles of surgery. You still need to know your anatomy down cold. You still have to know how to do the procedure as if you were doing it open. So all of us da Vinci surgeons are trained general surgeons or urologists or gynecologists or gynecologic oncologists. The device, the da Vinci is just an extension of your hands. So you have to have good surgical skills. Now, it is a different way of approaching things, but in a good way. Because, for example, instead of being three foot away from the patient when I operate, my eyes are inches away from the organs that we're working on, magnified ten times. So we have a system in place where once we develop a program, we go to training, we work on models, we work on animate models, we work for several hours, weeks even, before we actually ever touch a human patient. And that's the beauty of the da Vinci, because we can simulate surgeries before we ever touch a patient. And that's a definite benefit for the patients. It's not like the old days where you see one, do one, teach one. That just really isn't appropriate anymore. And the da Vinci allows you to have that robot platform, that simulating platform that makes the surgeon more confident and it's safer for the patient. But it's very structured. I mean, you just can't hang out a shingle and say, "I want to be a robotic surgeon." You have to really go through the steps. We have developed a program here that ensure that the surgeons that are doing the surgery are qualified and are well versed in the techniques.

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JENNIFER HALL: Thank you very much. Dr. Molpus, can you tell us a little bit about where you're at right now in the procedure?

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KELLY L. MOLPUS, MD: Still trying to skeletonize these uterine vessels, trying to get some exposure. You know, I can't overemphasize the importance of a team approach in surgery, good assistants. We're all working together and trying to constantly improve the way we work together and assist and expose the tissue, because there's just no possibility of doing a case without all hands on deck. What I've done now is we're having a little problem keeping this in position, and so I took the third arm of the robotic system and I fixed it to the top of the uterus to try to help hold it in position.

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CHRISTOPHER STANLEY, MD: And that's a good point, because it's not just the surgeon that needs the training, the team has to be dedicated. And we have actually taken our team with Intuitive Surgical, and they've actually trained our techs and our assistants. And it's a big effort by the technicians and the employees here at Halifax Health. They really have made an effort. It's not easy for them. For example, tonight. It's 7:00, 7:15, and these people are here working hard, a lot of them on their days off and things, and it's just amazing the work

that the team's putting into it. So we do definitely appreciate that, and I think it's a statement to their commitment to patient care.

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KELLY L. MOLPUS, MD: Okay. What we see here are the uterine vessels. Here they run parallel to the uterus and the cervix, and we've got them fairly well isolated. I might take this peritoneum down a little bit more. And we're going to secure them. So here if we were doing an open case, we would pretty much take a tissue clamp somewhere in this position and come across it. And instead of cauterizing, we would clamp it, cut, and then suture ligate it. It's a series of clamp, cut and ligate when you do an open surgery. Here it's mostly cautery and cutting, and it really does still amaze me we can do a whole case with just scissors and cautery.

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CHRISTOPHER STANLEY, MD: One thing for the people at home, those instruments look rather large, but honestly they're about the size of a hairpin. The magnification can sometimes skew your perception. But the instruments are very small, and we do use cautery somewhat more freely than we used to use on our open cases because these scissors are so small and we can more directly direct the energy and the thermal spread is much reduced. Do we have other questions?

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JENNIFER HALL: We do, actually. Another question was more directed about the actual condition of the patient and more specific to the cancer type. So maybe you can tell me about endometrial cancer: how common it is, maybe the distinction between uterine and endometrial cancer.

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CHRISTOPHER STANLEY, MD: Well, that's a pretty good -- endometrial cancer, cancer of the uterus, is probably the most common GYN cancer. It accounts for up to six percent of all cancers in women. About 40,000 women a year will be diagnosed with uterine cancer. And the name uterine cancer is a little confusing. Endometrial cancer is really what we're treating here today. And the uterus is made of muscle and the endometrial lining. The endometrial lining is the glandular part of the uterus, and that's where the tissues, the cancer cells are actually growing in the endometrial cancer case. Muscle tumors, sarcomas or tissue tumors of the muscle itself, when you're having uterine contractions in labor, that's not the endometrium, that's the muscle. That's the muscle that's squeezing down. And we have only about 5, maybe 10 percent of tumors of the uterus in uterine muscle. So in a sense, all endometrial cancers are uterine cancers, but not all uterine cancers are endometrial. It's like dogs. All Dachshunds are dogs, but not all dogs are Dachshunds. But in this case, there are some definite risk factors. We see that the hairier the woman, the more likely she is to have cancer of the uterus. And this has been noticed for years and years, and we're trying to figure out exactly why. It seems like it has to do with estrogen. Estrogen seems to be the common denominator. The longer you're exposed to estrogen and the more estrogen you're exposed to without a break tend to result in more endometrial cancers. So for example, early start of your period, late menopause, you've had a long exposure to estrogen. Not having many children. You have long exposure to estrogen without the progesterone of pregnancy. The heavier the woman, she tends to make more estrogen. Fat cells don't just sit there. They're metabolically active and they do produce a certain type of estrogen that can cause endometrial lining to grow and become, in some cases, cancerous. Also some issues about possibly other factors: insulin growth factors. We see that women with polycystic ovary syndrome seem to have more problems with cancer. Now, is that because they tend to be heavier or is it because they have more insulin and it is a growth factor that causes problems with them. So the age of the patient also has some role. And I think that's just because the longer you've been alive, the more you've been exposed to estrogen. Unfortunately, we have a huge problem with obesity in this country, and I think that as the American public gets bigger, we're going to see more endometrial

cancers. Plus, as they get older in the baby boomer generation. The good thing about endometrial cancer is that it often displays itself early. It gives you an early warning sign, and that's abnormal bleeding. Nothing will get a woman into the operating room -- or into the exam room quicker than bleeding when she doesn't expect or bleeding more than she expects. So it does kind of give you a red flag, so to speak, that there's a problem there, and we diagnose early. Contrast that to ovarian cancer, where your pelvis is designed to carry a full-term pregnancy. So those ovaries can get rather large and misbehave for several years before they ever show themselves, so often we find ovarian cancer in a later stage. Uterine cancer we tend to find at an earlier stage, and that's how we can perform these surgeries because the tumor is still within the uterus. It hasn't spread out. So that's the beauty of endometrial carcinoma.

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JENNIFER HALL: Thank you very much, Dr. Stanley.

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CHRISTOPHER STANLEY, MD: Dr. Molpus, where are you standing now?

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KELLY L. MOLPUS, MD: Well, we've taken down the uterine vessels on the right side. We've isolated them on the left and we're about to take them down. I was just asking them if they could clear the field a little bit to get some of this smoke out of here.

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CHRISTOPHER STANLEY, MD: Coming down across the uterines on the side? It's hard to see from that side.

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KELLY L. MOLPUS, MD: Just trying to use that accessory arm to kind of give us some exposure there. There, now the field's clear. Thank you. So again, here we have our uterine vessels. We've kind of taken this side down. We'll come ac-- you can kind of see the tortuosity of the uterine vessels, fairly typical.

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CHRISTOPHER STANLEY, MD: Dr. Molpus, when you're doing the surgery with the cautery, do you still feel pretty confident compared to putting suture to the vessels? Does that take you a while to get used to that?

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KELLY L. MOLPUS, MD: It does take a while to get used to. You can see we had a little bit of back bleeding on the other side that troubled us for a couple minutes. But I do feel that the cautery can secure the bleeding. It does take some getting used to. Those of us who are trained classically -- open surgery, clamp-cut-suture, over and over again -- it does take some getting used to.

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CHRISTOPHER STANLEY, MD: Okay.

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KELLY L. MOLPUS, MD: So again, we have the uterine vessels here, securing them with cautery. And we're going to take them down and then free up the attachments along the left side of the uterus and cervix, includes the attachments and the cardinal ligaments and any paracervical ligaments and uterosacral ligaments. We're having a little bit of smoke. Do we have that Plume-Away in use?

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CHRISTOPHER STANLEY, MD: That's the one bad thing with the cautery, it tends to give you a little more smoke, a little more steam action there, so that can occlude your view somewhat. But in general, the view in the console, these flat monitors don't really do you justice. You actually have a much better view than what we're seeing here typically.

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JENNIFER HALL: Dr. Stanley, by your personal use, does using the robot make your job easier? I know you said earlier it makes it safer for the patient. One of our questions has more to do with how it changes the way the procedure is done.

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CHRISTOPHER STANLEY, MD: Well, in general, the procedure should mimic as closely as possible the open procedure. We have tried and true documentation and studies that show these particular procedures work when they're done open, so if we're going to do them in a different fashion, we'd better make it as close to the original as possible so we can have confidence that we're doing the right thing. But does it make it easier? It's not easier. I think it's more precise and I think that it gives us an advantage in getting the patient to treatment faster and getting her back to her quality of life. But from the surgeon standpoint, it's definitely not easier. And that's been one of the problems in trying to get people to adopt the technology. When we first started these, a case that normally would take two hours would take six. And in my practice, I can do a straight stick laparoscopy in 35 minutes robotic takes me two hours. So why would I use that extra time? What would make me want to spend the extra hour and a half. It's because I'm converting those abdominal cases into laparoscopic cases, and that's the beauty of the platform. And that's what oncology is picking up on. For generations, they had to use open procedures to do their work, but now they understand we can use the robot and do it safely and do it effectively. And with no downside to the patient in terms of cure. Now, the patient doesn't care if she goes home three days later if her cure rate's not as good. So that has to be really paramount. But if we -- you know, my career goal is to do away with open surgery. I mean, if I can finish this career and say, look, we don't do any more open surgeries -- C-section, okay, I'll give you. We'll never get a baby out with robotic arms. I agree. But I think everything else we should be able to do through tiny incisions, and that is what is going to really -- you know, that's where the future is. But it's not easy.

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KELLY L. MOLPUS, MD: Dr. Stanley, may I interject?

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CHRISTOPHER STANLEY, MD: Sure.

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KELLY L. MOLPUS, MD: I think when you're talking about those long case times, it's important to let people know that there's a learning curve with robotics that incorporates the whole team from setup, positioning, anesthesia, the surgeon, the placement of the ports. But case times with experience get to where they approximate case times with open surgeries or laparoscopy. And as centers have expanded their experience, it's been shown that the case times approximate those of open. And even though we're relatively breaking ground and are in relative infancy because we have so much more to learn and so much more to move forward in future years, we certainly have seen progress in the time we've been working and the time as we work together as a team.

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CHRISTOPHER STANLEY, MD: One of the other things we didn't mention, but just looking at that picture, there's relatively little blood loss, and that's one of the really understated benefits of laparoscopy. Because we have to pump the belly up with carbon dioxide to about 17 or 20 pressure, we have very little oozing and we can actually see so much better. So that's -- I mean, the blood supply. If you need blood, it's one thing, but if we can avoid giving blood to patients. So in radical hysterectomies especially, this is a nice benefit. Prostatectomies show a definite decrease in usage of blood products. And that's something that's very important for the patient. If she's not using a lot of blood, she feels a lot better after surgery. And if you don't have to give her blood, it really just does away with one major fear that a lot of patients have of blood-borne illness. So that's exactly -- that's a good point, Kelly, you're right. As we get better and better, the setup time is still something to deal with, but I think the operative time, you're right, we do get better and better.

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JENNIFER HALL: Dr. Molpus, what are we looking at there?

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KELLY L. MOLPUS, MD: We're looking for -- I've probably dissected a little more than I need to to get these vessels down here. Before we started the case, we put on a manipulator called a VCare manipulator. There's a cap that goes around the cervix and it helps us identify the junction between the cervix and the upper vagina. And I'm trying to -- sometimes it's really visible. This one's not quite as visible. And I'm confirming with Lisa that I am indeed pushing against the cap. So we are going to start a colpotomy, which is opening the vagina, separating the cervix from the vagina.

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CHRISTOPHER STANLEY, MD: Okay. You already got lymph nodes out on one side, is that right?

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KELLY L. MOLPUS, MD: Yes, uh-huh.

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CHRISTOPHER STANLEY, MD: And do you find that the node yield is better? Do you get more lymph nodes with the robot than with the open cases?

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KELLY L. MOLPUS, MD: It's too soon to tell. I think we certainly get comparable node yields with open cases, comparable probably, certainly in my hands better than laparoscopic node dissection. I think we do a better job robotically. Studies have shown with some of the major centers who have been doing a large volume of cases that they can get equivalent or superior lymph node counts with the robotic. So we see here the rim of the VCare manipulator, and that helps guide me as a place to separate the vagina and cervix here, and we do this circumferentially, making a colpotomy.

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CHRISTOPHER STANLEY, MD: And it's through there that you'll take the uterus out through the vagina, right?

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KELLY L. MOLPUS, MD: Yes. Hold that steady, please.

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CHRISTOPHER STANLEY, MD: In terms of patients who need therapy after -- so the patient has positive lymph nodes. Do you see a difference in the rapidity at which you can institute adjuvant therapy?

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KELLY L. MOLPUS, MD: Well, there's no doubt patients heal faster and feel better faster. I think conventionally and just the comfort level of our radiation colleagues, they typically want to wait at least four, possibly six weeks post-op before considering radiation. We haven't challenged that thinking, we haven't tried to push treatment sooner, but it's a good question and we may find that we could initiate treatment sooner if need be.

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CHRISTOPHER STANLEY, MD: And we have a question from -- does chemotherapy play much of a role in uterine cancers, Dr. Molpus?

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KELLY L. MOLPUS, MD: It doesn't. There are circumstances where if there's metastatic disease, meaning certainly beyond the uterus, and if it's gone somewhere outside of the lymph nodes, we will incorporate chemotherapy. Many times when we use radiation for pelvic lymph node -- for cancer in the pelvic lymph nodes or higher lymph nodes, we'll also incorporate chemotherapy, and there's been some studies trying to determine if chemotherapy [with] radiation is superior to radiation alone. And I think we just don't have enough data yet to clearly answer that question.

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CHRISTOPHER STANLEY, MD: You can see Dr. Molpus's fingers there are in the actuators, and whatever motion he has with his hands, it's going to be translated through the computer to the instruments inside the patient. And one nice thing is that it takes away all tremor. No matter what sort of surgeon you are, the best surgeon in the world has tremor at rest, but the robot takes away all that tremor. And it can scale things as well, so your motions can be scaled down to microscopic levels, if need be. So if you're working on eyes, cardiac tissues, things like that.

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KELLY L. MOLPUS, MD: Let's just ease that down a little bit, please, Lisa.

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CHRISTOPHER STANLEY, MD: And you see there, he's now got the colpotomy almost completely exposed there for you. And there's the actuators again.

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KELLY L. MOLPUS, MD: Move it over to the patient's right a little bit, please. Okay, don't lift it up, please, just move it over to the patient's right. I need to get to the front here.

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JENNIFER HALL: Dr. Molpus, what are we looking at there?

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KELLY L. MOLPUS, MD: I'm trying to get the uterus out of the way here to get back to this junction, this colpotomy where we're trying to separate the vagina from the uterus. I'm going to -- Lisa, can we not get that over to the right? It's kind of twisted here.

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CHRISTOPHER STANLEY, MD: Other questions we have.

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KELLY L. MOLPUS, MD: I'm going to use the fourth arm to try to give us a little -- third arm to give us a little exposure.

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JENNIFER HALL: We do have some more questions from our audience. Earlier you had talked a little bit about the link between obesity and endometrial cancer. What would be -- one of the questions we have from the audience is what has been the heaviest patient that we've been able to do a robotic procedure on.

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CHRISTOPHER STANLEY, MD: Oh, Kelly, what was that, 380 pounds? How big is our heaviest patient?

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KELLY L. MOLPUS, MD: Three hundred and seventy pounds. We've had, I believe -- I think we've had four patients now over 300 pounds.

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CHRISTOPHER STANLEY, MD: And oftentimes it's not just the weight of the patient, it's the distance between the pubic bone and the [unintelligible]. So it's kind of like how -- you've heard of women who are short-waisted. A short-waisted heavy woman is very, very difficult to work on because everything is all compressed. So weight itself can be misleading. I'd rather work on a lady six foot and 300 pounds than 5'2" and 300 pounds. But these -- and this has kind of been the issue people kind of shied away from laparoscopy for heavy, heavy women because they said it was so difficult, but actually that's the exact woman who benefits from not having a 2-foot incision in her belly -- which is not just 2-foot long; often it's 2-foot deep. And that -- well, not 2-foot deep, but it's very deep. And that is a huge, huge problem in post-op care. Wound care in heavy women is challenging at best. So we're finding now that we're getting much more comfortable using laparoscopy for the heavier patient, and actually, that might be one of the indications is doing laparoscopy on the heavy patient to avoid those large incisions. So heavy is -- we run into it all the time.

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JENNIFER HALL: What about age?

00:32:26

CHRISTOPHER STANLEY, MD: Age really has nothing to do with your qualification for surgery. You know, I have women who are 24 who are a metabolic wreck and I have women who are 88 who are in wonderful shape. It depends on how well they take care of themselves. It depends if they smoke, if they drink, if they're exercising. So age is only part of it. Age really -- it's just a number, I know, but it really does not really play that much of a role.

00:32:55

KELLY L. MOLPUS, MD: Just a minute. Lisa, did the manipulator come loose or something, because it's really twisted. We're not getting the exposure that we need.

00:33:00

CHRISTOPHER STANLEY, MD: You can see that the uterus looks a little purplish now. That means that Dr. Molpus has got the blood vessels to the uterus pretty much controlled. So blood's no longer flowing in nor out. So he can pretty much go around the colpotomy with impunity at this point most likely. You do lose some of your gas pressure when you get into the vaginal canal, and that can be a challenge, but the VCare or whatever we're using here today is likely to keep the pressure in check. So we won't lose anything. But when you lose your pressure, you can see that the organs get a little more close together and a little harder to work around the pelvis.

00:33:47

JENNIFER HALL: One of the questions from our audience is interesting is in what areas of the body do you not see robotic surgery as an advantage or even used right now?

00:33:58

CHRISTOPHER STANLEY, MD: I don't think there's much of an advantage at this point. Where it is used is cardiac, pediatric surgery, urology, GYN, some of the general surgeons. I'm not sure on the open orthopedic cases if you'd ever see a benefit there. Knees, hips, things like that. I'm not sure where we would see the utility of it. I'm not sure that we -- cranial surgery. Although you would think maybe at the base of the cranium there might be some benefit there. But I think mostly orthopedic cases, I'm not sure that they're going to see a whole lot of benefit with the robot on orthopedic cases.

00:34:39

KELLY L. MOLPUS, MD: I've separated the uterus and the cervix and hopefully we'll be able to deliver that through the vagina without too much difficulty. The uterus is kind of big -- and it's foggy, but you can tell that it's a little large. But hopefully once you get that cervix loose, if you grasp it with a ring forcep or something, because I'm not sure that our manipulator is holding it in place like it should. I feel like it slipped off of there. What you'll see here as we try to deliver this through the vagina.

00:35:10

JENNIFER HALL: So, Dr. Molpus, we see a green instrument in there. Can you tell us a little bit about what that is.

00:35:18

KELLY L. MOLPUS, MD: I'm not sure if I understand what you're asking me.

00:35:22

CHRISTOPHER STANLEY, MD: It's the colpotomy ring.

00:35:23

KELLY L. MOLPUS, MD: Oh, I see. I'm sorry, yes. That is the colpotomy ring. We attach this VCare manipulator to the cervix prior to the start of the procedure, and that's what I use to guide dissection to separate the cervix from the upper vagina. And it has an attachment to the cervix, although I think it became dislodged from the way our uterus lost position. But she's using that to try to draw that through the vagina. And usually with a little bit of steady motion and rocking, we can get that taken care of. This is just a little back bleeding coming through here.

00:35:56

CHRISTOPHER STANLEY, MD: And it's important to get the uterus out as intact as possible, because with a cancer case, you don't have the option. When I'm doing thyroid cases, I can cut the uterus in half or into many pieces, but you can't do that with a cancer case, so it's very important that we get the uterus as intact as possible. That's why they spend a lot of time gently teasing that uterus out. We don't want to spread any potential cancer cells around.

00:36:22

JENNIFER HALL: Dr. Molpus, we've got a question, if you could explain what the surgical assistants, the one right next to the patient, are doing with the robotic arms. Some of the tools in there you see are yours, and then some of them are used by the robotic assistants. So we got a question to explain a little bit more about what your assistants are doing.

00:36:40

KELLY L. MOLPUS, MD: Just as an open surgery and in laparoscopic surgery, we have someone at the bedside who uses handheld instruments to help assist, and you'll see in a little bit here, to pass suture, to help retract, to help expose, and just provide an extra set of hands wherever needed. One of the advantages of this robotic system is we can use this third arm -- I have control over these two instruments that are moving now, but if I push the clutch, now I have control of this instrument. And I use that to help us put traction on the uterus and put it in a certain position when we had some difficulty holding it in position. Okay.

00:37:24

CHRISTOPHER STANLEY, MD: Almost got that.

00:37:25

KELLY L. MOLPUS, MD: You making progress there, Lisa? Yeah, that looks like it's about to come through. Once it slides through, make sure you have our Foley balloon in to maintain our pneumo.

00:37:37

CHRISTOPHER STANLEY, MD: All right, that was my question, which one do you use to keep the pneumoperitoneum.

00:37:40

KELLY L. MOLPUS, MD: Yeah, there are a number of ways to do this. There are different ways, and we are still sort of in the trial and error phase figuring out which methods we like best and which ones help us. There's different manipulators, and we're trying them. Some centers have really developed an affinity for a certain manipulator different than this. Okay, there you go. Now you see the uterus, cervix, tubes and ovaries are being drawn out through the vagina. And she's going to place a Foley balloon now in the vagina, because we're going to lose air and we're going to lose our visibility rapidly. So I'm going to close that off while she gets a Foley balloon in the vagina, and that helps keep the air from leaking out.

00:38:19

JENNIFER HALL: That is amazing.

00:38:24

CHRISTOPHER STANLEY, MD: What are your options for cuff closure, Kelly? Do you like to use running sutures or interrupted?

00:38:30

KELLY L. MOLPUS, MD: I've done figure-of-eights, I've done where we've run it from both angles in the middle, and then kind of recently just adopted a single running closure from one corner to the next. Before we close, we're going to finish up this last bit of lymph node dissection, and then we're going to retrieve the lymph nodes and then be able to close the cuff. And I'll take a minute to sort of review the anatomy that we have available here in a minute. Okay. We got that in? Okay. Now, here I've already started. I got fairly along on this dissection. Maybe we got a little too much done before we went live. But here, external iliac artery, external iliac vein, our psoas muscle. We're down in the obturator space here.

Paravesical and pararectal spaces are open. We see an obturator vein that was isolated. This is the obturator nerve. We take the lymphatics ventral to the nerve and remove them from the space. And the reason we do this is because this is the area where lymphatic -- where the lymph nodes drain from the uterus, and so these are the lymph nodes at greatest risk if cancer is going to spread from the uterus. We hope that it does not, but if it is, this is the lymphatic system that's first at risk.

00:39:57

JENNIFER HALL: Dr. Molpus, we had a question about how big is the incision in the body.

00:40:01

KELLY L. MOLPUS, MD: Each of the instruments are put in through either an 8mm incision or our largest opening is a 12mm incision, which is, I don't know, roughly half an inch. Yeah, about dime size is good. There's an obturator vessel that wants to run with us.

00:40:18

JENNIFER HALL: In comparison to how big for an open procedure?

00:40:22

CHRISTOPHER STANLEY, MD: Well, typically 12 inches. That's a best -- it used to be traditional oncology incisions would be at least from the umbilicus, the belly button down to the pubic bone. A midline incision is the classic that everyone's taught, but that's been liberalized, and people are seeing the beauty of minimally invasive surgery. So Dr. Molpus, on your blood loss in this case, typically if it was open compared to where you are doing the laparoscopy, would you say it's half the blood loss or more, or what do you think?

00:41:01

KELLY L. MOLPUS, MD: No, I think we clearly see less blood loss. That's a generalization. You know, as soon as we clean that, we'll get a big bleeder going. But in general, we do get much less blood loss with these cases, I think in large part because the nature of the cautery and the scissors. We're forced to do preemptive strike, and I've always been a big proponent, as are most surgeons, of preventing bleeding as the best way to control it. And in these steps, you're not really going to cut tissue until you feel like you've secured it and cauterized it. So in that way, we prevent bleeding and with that have much less blood loss. And we see the obturator nerve coming up close in view here, so we're going to be careful as we get this out from the bifurcation of the external and internal iliac veins.

00:41:54

CHRISTOPHER STANLEY, MD: And do any of the nodes look grossly enlarged at all?

00:41:58

KELLY L. MOLPUS, MD: I have not seen any suspicious nodes, and I hope that's predictive that under the microscope they'll be negative.

00:42:05

JENNIFER HALL: So when you say a suspicious node, then that would be one that would be cancerous.

00:42:10

KELLY L. MOLPUS, MD: Well, it would be one that we would be concerned that it might be. If it was enlarged or if it was stuck in place, if it was firm in consistency, those things raise our suspicion about cancer in lymph nodes. So I haven't seen any suspicious nodes, but we'll need our pathology colleagues to go through this tissue and identify the lymph nodes and hopefully tell us that there's not microscopic disease. If there is microscopic cancer, we want to know that so we can treat the patient accordingly. It has been shown very definitely that doing lymph node dissection, doing staging for patients with endometrial uterine cancer, reduces the amount of patients that actually have to undergo radiation. For example, a patient would have a hysterectomy for uterine cancer, and let's say it was a large tumor that grew deep into the wall of the uterus, and then we're left with the decision-making about whether or not we should consider radiation or restage them surgically or just follow them clinically. But if we have -- and many of those patients end up getting radiation perhaps could be avoided if they underwent surgical staging. So we're proponents of trying

to get the information in one case at the onset so that we can identify patients who don't need further treatment just as we can identify those who may need additional therapy. Fortunately, with uterine cancer, about three out of four of them are confined to the uterus at the time of diagnosis at the time of hysterectomy. So we always have favorable thoughts.

00:43:52

CHRISTOPHER STANLEY, MD: One of the questions from the audience is if Dr. Molpus is sitting away from the patient, why couldn't he be sitting in a different city and do the surgery?

00:44:00

KELLY L. MOLPUS, MD: That's a great question.

00:44:01

CHRISTOPHER STANLEY, MD: Dr. Molpus, is that something that -- what do you think about that?

00:44:04

KELLY L. MOLPUS, MD: Well, I'll have to give thought as to which city I'd like to be sitting in, I guess. The thought of remote surgery is not such a foreign concept, and in some ways that's where this technology was derived from thoughts of doing that. In fact, I think thoughts of using remote surgery in the battlefield to keep a surgeon safe to provide surgical care to soldiers in the heat of battle, and there have been demonstrations of using these techniques remotely from one location to the next. I don't think we'll ever get to a point where we replace the comfort of actually having the physician involved being directly present. But certainly opens up a lot of possibilities.

00:44:57

CHRISTOPHER STANLEY, MD: So what you just pulled over to the right side there, that's a lymph node bundle, is that right?

00:45:00

KELLY L. MOLPUS, MD: Yeah, this bundle comes out usually en bloc, meaning in one specimen. I'm going to have Lisa retrieve these, and then I'll kind of go over the space, the lymphatic beds in the anatomy. I'm going to have Lisa -- there's lots of ways to retrieve these. We just come in transvaginally with Endocatch bags. So, Lisa, whenever you're ready.

00:45:25

JENNIFER HALL: Can you tell us a little bit more about how that is retrieved, Dr. Molpus?

00:45:30

KELLY L. MOLPUS, MD: Yeah, I tend to just take the bundle and put it anatomically in its place of origin until we're ready to retrieve it. And in here, see, it just kind of looks like fatty tissue, but there's lymph nodes all through here. Here's a lymph node here. It's our pathology colleagues who will go through here and separate this out, identify the lymph nodes, and then put the lymph nodes under microscopic exam to determine whether there is or is not cancer spread to them.

00:46:00

CHRISTOPHER STANLEY, MD: So you'll be getting three separate -- you've got the right and left pelvic and then the aortic lymph nodes all separate specimens?

00:46:05

KELLY L. MOLPUS, MD: Yes, uh-huh.

00:46:07

JENNIFER HALL: And then how are you retrieving that?

00:46:10

KELLY L. MOLPUS, MD: We are -- you'll see here in a minute, Lisa will come in with an Endocatch bag that she'll introduce transvaginally. That's one method. You can -- we have an accessory port on the abdomen. We could introduce it that way. Some surgeons will actually introduce the Endocatch bag through their abdominal port and they'll just secure it and then they'll drop it down in the pelvis and then retrieve it later. They'll push it out through the vagina. So there's a number of ways to do this. And we've used this with

reasonable satisfaction. Lisa, whenever you're ready, we're ready to retrieve the lymph nodes. This first specimen will be right pelvic lymph node, so you'll see that is a tip of a Foley balloon that we have in there partially occluding the vagina to keep the air in. Just ease to the patient's right a little bit. Ease to the patient's right a little bit. There you are. Just come to the right. Okay. One of the problems is you lose a little air with this method.

00:47:22
CHRISTOPHER STANLEY, MD: And that makes it a little bit of a challenge.

00:47:24

KELLY L. MOLPUS, MD: Go ahead. And usually we have a little better pneumo-occlusion there. Okay. So go ahead and lift that up there, Lisa. So we'll put that in the bag and raise that up. Go ahead and close that bag. Let me see. Yeah, everything will be going for permanent evaluation. Please go ahead and close that up, Lisa. And next time see if you can't maybe put a little more air in that balloon or something, because we lost pretty much all of our pneumoperitoneum.

00:48:00

CHRISTOPHER STANLEY, MD: Well, a question came in, what's pneumoperitoneum? Pneumoperitoneum is where we pump the belly full of CO2 gas, and that allows us to have the organs separate. It also keeps blood from oozing anywhere. And you need it to be able to see, because without the pneumoperitoneum, everything would just fall down on each other. And when you would breathe, you'd not be able to see anything. So the pneumoperitoneum is key. Once you lose that, it's very difficult to appreciate your tissue planes and appreciate your anatomy.

00:48:34

KELLY L. MOLPUS, MD: That could be a strong argument against this technique today since we've lost all of our air. We normally have an ability to maintain it so it's not so troublesome, but when you lose air, you do lose your visibility, and that's a good demonstration of that when we saw everything sort of collapsing down. Lisa, it might help to reestablish some pneumoperitoneum before we try to put anything.

00:48:56

CHRISTOPHER STANLEY, MD: So we had a question about -- from a doctor, it says, "How do I start a robotic program?" And I'll tell you that our experience, it's very capital-intensive, labor-intensive, and I would think that you really have to be dedicated to the robot. There's no dabbling in robotics; you have to go full steam. And you have to approach it to your hospital as a business proposition for them. Hospitals, if you talk to them in the sense of a businessman and you explain to them, "This is the capital we'll spend, this is our return investment, this is why it's better for the patients, for the doctors, for the hospital," talk on their terms, they'll believe you. But you've got to have the volume to support it. And it's not the kind of project you put up in Turks and Caicos Islands. I mean, you have to have volume to get this program up and running. You cannot reinvent the wheel every time you do a case. So I would think you need at least three or four, maybe five cases a week on your program. Explain to the people involved that it's in some ways a leap of faith, but if you have the volume, if you have the dedication, and if you have the people that are interested in it, I think you can do it. But it's probably not for every small hospital. I think what you end up seeing is regional centers of excellence and situations like that where the best people go to the best institutions and do the best work.

00:50:22

JENNIFER HALL: How common is the da Vinci among surgery centers in Florida and in the U.S.?

00:50:27

CHRISTOPHER STANLEY, MD: Well, ten years ago there were none, so it's taken off. When we first got the da Vinci S system, we were one of, I believe, the first 35 to have one. So the older da Vinci system, as good as it was, of course is nowhere near what we have here we the extra arm and the extra visualization. Worldwide, robotics are taking off. We have

worldwide conferences now and meetings and seminars. I think in the state of Florida, Orlando has a few centers, Jacksonville, but until you get into Melbourne, our area is the only one serving the east coast in that geographic area.

00:51:15

JENNIFER HALL: Another question we had was, what other types of procedures -- I mean, we're seeing a gynecologic oncology procedure here tonight, but what other types of procedures do we do here at Halifax Health using the robotic system?

00:51:26

CHRISTOPHER STANLEY, MD: Right now it's gynecologic oncology, pelvic support, and hysterectomies that myself and my colleague Dr. Baldwin did. And urology -- Landrigan and Womack and Blackmon -- are getting involved in robotics in prostates now. When you look across the country, prostates are really where the robot's really taken off. And I do believe that if I'm ever in that situation, I would want a robotic prostatectomy. But other applications, we try to get the cardiac guys involved. I think in some areas, cardiac surgery is very interesting because they can actually repair valves instead of replacing them, which is a huge, huge benefit. We'll go back to what Dr. Molpus is up to. So did you get the other nodes out?

00:52:15

KELLY L. MOLPUS, MD: We're having a problem maintaining the pneumoperitoneum here for a minute, and with that comes a struggle, as you know.

00:52:26

CHRISTOPHER STANLEY, MD: Kelly, how would you compare laparoscopic suturing with straight sticks versus laparoscopic suturing with the robot? Any comparison?

00:52:35

KELLY L. MOLPUS, MD: Well, I think robotically -- I tell you what, Lisa, this is not working. Put the balloon back in the vagina and we'll retrieve the lymph nodes from up top or something, because I don't have any visibility.

00:52:48

CHRISTOPHER STANLEY, MD: I'll tell you, we have used straight stick laparoscopy for years to do surgery, and it is like tying your shoes with chopsticks in a mirror. It's taken me 20 years to do it and I can do it really well, but the robot allows almost anyone to go in there and do detailed surgery with very, very little learning curve. Now, that can be a plus or minus, some people could argue, but I do think the skilled surgeon is going to do much better. But it may even the playing field so you won't have to spend 10, 15 years learning the techniques of laparoscopic suturing. You can actually get in there and get to it pretty quick. The point is if we get to see any suturing, it is so facile and it is so intuitive with the robot. It's a huge advance. And really, it's opened up these minor -- or these major procedures in the minor incisions, the ability to suture with confidence.

00:53:43

JENNIFER HALL: We actually had a question kind of to that point. Someone wrote in and they said, how much are the movements of the surgeon scaled down at the instrument? And is it continuously varied depending on the intricacy of the task at hand or is it generally set for the duration of the procedure?

00:54:01

CHRISTOPHER STANLEY, MD: Task at hand?

00:54:02

JENNIFER HALL: Complicated question.

00:54:03

CHRISTOPHER STANLEY, MD: It is a complicated question. I don't know.

00:54:08

JENNIFER HALL: She's just asking, you know, how much are the movements scaled down at the instrument?

00:54:15

CHRISTOPHER STANLEY, MD: It kind of depends on how close you are. Well, you can modify it at the console. The surgeon has that ability. So if I'm doing a tubular anastomosis, I want very little motion. I want a lot of scale. I want this to be this when it's in the patient. But if I'm doing a major organ, if I'm cutting around the uterus or taking out an ovary, I don't need that scale as much. But the fine, fine microsurgery, the scaling makes a big difference. Yeah.

00:54:47

JENNIFER HALL: Some of the other questions we got are about criteria of selecting a patient for robotic surgery. So for example, someone with endometrial cancer, what's some of the criteria that you would look for when trying to decide whether to use robotic surgery to treat them?

00:55:04

CHRISTOPHER STANLEY, MD: I think specifically endometrial cancer, if the patient's a surgical candidate, which means if the disease is limited to the uterus and not extended to the pelvic sidewalls, to the bladder, to the lower vagina. If you can with confidence try to -- if you can feel that you can get that tumor out and not kill the patient and not have her have horrendous complications, then she's a surgical candidate. Once you decide she's a surgical candidate, then she's almost always going to be considered for the robot. But again, if she has bad pulmonary function or maybe horrendous surgical history with adhesions, maybe you would want to shy away from that. But once you deem her a surgical candidate, that does open the door to potential robotics.

00:55:45

JENNIFER HALL: Would you say that robotic surgery is the best method for women with endometrial cancer?

00:55:49

CHRISTOPHER STANLEY, MD: I would say whatever cures her, gives the best cure rate is the best. I mean, I don't think you can make a blanket statement that any one procedure or one rationale for treatment or one therapy course is better than the other. It depends how the patient presents. But I like the robot. I think it does make a big difference in patients' quality of life, it really does. Dr. Molpus, where do we stand? Are we getting close to suturing?

00:56:16

KELLY L. MOLPUS, MD: Yeah, we're going to go ahead and close up the cuff and then we're going to get a better insufflation here in the peritoneal cavity. And then we'll take the remaining lymph nodes out from above through the accessory port. We kept losing our pneumoperitoneum, and with that we lost visibility for trying to take them out transvaginally. I'm not quite sure why we had such trouble with that. It usually works reasonably well.

00:56:47

JENNIFER HALL: Will we have the opportunity to see them be taken from above?

00:56:54

KELLY L. MOLPUS, MD: I don't know.

00:56:55

CHRISTOPHER STANLEY, MD: No, I think taking them above is taking them out through the trocar. Are you going to be able to do any suturing on film for us there, Dr. Molpus, or not?

00:57:04

KELLY L. MOLPUS, MD: Well, I'm patiently waiting for a suture to arrive.

00:57:10

CHRISTOPHER STANLEY, MD: That's a good deal.

00:57:13

JENNIFER HALL: We actually had a question about where can people find out more information about endometrial cancer. And we do have a slide that we can put up there, which is actually slide four, if you wanted to put that up on the screen just so people know

where to go if they have questions about endometrial cancer. So, Gynecologic Cancer Foundation. Their website is thegcf.org.

00:57:46

CHRISTOPHER STANLEY, MD: And Kelly, are you using the Vicryl suture on that? What suture are you using?

00:57:50

KELLY L. MOLPUS, MD: Yeah, this is a 2-0 Vicryl. No, this is a 0 Vicryl on a 2-0 needle it's wedged on. And we're going to just try to run this cuff here.

00:58:06

CHRISTOPHER STANLEY, MD: What are your views on delayed absorbable versus the Vicryl? Do you think there's any benefit to the cuff stability?

00:58:13

KELLY L. MOLPUS, MD: Well, I think this is delayed absorbable in such that four to six weeks we usually see this dissolve. I think it's good suture for the vaginal cuff. I think it heals well, doesn't seem to cause issues with pain or much in the way of granulation tissue. Let's see, is this caught here?

00:58:38

JENNIFER HALL: And what's the difference between those two suture types?

00:58:42

CHRISTOPHER STANLEY, MD: There's a suture -- like Dr. Molpus was saying, these sutures here will dissolve or lose about 50 percent of their tensile strength in about four to six weeks. There's another type of suture which almost looks like fishing string but lasts for about 90 days. So there can be some debate about if that's a good thing to have or not. And a lot of times it's just how you were taught to do it and what your preference is and what your experience is. One thing we don't want to have happen is have that vaginal cuff open up on you. And sometimes, as Dr. Molpus alluded to earlier, the radiation therapists are very worried about that if they have a cuff dehiscence, when the cuff opens, because right above that vaginal cuff is intestine, and if that cuff opens up, intestine comes out, and that's a bad problem. So we don't want that to happen. But we can see here, one thing you have to notice is that needle is very -- I would say that needle is less than the size of a paper clip, but there it looks huge. So everything that you do with the robot is magnified, and that's one thing it will take you a little bit of time to get used to.

00:59:50

KELLY L. MOLPUS, MD: Yeah, magnification is certainly beneficial, but it is an adjustment. Everything, small little bit of breathing, looks like a hemorrhage, tissue looks very thick, you think you're in the wrong plane until you get used to just how it looks under this three-dimensional 10 magnification. But in the long run, it's certainly beneficial. It does, like everything with this, there's a little bit of an adjustment. I tend to get every layer of the vaginal mucosa, including the corner angles where the uterosacral ligaments, the support structures here at the corners. I like to include the posterior peritoneum. I think that gives a more secure closure, better healing. I'll have you just hold that, please, Lisa. Why don't you grab that with the tip? I mean, regrab? There you go. With the tip.

01:00:49

JENNIFER HALL: Dr. Molpus, it seems that we have just a few minutes left. Do you want to talk at all about some of the things that the audience might not be able to see once we close?

01:00:59

KELLY L. MOLPUS, MD: Well, I think just the motion of the tips of these instruments, as I'm showing here, and the ability to sort of follow the normal wrists. Like when we throw a suture in an open case, we sort of just roll our wrist accordingly. And that's a lot harder to do in standard laparoscopy. It's hard to tie knots, and this, too, takes some learning. But it's more likened to the suturing that we do open because we do have the wristed instruments and we have the degrees of freedom and mobility that we don't have with a

standard laparoscopy. So it's like getting many versions of our hands in here to accomplish the task. Lisa's just holding that on tension so we can run this across.

01:01:50

JENNIFER HALL: And did you have something to say, Dr. Stanley?

01:01:52

CHRISTOPHER STANLEY, MD: Are you using a lapro tie on that, Kelly?

01:01:54

KELLY L. MOLPUS, MD: I put a lapro tie on the first end. We've done both. We can tie them down or we can secure that first edge with a lapro tie, just kind of holds it in place.

01:02:07

JENNIFER HALL: And we've had an abundance of questions, so I apologize to those that we weren't able to get to this evening, but I do have a couple more. We had a question about are we planning to do any more live surgeries here at Halifax, and the answer is actually yes. You can stay tuned to our website at halifaxhealth.org. Actually, you could put up slide five and we could show that. Halifaxhealth.org. We do have a few more live surgeries that we're planning in the upcoming months. We're having to do a neurosciences procedure, an orthopedic procedure, a cardiac procedure. So please check back in with us and those dates will be posted on halifaxhealth.org's website. So that was the answer. Dr. Molpus, what is left of the procedure that our audience would not be able to see? What's still left until completion?

01:03:10

KELLY L. MOLPUS, MD: Well, we're about to finish up here. We're closing up the vaginal cuff. We'll secure that. We're going to retrieve the lymph node bundles that we dissected, and then basically we'll check all the sites and make sure everything is dry, hemostatic, no significant bleeding. And then we'll go back up top and close up the incisions from the laproscopic instruments and pretty much be through.

01:03:37

CHRISTOPHER STANLEY, MD: Well, any other questions you want to review before we sign off? Okay. Kelly, anything that you want to -- any acknowledgments, anything you want to say?

01:03:53

KELLY L. MOLPUS, MD: Sure. Let me just park this here and I'll tie that off in just a minute. I'd like to thank everyone for joining us, all of those of you who logged on, and those of you who are in our hospital audience, I hope you found some of this educational. You can see with live surgery there's always a couple little tricky spots or speed bumps and you have to work around them. But that's true, goes on every day in the operating room. This patient's going to do very well. The great benefit of this minimally invasive surgery that we cannot demonstrate today is how well patients do and how the vast majority of our patients go home on postoperative day number one. And I suspect by tomorrow afternoon she will be feeling well enough to be discharged to home. I'd like to thank our moderators and surgical team that you've met earlier and I'd like to thank Intuitive Surgical, OR-Live and also Halifax Health. Most importantly, I want to thank this lovely lady who by no choice of her own became a patient because of her cancer. But she entrusted us with her healthcare and was very, just a charming individual who was thrilled to help us out with this educational endeavor. We'd like to thank her and all of our patients who entrust us with their care, and certainly that's a responsibility we take very seriously. So with that, we'll sign off and I wish you all a very good evening. Thank you.

01:05:10

ANNOUNCER: Thank you for watching this robotic-assisted laparoscopic gynecological oncology case brought to you live from Halifax Health in Daytona Beach, Florida. OR-Live makes it easy for you to learn more. Just click on the Request Information button on your webcast screen and open the door to informed medical care.

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