Transcript Details
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Robotic Surgical Advances for Prostatectomies

Prostate cancer patients have lot of alternatives one of them is prostatectomy through the robotic surgery. How is that working out? You are listening to ReachMD XM 157, the channel for medical professionals. Welcome to the clinician's roundtable. I am your host attorney and Dr. Bruce Bloom and our guest is Dr. Ash Tewari, Director of Robotic Prostatectomy and Prostate Cancer, Urologic Oncology Outcomes at the Brady Urology Institute and Associate Professor of Public Health and Outcomes at the Weill Medical College of Cornell University. He is also an Associate Attending at the New York Presbyterian Hospital. Dr. Tewari joins us to talk about prostatic robotic surgery for prostate cancer.

DR. BLOOM:

Dr. Tewari, welcome to ReachMD.

DR. TEWARI:

Thanks for having me here, Dr. Bloom.

DR. BLOOM:

So let us talk about the early development of robotic surgery. When were they first developed and where did they come from?

DR. TEWARI:

I think they were done a couple of decades ago and they were supposed to help NASA and Department of Defense getting a surgery done an astronaut or to a soldier who was on the battlefield. This tool came in hands of a surgeon and we started looking out that possibly this could help in deep-seated surgeries inside the body. Since it gets some magnification and the instruments are very precise and small, I think it made sense for prostate cancer surgery and thousands and thousands of prostate cancer surgeries (1:30) have been done using this tool.

DR. BLOOM:

How long have you been doing it and what have you seen as the changes in the way the surgery has been done since it started?

DR. TEWARI:

I have been doing it for last 7-8 years and I have seen this field evolving quite rapidly. First of all, there has been a tremendous acceptance from the urological community in embarking upon the robotic surgery. Having said that, I still think that the robotic surgeons are kind of benefiting from the work done by seasoned open surgeons who have actually established the foundation for the prostate cancer surgery and they still are doing a great job even without the robots. So robotic field has evolved because the surgeons were looking over the shoulders of these giants in open surgery, like work done at Hopkins which established the foundation for the nerve sparing procedure. However, we see that this field is evolving quite rapidly. We anticipate that may be over 45,000 or 50,000 of these procedures will be done every year in the coming years. Our institution itself does over 700 of these and I personally do over 600 of these surgeries every year. Prostate cancer is one of the commonest indication, but other surgeries could also be performed and we can talk about it during the next sections of this discussion.

DR. BLOOM:

Do you foresee a time when all surgery will be done using robotic surgeons?

DR. TEWARI:

I think I have spent enough time in the field to learn to never say never (3::00) and never say always, so I think this is an important tool. It will depend on how we use this tool for surgery. This seems to be making a major impact. Well, I think this will be one of the arms for treating prostate cancer, open and other surgical modalities will be there and they will make an important contribution.

DR. BLOOM:

Is the cost of the equipment and the training for it something that would keep a medical institution from implementing this kind of robotic surgery.

DR. TEWARI:

At this point, I think there are over 500 machines in US alone, so cost has not been a factor at this point for the major hospitals and even the community centers to acquire a robot. Training, I think that is important, I am not sure just because of the cost issue, but just because we are going to work on a patient, a patient who is a father of someone or a husband of someone and needs the best chance of getting the cancer controlled, getting the incontinence controlled and getting the sexual function back, and for that I think we need to learn this operation. There are two kinds of learning we need to think about it; one, to get used to of using a robot, secondly just to know how to do this radical prostatectomy and just the fact that I have a robot it does not allow me to think that I know everything about this operation as such. There are very competing goals in this surgery and the margin of error is very minimal and that is why I think it is one of the most humbling surgeries (4:30) where utmost training is required.

DR. BLOOM:

Do you see a time when there would be adjuncts to robotic surgery like things that will help the surgeons see in the field which are the nerves and which are the cancer cells?

DR. TEWARI:

I think you are touching on the major area of my interest because this is the first time actually there is a computer interposed between the surgeons mind, eyes, and hands, and the patient's body. This computer allows for the integration of data from the other sources and I see in the near future that there will be realtime imaging of the cancer, of the structures around the prostate, of the nerves that a surgeon should be able to incorporate into the surgical field in the real time and act accordingly to possibly get a better outcome in terms of the nerve sparing, in terms of the incontinence control, and obviously in order to get all the cancer back.

DR. BLOOM:

If you have just tuned in, you are listening to the clinician's roundtable on ReachMD XM 157, the channel for medical professionals. I am your host Dr. Bruce Bloom and I am speaking with Dr. Ash Tewari, Director of Robotic Prostatectomy and Prostate Cancer, Urologic Oncology Outcomes at the Brady Urology Institute and Associate Professor of Public Health and Outcomes at the Weill Medical College at Cornell University about robotic surgery for prostate cancer.

Is there a difference in the amount of time it takes between robotic surgery (6:00) and conventional surgery and is there a difference in cost between the two?

DR. TEWARI:

The timing is in function of experience. I take anywhere between 60 minutes to 80 minutes for finishing the robotic part and it takes another 30 to 45 minutes for finishing the opening and closing of the incisions and that is I think pretty comparable to any other kind of surgery for prostate cancer. This is not a surgery to be done in a rush. This is a surgery in which we need to take as much of a time, as much of a love and affection we can do during that time to get the job done.

DR. BLOOM:

Answer to the question?

DR. TEWARI:

No, I do not think there is any difference in the timing as to how long it takes for finishing a robotic surgery versus any other kind of an open surgery.

DR. BLOOM:

During the surgical process at what point do you engage the robot? Does it do the initial incisions, does it do the suturing at the end or is there some conventional surgery, then robotic surgery, then conventional surgery?

DR. TEWARI:

I think the initial incision on the skin is made by the best robot in the world and that is the human hand and that connects the robot to the body and it takes about 10 minutes for that part of the surgery and then the rest of the operation is done with the robot and then finally the best robot comes in and that is to close the body through the real human hands.

DR. BLOOM:

Let us talk a little bit about the early training when you are doing robotic surgery? Do you start out by doing the training on people or are there some training sessions where you are doing it by computer or something else? (7:30)

DR. TEWARI:

I think the time when I was doing it, there were no formal training because this was very new, so I kind of learned it on inanimate models and I learned it on anatomical structures and the cadavers. I still remember I must have spent thousands of hours dissecting the cadavers and spending time to learn this operation using a robot and then laparoscopy to get acquainted with the views which we were getting, the magnification we were getting, the approach was different, and the texture was different and slowly I got better and then, of course, I used the patients and I have done a couple of thousands of these surgeries and I still think I am learning, but now the increment of learning is a little lesser and we focus on one particular aspect and try to master that. We do have a training program here where hundreds of people come to Cornell for the robotic training. We run live surgical seminars and then we just had one in which I operated from New York and it was telecast in Orlando during the national meeting and a couple of hundred people were there in the room looking at things in 3D and asking questions and kind of seeing what I do. Same way, about another thousand people come to Cornell program every year to kind of get acquainted with the robot, learn about the technique, and learn about the new answers of this operation.

DR. BLOOM:

Do you foresee a time when medical students and residents and fellows will only learn (9:00) robotic surgery for prostatectomy or will they always learn both the conventional and the robotic?

DR. TEWARI:

It is an interesting question and it bothers a lot of people, even me, that robot is one kind of surgery, and I hope surgeons do not get just compartmentalized to either being an open surgeon or a robotic surgeon. Surgery is a surgery and surgery what it means is that we know what structure in the body needs to be fixed. We should know how we are going to do that, we should know how to handle tissue, we should know how to put it all back together and then whether we do it with a conventional open surgery in which instruments are in our hands or instruments are being controlled through the robot and we should know both ends because sometimes if the robot is not working, we should be able to handle all that. This generation like mine is very lucky that we have had very extensive training in an open, I mean, that is all what we did till about 8-9 years ago and now we are doing robots, so we have a benefit, but I think the next generation will have to find a fine balance as to they know enough about the open. They should know enough about surgery as such and then they are very good in robot too.

DR. BLOOM:

Where else in the body besides the prostate is robotic surgery being done?

DR. TEWARI:

There are a lot of organs, I will focus today mainly on the urological one, and kidneys are being operated on, partial nephrectomies (10:30) are being done, pyeloplasties are being done, ureter is being reconstructed, cystectomies are being done. A lot of other lymph node dissections are being done for all kind of tumors. From an OB-GYN standpoint, the hysterectomies and myomectomies are being done. Any kind of an abdominal operation can be done, has been done, and I have seen some expert surgeons doing a Whipple procedure, obviously that is not the field of interest which I work in, and cardiac surgeries and other kind of surgeries are being done where precision is important, where reconstruction is important and where the field is very deep and narrow. So there are many indications of this robot at this time.

DR. BLOOM:

Can you use the same robot for all those different surgeries or they have to put different instruments or move it to a different spot?

DR. TEWARI:

I think so, especially the newer robot have got a wider range of movements so that they can cover different quadrants of the abdominal cavity so the same robot can be used. There may be a difference in the instrument which we use, some people like scissors, some people like a finer forceps, some people like a different kind of a needle drivers, but they all can be connected to the same robot.

DR. BLOOM:

Other times during your surgery where you have to pull out one of those arms and change from one instrument to another then put it back in or do you use the ones that you start with?

DR. TEWARI:

No, no, no. I am very particular in using the right instrument for the right part of the operation, and in order to do it very delicately, I change instruments many times.

DR. BLOOM:

Well, future physicians are going to learn different ways of doing different surgery than they know right now (12:00). Physicians are using more technology every day to improve patient outcomes. I want to thank our guest, Dr. Ash Tewari, Director of Robotic Prostatectomy and Prostate Cancer, Urologic Oncology Outcomes at the Brady Urology Institute and Associate Professor of Public Health and Outcomes at the Weill Medical College at Cornell University for talking to us about robotic surgery for prostate cancer.

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This is Dr. Glenn Flores with UT Southwestern and Children's Medical Center in Dallas and you are listening to ReachMD XM 157, the channel for medical professionals.