

BECKER'S SPINE REVIEW

Spine surgery firsts: How Dr. Juan Torres-Reveron prepared for the first ROSA Spine robot-guided lumbar fusion ^{Featured}

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In April 2016, Juan Torres-Reveron, MD, PhD, performed the first spine surgery using Montpellier, France-based Medtech's ROSA Spine robot. Dr. Torres-Reveron, a neurosurgeon with Premier Health's Miami Valley Hospital in Dayton, Ohio, performed a two-level lumbar spine fusion.

Being the first person to perform a procedure with a new piece of technology or new technique can be daunting. Here, Dr. Torres-Reveron discusses how he handled the nerves leading up to the surgery and shares advice for other surgeons taking on professional firsts.

Question: How did you prepare for performing the first procedure with a ROSA spine robot?

Dr. Juan Torres-Reveron: I had used the ROSA robot for brain surgery in the past, and hence had some familiarity with the procedure. For the spine surgery, we had several rounds of preparation in the operating room with everybody involved in the procedure. There are so many moving parts — for example, the radiology technicians, who manage the O-arm, they need to understand how to move their equipment in relation to the robot and where it needs to go. So we ran through the procedure and did a couple of dry runs using models. We were trying to mimic the surgery and find the glitches. Once we were happy and had identified the potential problem points, we put together a timeline for the procedure and then followed it.

Q: What did you do the night before? How did you deal with the nerves?

JTR: We did a final dry run the night before, so that on the day of the surgery everyone knew what to expect. It's nerve-racking because you are trusting this robot to guide you.

You are always concerned and you want everything to go well, just like every other surgery. We did our due diligence and practiced. Up until the moment of surgery, you are nervous. It's like a marriage. Until you sign the dotted line, it's not done. It's not done, until it's done. I got a good night's sleep and just went for it.

Q: What was the best moment of the surgery for you as the surgeon?

JTR: During the first part, we acquired the images and planned the trajectories. We used the robot to place the K-wires and drill into the bone. I then took the robot back and we took an image.

That is moment you take a breath. You hope the placement is perfect and that's the moment you can say — we are in the clear. After that the tricky part is over. After the placement of the K-wires, it's back to conventional MIS surgery.

Q: How has robotic surgery changed over the past decade?

JTR: In spine, it hasn't been a big boom. In other specialties, it is immensely popular. The da Vinci robot transformed general surgery, OB-GYN and urology procedures, for example. The system allows surgeons to have this view they didn't have before.

In spine and brain procedures, the use of robotics is lagging. For spine it's been slower than in brain. We are going through two jumps in spine right now. The first is from open to MIS. Even though the long-term data supports it, the adoption is slow. And then there is that second hoop — robotics. I think it's going to be the future, and device companies are seeing that too.

The fact that Zimmer Biomet and Medtronic are acquiring robotics-focused technologies shows that big companies are recognizing the importance of robotics. In 10 to 15 years we will be where the da Vinci system guys are now. In the next decade, that is what you will see. Robotics will become the standard of care.

Q: What trends do you see for robotic surgery in the coming decade?

JTR: For spine-focused robotics, we are probably going see a move toward trying to make the procedure faster. The faster we can perform the surgery effectively, the faster we can get the patients off the table, which helps reduce risk of complications. There is still going to be a need for open procedures. For example, the ALIF procedure isn't going to go anywhere. But speed and accuracy will be the focus with regard to robotics. We are going to see a speed and precision improvement.

Q: What advice do you have for other spine surgeons about to perform a spine surgery 'first'?

JTR: The team is key. Remember, you are not an island. You can be the best, but if your team is not up to speed and with you in the endeavor, you will fail. My team and I spent an inordinate time getting trained and up to speed. My team in the OR is second to none, and they understand that if it

is a surgery first they need to put in the time to get trained and work with me. If there is even one cog in the machine that doesn't perform, you end up in trouble.

For those surgeons interested in doing procedures they have never done, touch base with a surgeon who has done it. Meet with them and ask them how they did it. Talk to them about how they resolved any issues that came up, so you can feel more comfortable. For those interested in trying ROSA, we have a training center, called the Brethen Center, where surgeons can come and work with the device prior to trying them at their institutions.

Read the article here: <http://www.beckersspine.com/spine/item/34326-spine-surgery-firsts-how-dr-juan-torres-reveron-prepared-for-the-first-rosa-spine-robot-guided-lumbar-fusion.html>