BroadcastMed | Ventricular Assist Device Surgical Procedures and Post-operative Care (2 of 3 part video series)

GAYATRI ACHARYA: Hi. I'm Dr. Gayatri Acharya at Mayo Clinic. I'm here today with Dr. John Stulak, cardiac surgeon specializing in VAD surgery, Dr. Sudhir Kushwaha, director of the cardiac transplant and VAD program, along with Ms. Sarah Schettle, VAD coordinator for Mayo Clinic. Thank you for being here today.

ALL: Thank you.

GAYATRI ACHARYA: Today, we will be discussing VAD surgical procedures and post cares for our patients Dr. Stulak, can you inform us of the specifics involved in implanting of VAD?

JOHN STULAK: Absolutely. I'd love to. When I talk to my patients I tell them this is open heart surgery. For the multitude of patients, we do go through the breast bone. The miniaturization of the pumps as they've evolved through time have gotten smaller, and so that allows us for alternate implant strategies, where a cut between the ribs may be appropriate for some patients.

That is especially appealing in the bridge to transplant patients, if we're able to do a sternal sparing approach. Many times, patients have had surgery before. There's some patients that have valvular problems that need to be addressed at the time of surgery. Through our multi-disciplinary approach, we really examine all the problems that need to occur with the patient, not only what pump we're implanting, but if any valves need fixed, and then the implant strategy.

I tell patients, this is a lengthy procedure. And in a destination therapy patient, even though we won't be planning specifically to go back, we always do, in part, certain techniques to make any subsequent explant less morbid for the patient and to enhance recovery. So there's many things I talk to the patient about that.

The patients are typically in the intensive care unit for a week, and then usually in the hospital between two and three weeks. So typically, if we're able to optimize the patient before surgery, they tend to do very well with this operation.

GAYATRI ACHARYA: Dr. Kushwaha, what can our patients expect as they transition out in the recovery phase?

SUDHIR KUSHWAHA: Well, as Dr. Stulak just mentioned, there are two aspects. One is recovering from the surgery, and that involves usually a few days in the ICU while medications are adjusted and the device parameters are adjusted. And then, once the patient is out on a regular cardiac floor, their recovery includes gradual mobilization, getting used to the device, getting used to the settings, making changes with the batteries, and so forth.

And then, typically, most patients will need a period of rehabilitation. Now, everybody's physical condition varies. So some patients come into this much stronger than other patients, and other patients might need a more prolonged period of time in recovery. And we actually have a specialized rehabilitation unit in St. Mary's Hospital where patients are looked after, and they typically go through about two weeks of a rehab program to get them back into good physical condition.

And really, what we're dealing with there is the consequences of the heart failure they've had prior to the VAD implant. That's what they're recovering from because, typically, they've lost a lot of muscle mass. They become significantly weaker than they would be. Their kidneys may not have been functioning so well. So there's a number of aspects to it.

We try and individualize care for all of our patients. And in that regard, our VAD coordinators really work very closely with them.

GAYATRI ACHARYA: Great. Sarah, any comments on their recovery?

SARAH SCHETTLE: Yes. We certainly do educate patients before they have the surgery about what to expect post-operatively and how long they may plan for spending time in the hospital. Certainly, engaging our colleagues from physical therapy and occupational therapy throughout the hospital continuum is important to the success of these patients. And then, whether they are able to participate in the inpatient cardiac rehabilitation unit or continue with their therapies on the outpatient basis, they have that structure in place from the hospital stay.

Education is incredibly important to allow patients to feel comfortable in managing these devices when they go home. As Dr. Kushwaha has pointed out previously, we do do a good job of trying to teach them all of these things. And really, it's enough that really anybody can grasp or understand how to do this with enough practice , and that's what we really try to enforce in the hospital setting-- what to do, how to change the batteries, and how can you live on a day to day basis with these devices and allow them to enhance your life and get you back to that quality of life that you want to have.

GAYATRI ACHARYA: Dr. Stulak, can you comment on the current outcomes from VAD implantation?

JOHN STULAK: Absolutely. Just as we talked about the evolution in devices, the outcomes after implantation of these devices have also evolved. For every era you look, starting from long ago eras up until the current era, we have seen a steady improvement in survival, to the point where, at three years, we are rivaling the outcomes after heart transplantation.

While some of the technology the devices limit us forever perhaps reaching that, I would say the general outcomes in the contemporary era are the best we've ever seen. And even commercial use, outside of the rigors of a clinical trial, commercial use of these devices have demonstrated improved survival.

So whether it's a sick bridge to transplantation patient, where they may not survive the rest of that year, we obviously know that outcomes after as a bridge to transplant successfully gets them to a transplant in the majority of cases. But then, for destination therapy, every clinical trial has shown that this is superior to medical management for patients who are not transplant candidates.

So as the devices have evolved and technology and implant knowledge and in our comfort with everything associated with this device, so have outcomes improved through time.

GAYATRI ACHARYA: That sounds like a really positive thing for our patients. Sarah, how do you help transition this patient back to the referring physician?

SARAH SCHETTLE: Yes. Thank you. That's, I think, a very important point that is necessary to highlight here, in that we're grateful to have the opportunity to work with these patients and give them an opportunity with mechanical circulatory support device therapy. But we absolutely want their primary care provider, their local cardiologist, to remain engaged and involved in these patients' care. So we have our social work colleagues actually collect addresses from the patients of the individuals who have been involved in their care locally so we can send letters out to these providers, stating, they have this device, here is information about the device, here's our contact information. So there can be that line of communication between us and the referring providers.

And then, we send them back home and have them continue to follow with their local providers. We see them back on a regular basis to take care of the LVAD specific things. But we're not taking over the primary care management. They still can continue to follow with their local doctors and do those things that they normally would do. We just want to make sure that we have ourselves available as a resource if there are questions with the device or management. So that way, those can be answered in a timely fashion.

And we provide our contact information. We're happy to communicate with our local doctor if or when or however they would like.

SUDHIR KUSHWAHA: And that's a very important point. We want local providers to feel comfortable looking after these patients, because it can be a little overwhelming. Provider might have maybe only one patient in their entire practice who has one of these pumps, and so we want them to feel that they can call, really, anytime, 24/7, and be in touch with one of us, one of our group. Typically, there's a phone number which we make available, and the coordinator will answer the call, and then will get in touch with one of our group, depending on the situation.

And we have a very low threshold for seeing patients back if there's a potential problem. So I think that's very important that providers don't feel like they're being left to manage something which they might feel a little out of their depth. So it makes it easy, hopefully, for all parties, including the patient, most importantly.

SARAH SCHETTLE: And I'd like to echo what Dr. Kushwaha said in that. I really think that that makes the patient feel more at ease, knowing that we're in communication with their doctor, their doctor is in communication with us, and they have a number available 24 hours a day, because as we all know, medical emergencies don't necessarily happen between eight and five. So if there is something that happens at midnight or 2:00 AM, they have a resource available to them that they can reach out to, who's available to help them, help their local doctor, help their local emergency department, and get them the care they need.

GAYATRI ACHARYA: It seems to be a good continuation of the team-based approach that we've discussed before.

SUDHIR KUSHWAHA: That's right.

GAYATRI ACHARYA: Dr. Kushwaha, how can a referring physician send a patient to Mayo for consideration of a VAD?

SUDHIR KUSHWAHA: Well, we make available appropriate phone numbers and contact information for our program, both the transplant program, the heart failure program, the VAD program. And quite often, it's not clear what therapy is appropriate for a particular patient. So we may end up seeing a patient who gets initially referred to heart failure clinic. And then, one of our heart failure clinic colleagues will call us and say, well, I think this patient might need a mechanical pump, because they're really very sick and maybe they are transplant candidate, maybe they're not. It's a continuum of care.

But I think the contact information is out there, and we encourage providers to call, to send patients. Even if they don't really know what the appropriate therapy is, we can help them make that decision and be in touch and hopefully do the best thing for the patient. That's what we pride ourselves in, is we're not biased towards one approach or another. We really try and make the best decision for the patient.

GAYATRI ACHARYA: These are extremely important insights for our patients we're caring for with advanced heart failure. Thank you very much for your expert opinions. Thank you for joining us today.