

Transcript Details

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Complex Aortic Disease: Sussing Out a Silent Killer to Save Lives

Narrator:

Welcome to Medical Breakthroughs from Penn Medicine, Advancing Medicine Through Precision Diagnostics and Novel Therapies.

Dr. Caudle:

This is ReachMD and I'm your host, Dr. Jennifer Caudle. With me today is Dr. Nimesh Desai, attending cardiac surgeon and Director of the Thoracic Research Program at the University of Pennsylvania. We will be discussing complex aortic disease states and innovative medical and surgical approaches to treatment. Dr. Desai, welcome to the program.

Dr. Desai:

Thank you. It's a pleasure to be here.

Dr. Caudle:

Well, we're happy to have you. So, to start us off, can you first define what complex aortic diseases are and, specifically, who is at risk for developing them?

Dr. Desai:

Complex aortic diseases are aneurysms, which are outgrowings or outpouchings of the aorta which is the main blood vessel that carries the majority of blood in the body. They start and involve the aortic root which includes the aortic valve, the aortic arch, or the descending aorta, all the way down to where the iliac bifurcation is where the blood vessels to the legs come off. There are simple aorta problems, such as aneurysms in the lower part of the aorta that these days are treated with a variety of different techniques, whether they are open surgeries or with minimally invasive techniques, and there are more complicated aortas that actually involve multiple levels of the aorta and can involve the heart as well.

Dr. Caudle:

You know, this is a category of disease that puts a lot of fear into people because, really, it can strike at anyone at any time and have a devastating impact. To address this, is there anything people can do to avoid developing aortic diseases?

Dr. Desai:

Aortic diseases are interesting problems because they're often very silent killers. They don't often present with any symptoms until something catastrophic has happened. If we look at most of the people who we end up operating on for aortic diseases, those, in particular aneurysms, are often found while the patient was having a test for something else. For instance, they were having an echo of their heart and they noticed an ascending aortic aneurysm or they were having a CAT scan of their chest for lung cancer screening and they see an aortic aneurysm. So, aortic aneurysms, typically, are not things that cause symptoms but actually can grow silently inside you for a long time. We know there are some people who are at more risk for developing them, for instance, patients who have connective tissue disorders, such as Marfan's syndrome, which is a genetic disorder and that causes deregulation of some of the proteins that holds the aorta together, but we also see it in patients who have a long history of smoking and, more commonly, patients who have a long history of high blood pressure.

Dr. Caudle:

So with that, then, who should be screened for aortic aneurysms?

Dr. Desai:

Anyone with a strong family history of aneurysm disease or aortic dissection, patients who have longstanding hypertension and have had ultrasounds of their heart, echocardiograms, that have shown ascending aneurysms should be followed. Unfortunately, most of these patients are still people in whom these aneurysms are just found incidentally.

Dr. Caudle:

If you're just tuning in, you're listening to Medical Breakthroughs from Penn Medicine on ReachMD. I'm your host, Dr. Jennifer Caudle, and with me today is Dr. Nimesh Desai, attending cardiac surgeon and Director of the Thoracic Research Program at the University of Pennsylvania. So, Dr. Desai, in considering the nature in which aortic diseases often present, which is sometimes as emergencies, how do they get diagnosed quickly and really what do we do for them?

Dr. Desai:

The main symptoms of an aortic emergency are severe chest pain, or back pain, or abdominal pain. And in patients who often don't know that they have aneurysm, it can be a little bit difficult to sort out what the actual problem is. Often these diseases are misdiagnosed initially, heart attack, or ulcer pain, or other abdominal conditions, or even pulmonary embolisms, or blood clots in the lungs, and it's only when a CAT scan is done that the actual diagnosis is made. For patients who have aortic emergencies, the key thing is to get to the hospital as quickly as possible, by 911; once the diagnosis is made, to make sure that they are transferred over emergently to an aortic center so that they can be treated.

Dr. Caudle:

Well, let's focus now on your surgical practice. What techniques are you employing to help treat complex aortic diseases?

Dr. Desai:

There is a wide variety of different ways that we can approach aortic aneurysms. Traditionally, there were two main approaches to dealing with aortic diseases in the chest. One was to go through the breast bone, so median sternotomy incision, and replace either the aorta or the aortic arch, and the other one was to do a large thoracotomy on the left side and take out the aortic aneurysm or the aortic dissection and replace it with a sewn-in surgical Dacron graft. With the advent of new catheter technologies, a lot of these diseases can be addressed with much smaller incisions or with no incision at all. Often, aneurysms, and dissections of the aorta in the chest, going in the descending aorta, can actually be repaired with stent grafts that can be done percutaneously. The patient can go home in 3 or 4 days, without any incisions, and with minimal pain. For the ascending aorta, although surgery is still the primary way we treat aneurysms and dissections of the ascending aorta, there are minimally invasive techniques that we can employ to do this, and these days an aortic aneurysm right above the heart in the aorta can be repaired with an open surgery through an incision that is literally only 5 or 6 cm long.

Dr. Caudle:

That's really interesting. Can you talk now a little bit about the medical management side? Are there any less invasive options for patients?

Dr. Desai:

Sure. In fact, most people with aortic aneurysm can initially be managed medically and with good medical therapy people can actually avoid needing an operation. The key elements of medical therapy are, first and foremost, good blood pressure control, and we usually recommend beta-blockers such as metoprolol as the primary line agent. We really try to keep patient's blood pressures below 130 systolic all the time and ask them to monitor their blood pressure very carefully, once we know that they have an aortic aneurysm. Also, very important in this is smoking cessation. The number one risk factor for aortic growth in patients who have known aneurysm is if they continue to smoke and that is also an important consideration.

Dr. Caudle:

Wonderful. Well, with that, I want to thank our guest, Dr. Nimesh Desai, for joining us today to talk about complex aortic disease. Dr. Desai, it was great having you on the program.

Dr. Desai:

Thank you.

Dr. Caudle:

I'm your host, Dr. Jennifer Caudle, and thank you for listening.

Narrator:

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