

Mayo Clinic Q & A â€” Dr. Alberto Pochettino - Cardiovascular ...

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SPEAKERS

Dr. Halena Gazelka, Narrator, Dr. Alberto Pochettino

- N** Narrator 00:02
Coming up on Mayo Clinic Q&A, we take a look at cardiovascular surgery and why a reoperation or reintervention may be needed for some patients after their initial heart surgery.
- D** Dr. Halena Gazelka 00:14
Welcome, everyone to Mayo Clinic Q&A. I'm your host, Dr. Halena Gazelka. Thanks to advances in heart surgery techniques and longer life expectancies some people who have heart surgery may require a second surgery or procedure, which is often called a reoperation, or a reintervention. With us today to discuss this important topic is Mayo Clinic cardiovascular surgeon, Dr. Alberto Pochettino. He's going to explain to us who might need early intervention and why. Thanks for being here today, Alberto.
- D** Dr. Alberto Pochettino 00:48
My Pleasure. So, it's such a privilege to share some of the thoughts and part of what I do for a living.
- D** Dr. Halena Gazelka 00:56
Well, I am delighted to meet with you. Speaking of what you do for a living, first off we would love for our listeners to get to know our surgeons a little bit better and our professionals. And so, we're asking if you would mind telling us a little bit about yourself and your journey and how you came to be a cardiovascular surgeon at the Mayo Clinic.

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Dr. Alberto Pochettino 01:17

So, I'm originally a native of Milan, Italy, where I grew up until high school. At the end of high school, I came to the United States as an exchange student and ended up staying. So, then went to college and medical school in Chicago at Northwestern University. And then went out east, as it were, to do a lot of my training. So, I was in New York City for five years doing my general surgical training and then moved to Philadelphia where I finished my cardiac surgical training, and then stayed on staff for a total of 18 years in Philadelphia. At the University of Pennsylvania. Around 2011, Mayo Clinic here in Rochester was looking for an aortic surgeon, and that was one of the fields that I had focused my career into. And I took the opportunity to move here. And I've been here for just about 10 years now where my practice has focused, again on aortic surgery as well as complex reoperation, which is a one of the topics that we're going to discuss today. So, that's kind of my journey. You know, so a lot of east coast large city training, you know, Chicago, New York, Philadelphia, and then Rochester, which has been different and very fulfilling.

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Dr. Halena Gazelka 02:51

Alberto, there comes a time when we are in medical school and have to decide what we're going to do for a career because you have to specialize, do a residency and then choose from there. What made you think of surgery and then cardiovascular surgery?

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Dr. Alberto Pochettino 03:08

It's very interesting. I had never figured myself during most of my medical school as either a surgeon or much less a cardiac surgeon. And in fact, as part of the training especially back in those days, we used to do the clinical component of the training at the end. Typically, in those days, medical school is divided two years of basic science and basically classwork and two years of clinical experience. And I had left my surgical last because I figure, you know, I'm never going to be a surgeon, so I may as well just leave it to the end. And I have to admit that my experience in the surgical training even as a medical student, which is obviously very limited involvement, I would sort of almost compare to falling in love, just sort of, I did not expect it. I walked in, and I just realized that the combination of sort of manual dexterity skill as well as sort of intellectual challenge and to a great degree the ability to change somebody's life in a very radical fashion was something that I just fell in love with. And so, in fact, I had already arranged for all sorts of other career paths by that point, and I had to drastically change it all. So, again the best way to put it for me was just sort of meeting somebody for first time you didn't expect at all, and you just fall in love and there's no way around it. And so, from that point forward I focused on surgery. And the interesting thing is that the first rotation as a medical student that I was exposed to was a cardiac surgical rotation. So, again not only was it love of first sight, but it was the very first thing I was doing. And I've been, you know, in love with the field ever since.

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Dr. Halena Gazelka 05:17

That is so wonderful. I love that analogy. And I think that doing what you love, it truly does give you focus and make you good at what you do because you're enjoying what you're doing while you do it. So, that's great.

you do it. So, that's great.

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Dr. Alberto Pochettino 05:33

Absolutely, absolutely.

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Dr. Halena Gazelka 05:34

All right on to the topic, Gilberto. We're going to talk today about people who might need cardiac reoperation or reintervention, and I think they fall into three groups. And I'm hoping we could discuss each of those three groups.

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Dr. Alberto Pochettino 05:47

So, especially in my practice, again as an aortic surgeon, it is quite common that a patients present to medical attention in emergency setting. The most classic emergency setting in the aortic world is aortic dissection. So, when a patient presents with the aortic dissection, typically. The ascending aorta is the the part of the aorta that is involved, and the aorta is the big pipe that brings blood to the entire body. And it starts from the heart. And it comes from the heart, which is in the front of the chest up towards the base of the neck, and that's called the ascending aorta. That's where most aortic dissections, which are typically called type A dissection occur. Most of the time the dissection that extends into the next segment of the aorta called the aortic arch where the aorta goes from the front to the back and beyond that, the descending thoracic aorta it is called and then the abdominal aorta. But the beginning is often in that segment right above the heart. So, an emergency operation is performed to save the patient's life and to prevent full rupture of the dissected aorta. But often, that operation is not the end of the story. It saved the patient's life. It allows them to get to the next day. Often the rest of the aorta, which has not been replaced typically, continues to expand, continues to behave in a fashion that may need additional intervention. So, that's one of the components of this sort of reoperative surgical intervention that I'm called upon to do. And typically, it involves going back through the front through the same incision that was used for that emergency surgery and addressing either the aortic valve or the aortic root. Again, the aortic root is the part of the aorta that contains the valve, or what's called a distal ascending aorta, the aorta above where it has been replaced in the emergency operation, as well as the aortic arch. And in young people, and again, dissection it's a disease that affects everybody, and it can affect very young people as well. In young people often the entire aorta ends up being replaced somewhat piecemeal during the patient's life. So, all of those things are a component that I'm called upon to assess, to follow often for some period of time, and often to reoperate on. So, that's one category. The other category, which is to a degree a much larger category. It has to do with valvular disease that is either addressed with a repair, or most commonly a replacement with a tissue valve. So, if you think of valvular disease, I mean, the heart is four valves designed to allow flow in one direction only. And when either the valve doesn't open, we call that stenosis, or it doesn't close, we call that insufficiency or regurgitation, then you have to do something to that valve. Again, the most common treatment is replacement especially in the aortic valve. To a lesser degree the mitral valve can be repaired a lot of times, but sometimes the repair either doesn't last or it doesn't work. And then something needs to be done again. So, again tissue valves are one of the options when you put in a new valve, and tissue valves are made of animal tissue. And the most common animals used are cows and pigs. So, they're sort of

modified, kind of fixed chemically in a way that will make them durable. But as durable as they can be, they don't last typically more than about a decade. So, then a decade later, when the valve wears out then a new operation has to be designed and has to be performed. Despite the fact that some of the newer technology may have allowed some of this operation to be done without reopening the chest, the great majority still today require getting back in, taking the tissue valve out and replacing it again. So, that's the second large category of reoperation.

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Dr. Halena Gazelka 10:06

Alberto, can I ask a question about that?

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Dr. Alberto Pochettino 10:09

Yeah.

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Dr. Halena Gazelka 10:09

How do you decide if someone should have a tissue valve or a mechanical valve which is made out of man-made components?

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Dr. Alberto Pochettino 10:18

Very good question, and to some degree it is not a right and wrong kind of approach. There are a lot of factors that go into making that decision. One of the driving forces at the end of the day of choosing a tissue valve is it does not require anticoagulation. So, the dividing point between the two options is that a mechanical valve is made of carbon primarily. The leaflets, which is the moving part of the valve, is made of a material that is very resistant to clotting. That's what you don't want inside the vascular system. On the other hand, as resistant as it is, it's not perfect. So, all mechanical valve requires some degree of blood thinner, anticoagulation. And that's something that it's, you know, it's a commitment. It requires not only that you take a medication on a regular basis, but it requires that medication, which in today's technology is called Warfarin, Coumadin. That medication needs to be adjusted and it requires blood testing, and if you want to avoid all that, that's where the tissue valve comes in. Now, the price to pay for avoiding the blood thinner is that the tissue valve is not durable. It will last again, variable as to how long it lasts, but you know, around a decade is sort of the rule of thumb. So, that's the choice. Now, if you have multiple medical problems where adding anticoagulation makes it complicated, then obviously it's worth considering. And sometimes even in younger people that don't have any particular difficult medical problem, but they don't want to have to bother with the anticoagulation, there is a role in using a tissue valve. In young women sometimes who wish to have children, you know, a pregnancy is complicated further by a blood thinner. So, sometimes tissue valves are chosen in that setting, and once a woman has past her reproductive years, then that second or third time around depending on the specifics, you can then put in a mechanical valve to kind of not have to deal with the reoperation.

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Dr. Halena Gazelka 10:29

Will that last forever then?

D Dr. Alberto Pochettino 12:41

So, mechanical valves are designed to last forever. Now, do they always last forever? You know, it sometimes depends on other factors. But clearly, they're very durable. There have been mechanical valves that have been in for 30, 40, 50 years, and they're still doing well. You know, again it's hard to predict every single nuance. All valves, all foreign tissue for that matter, can potentially get infected. So, that's one of the things that it's not really any different between a mechanical and a tissue valve. But, short of an infection or some technical issues, you know, meaning the valve is not quite seated properly, or some other technical issue related to the surgery, that valve itself, the mechanical valve, should be a lifelong valve.

D Dr. Halena Gazelka 13:30

Excellent. Thank you for that explanation. Alberto, let's get to the third group of people who might need reoperations or reintervention.

D Dr. Alberto Pochettino 13:38

So, the third group is, to some degree it's a sign of the success of cardiac surgery over the last 30 to 40 years, and that is the congenital group. Patients who are born with congenital heart disease, and of course congenital heart disease comes in all sort of varieties. From, you know, the most common probably being what's called Tetralogy of Fallot, but all sorts of abnormality can be present at birth. And typically, an operation is done early in life. A lot of times, that operation may be the only intervention ever needed. For example, a ventricular septal defect can be fixed early in life, and then nothing further may need to be done. But a lot of other times the nuances of the congenital abnormality are such that more intervention are needed later in life. And those interventions can then, you know, if you've had the first surgery as a newborn or in the infant period, then you may have one as child, one as a teenager, and that process may continue into adulthood. So, early in my career I was involved in congenital heart disease in that sort of a newborn period, but soon within the first few years of my career, within the first five years of my career, I focused more on treating adults. But I continue to treat adults with congenital heart disease, especially as many of their re-operation involve aortic related problems, or a valvular related problem, which is something I do all the time in a non-congenital setting as well. So, that's kind of the third category that I participate in, you know. Here in Rochester at Mayo Clinic, we have a team that deals with adult patients with congenital heart disease. And I'm involved in that team especially if the re-operation involves some element of their aorta. You know, one of the classic situations is either interrupted aortic arch that needs more work done later in life, or aortic coarctation, which is a type of aortic disease involving the proximal descending thoracic aorta which is typically fixed early but may need reintervention later. As well, as mentioned, valvular disease in patients who have, you know, AV canal defects or other abnormality of the outflow tract that may involve aortic valve or aortic root attention later in life.

D Dr. Halena Gazeika 13:42

It's easy to imagine that as one grows from infancy up to adulthood that you might have to alter the surgical course due to growth, I would imagine.

D Dr. Alberto Pochettino 16:35

Correct. Growth is a big factor. Often a lot of congenital heart disease involves reconstructing the outflow on the right side of the heart, and that outflow often requires a valve, and of course the valve that a child needs will not do once they become adults, and especially as you replace many of those valves with tissue valves. Again, we talked about tissue valves, and often on the right side tissue valves do better than mechanical valves, as opposed to on the left side of the heart. And therefore, multiple reinterventions are often required in that setting.

D Dr. Halena Gazeika 17:12

Alberto, how common is it for patients to need reoperations or reintervention?

D Dr. Alberto Pochettino 17:19

So, the data is a little sparse. You know, I would say probably 20 to 30% of cardiac surgical intervention may be in the reoperative setting. Now, it is often concentrated in either institutions that have an interest and a focus on a more complex problem, or even within a given institution and a given set of surgeons where reoperative intervention becomes part of their practice. And to some degree that has become a lot of my practice. Partly because aortic surgery by nature involves emergency operation followed by more definitive operation, and partly because of my interest in valvular disease. Again, tissue valves being commonly used the first time around, and that means there is going to be a second and more time around, and my continued interest in congenital heart disease in the adults. I mean, those are all components that will lend themselves to be commonly in a reoperation. So, in some surgeons, I mean, my practice, probably may be up to 40% of my practice may be reoperative, which is not necessarily common for most surgeons or for most institutions.

D Dr. Halena Gazeika 18:39

Well, it sounds extremely highly specialized. And the thought that comes to my mind is the more you do the better you get at something. And so, how will patients know that they are getting good care and that they have a surgeon who is competent to do these type of interventions? What sort of questions should they ask?

D Dr. Alberto Pochettino 19:00

Well, I think the first thing is ask questions. I mean, sometimes, you know, for a variety of reasons, you know, your physician, your family physician, your cardiology will send you into a certain direction. And you know, you as a patient don't have that much control, but just ask questions, you know, what the surgeon does. You know, some questions can be off putting by

the surgeon sometimes, but that's okay. You know, there's nothing wrong with getting the surgeon a little bit off their guard and sort of see how they answer. I mean, I think it's nice to be open to sort of let the patient know what it is that a given surgeon may or may not be comfortable doing, what they do on a routine basis. And of course, sometimes those questions are not easy to answer, and they're not easy to interpret, you know, from the patient perspective, you know what the answer will really mean. But I think starting with an open, you know, a question and answer, it's a way to get going. What are you looking for when you ask the question? What is the primary practice of that individual, that surgeon? You know, if the primary practice is bypass surgery, and that's, you know, that is what most surgeons, cardiac surgeons even today will spend a lot of their practice doing. You know, is an aortic root operation, a root is the beginning of the aorta that contains the aortic valve, something they do often, or do they do it very rarely? You know, if that's the operation that it looks like is going to be needed, ask that question. And to a lesser degree, you know, what is their team composed of, you know, obviously, the surgeon is important, but the team surrounding the surgeon is just as important. And I've come to learn that, at my time here at the Mayo Clinic, you know, I've been doing a lot of the operations that I do today before I came here, and I was somewhat struck how I became a better surgeon here, not because I was really intrinsically all that much better, but because I think the people around me were, on average, so much sort of at a higher level, that enough of a difference occurred just from my moving here compared to where I was before. So, you get a sense as a patient by what's surrounding a given surgeon. You know, sort of a very small community hospital can provide good service but is limited in terms of what the support system has. In a larger team, just by sheer numbers itself is important, but also the type of operations that are done in a given institution providing that expertise surrounding the surgeon is important.

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Dr. Halena Gazelka 22:07

And so many of our patients comment on the team dynamic at Mayo, so I love that you mentioned that.

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Dr. Alberto Pochettino 22:12

No, it is important. Again, I cannot under emphasize the fact that when I'm done with an operation, and you know, no matter how complex it was, and I walk away. I know the intensive care team will do the right thing including calling me if they think that I need to be involved again. As opposed to sometimes where I was before, I was a little bit leery. You know, what am I going to get called tonight for, you know, should I call in every couple of hours and make sure that everything is appropriate, you know. And sometimes I am nervous myself when I do a very complex operation, and I want to check in. But, having the knowledge that the team that is going to take over for that night is doing a great job, it just makes a big difference. Not to mention the team in the operating room with me that I work with day in and day out. You know, they know my moves, they know what I should do sometimes even before I do it. They remind me when I'm sort of making the wrong move, you know. So, it's a give and take that is precious for me, and it's important for the patient.

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Dr. Halena Gazelka 22:20

Well, what a wonderful conversation today. Thank you so much for being here.

D Dr. Alberto Pochettino 23:30
It's a pleasure. All the best.

D Dr. Halena Gazelka 23:33
Our thanks to Dr. Alberto Pochettino, cardiac surgeon at Mayo Clinic, for being here today to talk to us about aortic surgery in particular but also reoperation and reintervention in cardiac surgery. I hope that you learned something. I know that I did. And we wish each of you a wonderful day.

N Narrator 23:51
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