

Mayo Clinic Q & A - Dr. Luis Savastano - 06 16 21

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SPEAKERS

Dr. Halena Gazelka, Dr. Luis Savastano, Narrator

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- N** Narrator 00:01
Coming up on Mayo Clinic Q&A,
- D** Dr. Luis Savastano 00:03
Most of the time, there are no signs or symptoms. And that is a problem because it is a silent disease that progresses over time until there is an acute rupture of the plaque. And when that happens, a clot can form in the surface and the clot can be pushed downstream to the brain, and that is what causes the stroke.
- N** Narrator 00:26
These clots can form if you have carotid artery stenosis, a disease where fatty deposits clog the blood vessels that deliver blood to the brain. This blockage increases your risk of stroke. But with early detection and new therapies, injury to the brain can be prevented.
- D** Dr. Luis Savastano 00:42
And by looking at the wall of the artery, with basically next generation imaging tools, we can see the root cause of stroke. And in those patients where we can find the problem, we

can really help them by targeting our therapy.

D Dr. Halena Gazelka 00:58

Welcome, everyone to Mayo Clinic Q&A. I'm Dr. Halena Gazelka. We are going to learn something together today and the topic is carotid stenosis. Carotid artery stenosis is narrowing of the large arteries or vessels on the sides of the neck that carry blood to the head and the brain. This narrowing is usually the result of a buildup of fatty deposits known as plaque within the arteries. Stenosis can worsen over time to completely block the artery and cause what we know as strokes. So, what are the signs and symptoms and how can carotid artery stenosis be treated? Well luckily, we have an expert here to talk to us today. Dr. Luis Savastano is a neurosurgeon at Mayo Clinic. Welcome Luis, thanks for being here.

D Dr. Luis Savastano 01:41

Thank you, my pleasure.

D Dr. Halena Gazelka 01:42

Wonderful to have you here to talk to us about this today. Thanks for being here. Luis, tell us how common is carotid artery stenosis?

D Dr. Luis Savastano 01:51

Yes, carotid artery stenosis is very common, especially in elderly patients. And about five to 7% of patients 75 years or older are going to have carotid stenosis. It is important to remember, that is one of the most common reasons for stroke and is causing at least 25% of all the strokes.

D Dr. Halena Gazelka 02:17

Wow, that sounds very common. And how would someone know if they had carotid artery stenosis? Are there signs or symptoms?

D Dr. Luis Savastano 02:24

Yes, most of the time, there are no signs or symptoms, and that is a problem because it is a silent disease that progresses over time until there is an acute rupture of the plaque. And when that happens, a clot can form in the surface and the clot can be pushed

downstream to the brain, and that is what causes the stroke. And most of the signs and symptoms of stroke patients are going to be difficulties moving one side of the body, or feeling, or some language problems, difficulties to talk or to understand.

D Dr. Halena Gazelka 03:03
How do you diagnose carotid artery stenosis?

D Dr. Luis Savastano 03:06
There are two settings where carotid artery stenosis is diagnosed. One is in patients that have a family history of carotid artery disease, they are smokers, and they have high blood pressure and have high cholesterol, diabetes, and the primary care provider orders basically screening tests. That can be an ultrasound of the carotid or a CAT scan of the arteries of the neck. And most of the time, those are asymptomatic carotid stenosis. The other circumstance is when patients present to the hospital with stroke symptoms. And in the workup of the root cause of the stroke, there are images of the carotid obtained showing the narrow.

D Dr. Halena Gazelka 03:54
Dr. Savastano, it sounds to me like the risk factors for carotid artery stenosis may be fairly parallel to those for coronary disease or heart disease. Is that true?

D Dr. Luis Savastano 04:06
Absolutely. Keep in mind that atherosclerosis, which is the reason of the narrowing, or these plaques, is a systemic disease, meaning that happens everywhere in the body, especially in patients that are basically smokers, high blood pressure, they have poorly controlled diabetes, and the same that is happening in the coronary arteries in the heart happens in other arteries in the body, such as the carotid arteries.

D Dr. Halena Gazelka 04:33
So, if a person is known to have coronary disease, they should know that they could be at risk for this as well.

D Dr. Luis Savastano 04:40
They could be at risk. Yes, it will be reasonable to do a screen for that.

D Dr. Halena Gazelka 04:45
As a screening test, are there any blood tests that can be screening tests, or is it imaging tests like the ultrasound?

D Dr. Luis Savastano 04:52
There are blood tests that can be done but those are mostly for the systemic risk factors such as the cholesterol level, the lipid levels, the blood sugar level. I think it is important if patients are in those risk factors to talk with the primary care physician to see if they are good candidates for health screening.

D Dr. Halena Gazelka 05:12
Okay, so supposing that someone does not have a diagnosis or is unaware of this, what can happen if it goes untreated?

D Dr. Luis Savastano 05:20
Yes, there is a potential that the plaques are going to progress over time. And they may eventually rupture. When that happens, there is a clot forming in the surface, and the clot can block the artery, or the clot can fragment and go to the brain causing a stroke.

D Dr. Halena Gazelka 05:41
So how do you prevent that? What are the treatment options?

D Dr. Luis Savastano 05:46
So, it's important to consider that the first thing to do is to improve the medical management of the patients. By that I mean living healthy lifestyles, exercise, having a healthy weight, controlled diabetes. If the patients are diabetic, keep the cholesterol levels down and control the blood pressure, and of course, stop smoking. And once the plaque becomes symptomatic, or the patient is having a stroke, if there is a significant narrowing, the treatment on top of the medical management includes basically repairing the artery. And overall, there are three techniques that can be used. And one is basically removing the plaque through surgery, which is called carotid endarterectomy. The second option is to place a stent through a catheter placed in the groin or in the wrist, that is advancing

towards the carotid. And the last option which is the most recent is placing a stent directly from an access into the carotid artery in the neck which is called transcarotid artery revascularization.

- D** Dr. Halena Gazelka 07:00
Interesting. So, with the surgery, you actually make an incision in the neck and go into the artery.
- D** Dr. Luis Savastano 07:06
Exactly, yes. And then basically, the artery is exposed and is open, and then the plaque is completely removed. And then the artery is basically closed back up to re-establish the flow to the brain.
- D** Dr. Halena Gazelka 07:19
Okay. Or you can go through the grind and put a stent in.
- D** Dr. Luis Savastano 07:23
Exactly right.
- D** Dr. Halena Gazelka 07:23
And with the third option, how big is the incision, or the entry point into the neck?
- D** Dr. Luis Savastano 07:27
The incision is about one inch in size, and it's kind of a hybrid approach. It is a combination between an open surgery and a stent intervention. Yeah, I think there are several nuances to discuss, basically to decide what is the best option for a patient. It is important to consider that the three are very good options. They are very effective and have a very good safety profile. But there are certain features within basically each patient that makes one option better than others.
- D** Dr. Halena Gazelka 08:02
Okay.

D Dr. Luis Savastano 08:02
So, it's always good for patients to try to go to centers that are very familiar with all the available options.

D Dr. Halena Gazelka 08:09
Can you give us an example of why one approach might be preferred over another?

D Dr. Luis Savastano 08:16
Yes, for example endarterectomy, which is the open surgery, is the oldest and the most established technique. Having said that, the neck needs to be relatively healthy to do surgery. Now, for example, if the patient has a history of radiation in the neck or has a history of multiple neck surgeries for other things such as cancer, the dissection to expose the artery is more challenging. So, in those cases, it's more convenient for patients to have the stenting. This will happen about where is the location of the plaque, sometimes the plaque is kind of the middle of the neck, I mean, it is relatively straightforward to access surgically, but sometimes it's very high behind the mandible, which is more difficult to get a good approach.

D Dr. Halena Gazelka 09:05
Interesting.

D Dr. Luis Savastano 09:05
In this case, stenting is preferred.

D Dr. Halena Gazelka 09:08
Very interesting. And how do patients know, Luis, if they are getting the right care for themselves for carotid artery stenosis?

D Dr. Luis Savastano 09:19
Yes. So, I would start saying that when patients are having symptoms for stroke and they're diagnosed with a stroke, it is critical to find the root cause of the problem. Because if you cannot target your treatment, it is unlikely that you're going to provide the best benefit to patients, and the benefit is preventing the future stroke. And at Mayo, we have

clinics which are multidisciplinary and basically, they have specialists which involves neurology, stroke neurology, cardiology, vascular surgery and neurosurgery where we work together to understand why a patient had a stroke. And once when they understand that the next question is how can we best prevent another stroke from happening? And that is a discussion that needs to happen within teams. And based on the consensus, then we find the best option that we have for the patient. And that is what we offer them.

D Dr. Halena Gazelka 10:24

That team-based care sounds like a great option for getting all of your information and care in one spot.

D Dr. Luis Savastano 10:30

Yes, absolutely. And the other thing to consider is that, in addition to having a streamlined process to provide that basically multidisciplinary care, it is important to understand that there has been an evolution of the techniques and the tools that we use to find the root cause of a stroke. For example, for many years, we have thought about narrowing of the arteries as the main problem, what we learned in the last decade or so was that, in addition to the narrowing, the reason of the narrowing of the artery is critical. And if there is, for example, a hemorrhage within the plaque or bleeding within the plaque, we can prevent strokes by fixing the artery even if there is no significant stenosis or narrowing.

D Dr. Halena Gazelka 11:17

Interesting.

D Dr. Luis Savastano 11:18

To see the plaque, you need the technology, and at Mayo we have kind of specialized MRIs to see those problems in the arteries.

D Dr. Halena Gazelka 11:29

Like so many things, it's important, how many of these surgeries you do and how many cases you see I'm certain.

D Dr. Luis Savastano 11:36

Yes, exactly. So now these are well established surgeries and interventions. But it's

important for the centers to maintain a complication rate of 3% or less. And that's something that it's tightly regulated. And of course, the more you do the safer it is for the patients.

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Dr. Halena Gazelka 11:57

That's very interesting. Anything else you'd like to share today, Luis.

D

Dr. Luis Savastano 12:01

So, for a very long time the focus of our attention in carotid artery disease has been on the degree of narrowing. And what we have found, and we're doing with our patients now is to look at the wall of the artery in addition to the degree of narrowing, and by looking at the wall of the artery with basically next generation imaging tools, we can see the root cause of stroke in patients that otherwise are labeled with strokes of unknown reason. I mean, those patients where we can find the problem, we can really help them by targeting our therapy, both medically and with surgical interventions.

D

Dr. Halena Gazelka 12:44

I think it's really interesting you mentioned that because I remember being an anesthesia resident, and, you know, reading patients charts who were going to have carotid endarterectomy, and the main decision making seemed to be what the ultrasound or other imaging study showed, was the percent of blockage of their artery.

D

Dr. Luis Savastano 13:04

Yes, exactly. And there has been a dogma within basically stroke. And at Mayo we're really pioneering basically a change in the dogma. And we have basically the largest published series of patients undergoing surgery for minimal to no stenosis and showing that we can really prevent recurrent strokes. And at the same time, here at Mayo we are the principal investigators of an NIH trial. specifically looking at interventions for nonstenotic carotid artery disease.

D

Dr. Halena Gazelka 13:40

How interesting. Thank you so much for sharing with us today.

D Dr. Luis Savastano 13:44
Absolutely. My pleasure.

D Dr. Halena Gazelka 13:46
Our thanks to Dr. Luis Savastano for being here today to talk to us about carotid artery stenosis, and its diagnosis and management. I hope that you learned something. I know that I did. We wish each of you a very wonderful day.

N Narrator 14:00
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