

Mayo Clinic News Network

Title: A Close Call for Mr. Hall: Aortic Aneurysm / Date: July 2016

Globally each year, 175,000 deaths are attributed to [aortic aneurysms](#). The aorta is the largest blood vessel in the body, an artery that carries blood directly from the heart. A variety of factors may cause the aorta to dilate like an overstretched balloon. If it should burst, it's possible for a person to bleed to death internally in a matter of minutes.

Because aneurysms may be present without symptoms, most are discovered incidentally, while doctors are treating other conditions. In the case of one Minnesota man, his aneurysm was found during a pre-operative exam for carpal tunnel surgery. His achy wrist was not the only thing that may have saved his life. He was the first person in the U.S. to be treated with a new kind of stent that [Mayo Clinic](#) vascular surgeon [Dr. Gustavo Oderich](#) and his team are helping to develop for just such conditions. From the Mayo Clinic News Network, here's the story of a very lucky man.

Video	Audio
Total running time [5:41]	/// VIDEO
GRAPHIC TEXT: The average heart beats more than 100,000 times a day... an estimated 40 million times a year.	/// MUSIC & HEARTBEAT SOUNDS
GRAPHIC TEXT: That's roughly 3.2 billion heartbeats during Ronnie Hall's 80 years of life... pushing about 55 million gallons of blood through his aorta.	
GRAPHIC TEXT: Luckily for Ronnie, it's still flowing.	
Dr. Gustavo Oderich speaking	"Hi, Mr. Hall. How are you doing, sir?"
TITLE: Ronnie Hall Aortic Aneurysm Patient	"I could have tipped over dead. That's what would have happened. If it would have burst, then I would have probably been dead."
Dr. Gustavo Oderich speaking	"Take a small breath and hold."
TITLE: Val Hall Ronnie's Wife	"Well, he, he said it was a ticking bomb, you know. It could rupture at any time."
Dr. Gustavo Oderich speaking	"What I would like to do now is to show you the CT scan."
GRAPHIC TEXT: Mr. Hall's aorta had ballooned to almost 5 inches wide - three times its normal size.	/// MUSIC
TITLE: Gustavo Oderich, M.D.	"An aneurysm is a weakening, a dilatation of the artery. They are a

<p>Vascular and Endovascular Surgery Mayo Clinic</p>	<p>major, life-threatening event, with a very high risk of death. Actually, in fact, 90 percent of the patients end up passing away.</p>
<p>Dr. Gustavo Oderich speaking</p>	<p>These are illustrations of Mr. Hall's aneurysms, and what we are seeing is the aorta and a series of arteries. This is the artery to the liver, intestine, right kidney, which is here, left kidney. They can be repaired. Traditionally, the aneurysm is being repaired by open surgery and techniques that we do in open surgery have been around since the 1950s basically.</p>
<p>GRAPHIC TEXT: A stent is a wire mesh tube and fabric, which relines a damaged blood vessel.</p>	<p>Nowadays, they can also be treated by means of stents, and the stents are done with little punctures in the groin and working inside the artery.</p>
<p>GRAPHIC TEXT: 70% - 80% of aortic aneurysms are now treated with stents.</p>	<p>But, most of these stents that we have available right now, they are for simpler aneurysms – not the aneurysms that involve the arteries to the kidney, intestine and liver.”</p>
<p>Ronnie Hall speaking</p>	<p>“We would have had to have waited two – two months I think they said – to get the other type of stent that they’d been using. Well, he said I couldn’t wait that long.”</p>
<p>Val Hall speaking</p>	<p>“I just knew we couldn’t wait, so we had to – we just had to put our faith in him and go ahead and do it.”</p>
<p>Ronnie Hall speaking</p>	<p>“Two days really, and I was in there to be operated on.”</p>
<p>GRAPHIC TEXT: The FDA created a pathway for such testing - called Early Feasibility Studies.</p>	<p>“So, these stents that are not commercially available, they have to be used in their specific research studies.</p>
<p>GRAPHIC TEXT: Mr. Hall was the first person in the U.S. to receive this stent.</p> <p>GRAPHIC TEXT: Physicians rehearsed Mr. Hall’s procedure with the 3D model twice, before performing his operation.</p>	<p>So, we developed a relationship with radiology and the 3D print lab that is available here at Mayo, and we are able to print actually the aorta of the patient that is to be treated. This 3D print brings the reality of the patient anatomy. We actually have to do all the steps of the operation as they are, and it anticipates difficulties, challenges. Sometimes, it helps answer questions. Connect this to a pump of fluid that has normal temperature that we have, about, you know, 35 to 36 degrees Celsius, and blood pressure, pulsatility.</p>

<p>GRAPHIC TEXT: The stent's dimensions are based on actual data gathered from the anatomy of over 500 Mayo Clinic patients.</p>	<p>We created a recipe, so to speak, of how to create a stent that is off the shelf that would fit most of the patients.</p>
<p>GRAPHIC TEXT: Mr. Hall's device involved 8 separate stent sections.</p>	<p>It's modules that we put together. So, first, there is one stent in the aorta, a long one that has docking sites. There is a stent inside the vessel, and that stent has side arms to the liver, intestine and to both kidneys. Here is the left kidney and the right kidney. And, then, working inside the vessels with X-ray and wires and catheters, we're able to place the stent in that location.</p>
<p>GRAPHIC TEXT: The average stay for open surgery is a week to ten days, with three months of recovery time.</p>	<p>I mean, this is an operation that he spent one night in the intensive care unit and three days in the hospital. So, that would be almost, I mean, unheard of with an open surgery."</p>
<p>Val Hall speaking</p>	<p>"I just think it's absolutely – it's just unbelievable. For him to be doing as well as he's done, I'm just so thankful."</p>
<p>/// MUSIC – Copyright slide</p>	<p>/// MUSIC</p>

Anchor tag: In the past decade, stents and earlier detection have reduced the death rate during aortic aneurysm repair by about 40 percent. Smoking, family history, high blood pressure and hardening of the arteries or atherosclerosis can increase the risk of aortic aneurysm.

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