

Aortic Dissection: EARLY DETECTION SAVES LIVES

By Lisa Horn



JOHN RITTER. YOU REMEMBER his unforgettable characters in *Slingblade*, *8 Simple Rules* and, of course, *Three's Company*. His portrayal of Jack Tripper is a part of Americana that continues to make audiences laugh today.

In 2003, his life was cut short by an aortic dissection, a rare heart condition that occurs in five to 10 per 100,000 people each year. To add to the complexity, aortic dissection can be hard to diagnose because the signs and symptoms are often the same as other cardiac problems such as a heart attack or pulmonary embolism.

The general public and medical community are often misinformed or lack resources to understand this condition. That's why The Mended Hearts, Inc. has partnered with The John Ritter Foundation for Aortic Health to shine a light on aortic dissection, the symptoms and the treatment options available. The hope is that increased education can improve early diagnosis and save lives.

What Is Aortic Dissection?

An aortic dissection is a serious condition in which a tear occurs in the inner layer of the aorta, the body's largest artery. It is considered a medical emergency because blood rushes through the tear and gets between the three layers of the aorta, causing it to split (dissect).

When blood gets between the layers, it, along with the oxygen and nutrients it carries, cannot get to the organs. This can affect the heart, brain, lungs, kidneys, arms and legs, and 40% of people with a dissection will die before reaching the hospital.

Types of Aortic Dissection

There are two types of aortic dissection:

Type A dissections are more common and dangerous. They involve the upper (ascending) aorta — the part closest to the heart. The tear may extend through the descending aorta and toward the abdomen. This type requires immediate treatment/surgery.

Type B dissections involve only the lower (descending) aorta and may also extend into the abdomen. Type B dissections do not always require surgery and, in some cases, may be treated with medication.

Men are three times more likely to have an aortic dissection compared to women, yet research shows women have worse outcomes from aortic dissection. Approximately three-fourths of aortic dissections occur in those 40 to 70 years old, and individuals of Black African or Black Caribbean descent are also at higher risk. However, aortic dissections can affect people of all ages, races and sexes.

Signs and Symptoms of Aortic Dissection

Because symptoms can mimic those of other diseases, there are often delays in diagnosing aortic dissection, and it can be missed in the emergency department. However, when aortic dissection is detected early and treated promptly, the chance of surviving greatly improves.

Get medical help immediately if any of these signs and symptoms are present:

- Sudden, severe, sharp pain in the chest or upper back; also described as a tearing, stabbing or ripping feeling
- Shortness of breath
- Fainting or dizziness

- Arm/leg weakness or pain
- Sudden, severe abdominal pain
- Low blood pressure
- Rapid heart rate
- Weak pulse
- Nausea
- Heavy sweating
- Confusion
- Loss of vision
- Difficulty walking
- Stroke symptoms

Causes and Risk Factors

Aortic dissection can occur for a number of reasons. Thus, it's important to understand the causes and risk factors to determine if regular monitoring is recommended.

High Blood Pressure

High blood pressure (hypertension) causes the aorta's wall to thin and deteriorate, so it's logical that more than two-thirds of people who have an aortic dissection have high blood pressure. This can be due to being overweight, not exercising, eating too much salt, or eating too few fruits and vegetables.

High blood pressure can also be a result of smoking, drinking too much alcohol or coffee (or other caffeine-based drinks), using stimulants or taking illicit drugs such as methamphetamine or cocaine.

While regular exercise can lower blood pressure, certain high-intensity activities such as weightlifting or other strenuous resistance training can bring on high blood pressure during the activity.

Family history also plays a role in high blood pressure. Combine heredity with living in a shared environment and making similar unhealthy lifestyle choices, and the risk for high blood pressure increases even more.

Stress is also a factor. When under stress, the body releases a surge of hormones, which cause the heart to beat faster and the blood vessels to narrow, resulting in increased blood pressure for a time.

Donald Schwartz, who had an aortic dissection in 2018, is an Aorta Advocate and board member at The John Ritter Foundation for Aortic Health. Every year, he celebrates his "aortaversary" with a hike.



Genetic, Structural and Hereditary Conditions

It's important to look at genetic conditions, as they increase the risk of having an aortic dissection and are frequently the cause of dissection. These include:

- Nonsyndromic heritable thoracic aortic disease, which predisposes individuals to developing thoracic aortic aneurysms and dissections without other external features
- Marfan syndrome, where the connective tissue supporting various structures in the body is weak
- Loeys-Dietz syndrome, which can affect the arteries, bones, joints, skin and internal organs

- Vascular Ehlers-Danlos syndrome, a group of connective tissue disorders that affects the arteries, hollow organs, skin and lungs
- Turner syndrome, a condition affecting females when one of the X chromosomes is partially or fully missing, which results in heart defects, high blood pressure and other issues

People with structural heart problems such as bicuspid aortic valve (a valve that contains only two cusps/flaps instead of three) or coarctation of the aorta (narrowing of the aorta at birth) also have a higher probability of aortic dissection.

It's also essential to look for instances of an aortic aneurysm or dissection within

DONALD SCHWARTZ: Supporting Other Aortic Dissection Patients as an Aorta Advocate

On September 20, 2018, Donald Schwartz's life changed. He had an aortic dissection ... and survived.

During his recovery, Schwartz met with an MHI Accredited Visitor. "I became involved with MHI shortly after that, and the organization played a large role in my recovery," Schwartz says. "I attended weekly support meetings and eventually became an Accredited Visitor myself. I met with other cardiac patients a couple of times a week, and it was a beautiful and cathartic time."

However, during all times he visited patients with heart disease, he never encountered another aortic dissection survivor. "I wasn't meeting anyone who dissected, and

I wanted to find others like me," he says.

This is when he learned about The John Ritter Foundation for Aortic Health. He says that "the synergies were on point" and got involved as an Aorta Advocate. Similar to MHI's Accredited Visiting Program, Aorta Advocates are trained volunteers who have personal experience with aortic aneurysm and dissection. They meet with patients to offer resources, information and a unique connection based on shared experiences.

"As an Aorta Advocate, I share my story and talk to others about The John Ritter Foundation and the work we do," Schwartz says. "I looked death in the face, and my first-hand experience is valuable. It's comforting to be with other survivors and let

them know they're not alone."

Tina Rymer, director of marketing and communications for The John Ritter Foundation, says, "Donald is so willing to help anyone he can by telling his story. He's very compassionate and has been a wonderful addition to the Foundation."

The organization has worked hard to spread the word about Aorta Advocates, and Schwartz says the program has grown exponentially throughout the last couple of years. "It's invaluable to speak to someone who's been in the hospital bed and has the scar on their chest," he says.

Interested in becoming an Aorta Advocate? The John Ritter Foundation is accepting applications for its 2024 class. Visit johnritterfoundation.org/aorta-advocates to apply. Deadline is February 29, 2024.

family history, as about 20% of people have a genetic predisposition to it.

Additional Considerations

Individuals with a weakened and bulging artery (aortic aneurysm) are at risk, as are those with high cholesterol with hardening of the arteries (atherosclerosis) or inflammation of the arteries (giant cell arteritis). Chest trauma or injury from an accident can also make people more susceptible to having an aortic dissection.

Getting Diagnosed and Being Treated

Early detection and proactive treatment saves lives, so it's essential to be evaluated if you are symptomatic or have risk factors.

In patients with a suspected aortic dissection, computed tomography (CT) is recommended for initial diagnostic imaging. Transesophageal echocardiogram (TEE) and magnetic resonance imaging (MRI) can also diagnose an aortic dissection. CT, MRI, transthoracic echocardiography (TTE) and TEE are all used in the diagnosis of thoracic aortic aneurysms.

If the imaging finds dissection of the ascending aorta, this is a medical emergency and requires surgery. Dissection of the descending aorta sometimes requires surgery but not necessarily immediately.

Beta-blockers or similar medications may be prescribed to lower blood pressure and reduce the force of the heartbeat. These drugs may also help slow aortic enlargement and reduce the risk of aortic dissection.

Moving forward, it's critical to have routine tests that monitor aortic health so problems can be identified before there's an emergency. Genetic

counseling and testing can also be helpful for patients as well as family members to determine any predispositions.


By having a team of specialists (including a cardiologist, cardiovascular surgeon and medical geneticist), it is possible to monitor and manage aortic disease to avoid dissection.

Early Detection Is Key

Because aortic dissection is so serious, survival requires early detection. Education plays a significant role in helping spread the necessary awareness around the condition so people can understand their risk factors and work with their physicians to monitor and treat any symptoms that arise.

To help, MHI and The John Ritter Foundation have jointly created the *Aortic Dissection Discussion Guide*, which can be found at mendedhearts.org/aortic-dissection. The site also includes The Ritter Rules that educate on how to recognize, treat and prevent aortic dissection, as well as Family Screening Recommendations provided by The John Ritter Foundation.

MHI members also have access to visits from The John Ritter Foundation Aorta Advocates. Similar to MHI Accredited Visiting Program, the Aorta Advocates program allows patients to connect with someone who has walked a similar path. These trained volunteers have personal experience with aortic aneurysm and dissection, and they offer resources, information and a unique connection based on shared experiences.

Whether you're an aortic patient, a caregiver, at risk due to a genetic condition or have lost a loved one to aortic dissection, The John Ritter Foundation can connect you with a peer who understands. Learn more at johnritterfoundation.org/aorta-advocates. 

GET INVOLVED

Since 2010, The John Ritter Foundation has provided funding and support for the John Ritter Research Program (JRRP), an independent research project conducted out of the University of Texas Health Science Center at Houston under the direction of Dr. Dianna Milewicz. The focus of JRRP is to discover more genes that cause thoracic aortic aneurysm or dissection, understand the genetic and environmental risk factors for developing thoracic aortic disease, and collect data on other symptoms associated with thoracic aortic disease.

If you are interested in learning more about research projects through The John Ritter Research Program for Aortic and Vascular Diseases, visit johnritterfoundation.org/research or email JRRP.research@uth.tmc.edu.

Additionally, the Aortic Dissection Collaborative is a group of stakeholders working together to identify the patient-centered priorities for research. To join the email list, sign up at johnritterfoundation.org/ADCollab or email aorticdissection@uw.edu.