ÁLM | LAW.COM

The Legal Intelligencer

Med Mal Lawsuits and Aortic Dissection— The Deadly Condition Often Missed in the Emergency Department

By Bethany R. Nikitenko April 22, 2025

ortic dissection is a life-threatening medical condition in which a tear occurs in the major artery (aorta) that carries blood from the heart to the rest of the body. Recent data shows that about 13,000 Americans die each year from aortic dissections, according to the National Heart, Lung, and Blood Institute. Time is of the essence to provide appropriate medical treatment to prevent aortic rupture and subsequent death.

However, many aortic dissections are missed in the emergency department, with only 15% to 43% of cases accurately diagnosed at first presentation. See Levy, David; Sharma, Sanjeev; Grigorova, Yulia; Farci, Fabiola; Le, Jacqueline K. Aortic Dissection. StatPearls [Internet]; Oct. 6, 2024. One explanation is that aortic dissection may not be front-of-mind for emergency physicians responsible for screening patients who present with symptoms of cardiac distress. More than 1.5 million patients are admitted to U.S. hospitals per year with chest pain. A physician will see 80 patients with acute coronary syndrome before encountering one patient with aortic dissection. See Elefteriades, John A.; Barrett, Peter W.; Kopf, Gary S. "Litigation in Nontraumatic Aortic Diseases—A Tempest in the Malpractice M a e l s t r o m . " Cardiology 2008; 109:263-272. Without treatment, aortic dissectionhas a mortality rate that approaches 50% within 48 hours of symptom onset, according to "Aortic Dissection."



Bethany Nikitenko

One such death was actor John Ritter. In 2003, Ritter died at age 54 from an aortic dissection that was misdiagnosed as a heart attack after he was rushed to a hospital with classic heart attack symptoms. The misdiagnosis precipitated the wrong medical treatment, and by the time a correct diagnosis was made, it was too late. Ritter died during surgery to repair the dissection. As discussed below, Ritter's family was unsuccessful in pursuing a medical malpractice claim against the cardiologist who failed to diagnose aortic dissection in the emergency department.

This article provides a brief overview of aortic dissection, including the risk factors and symptoms. It discusses the standard of care for clinicians when a patient presents at an emergency department with symptoms suggestive of aortic dissection and key diagnostic tests. It concludes with practice tips for litigating these complex cases including case selection, required experts, deposition strategies and countering the comparative negligence defense.

Aortic Dissection

The aorta is a cane-shaped artery that starts in the lower-left chamber of the heart and extends upward toward the head (ascending aorta) before curving down (descending aorta). The descending aorta passes through the chest and abdominal cavities and ends at the pelvis.

The walls of the aorta consist of three layers of tissue: an inner layer, a middle layer, and an outer layer. When a tear occurs in the aorta's inner layer, blood gets redirected into the tear, which causes the inner and middle layers to dissect (separate). This can lead to decreased blood supply to vital organs and to aortic rupture, which is a complete tear of all three layers of the aorta.

Aortic dissection can extend and produce pain from the top of the chest to the bottom of the abdomen. Symptoms typically start with the sudden onset of a ripping or tearing chest pain. Other symptoms can include stroke-like symptoms (difficulty speaking, seeing, or moving on one side of the body), paralysis, abdominal pain, nausea, vomiting and limb ischemia (reduced blood flow). Nearly 20% of patients with aortic dissection present without typical signs and symptoms, according to "Litigation in Nontraumatic Aortic Diseases—A Tempest in the Malpractice Maelstrom."

Risk factors for aortic dissection include:

• History of aortic aneurysm (including family history)

- Uncontrolled high blood pressure
- Atherosclerosis (hardening of the arteries)

• Bicuspid aortic valve (aortic valve has two cusps instead of three)

• Aortic coarctation (narrowing of the aorta at birth)

• Certain genetic syndromes, including Marfan syndrome, Loeys-Dietz syndrome, vascular Ehlers-Danlos syndrome, and Turner syndrome.

Men are more likely to experience aortic dissection than women. People age 60 and older are more likely to be affected. Use of illegal stimulants (such as cocaine), energy drinks, and weightlifting also are risk factors due to their ability to cause severe increases in blood pressure.

Standard of Care

The standard of care for every patient who presents at an emergency department with symptoms consistent with aortic dissection begins with obtaining a complete and accurate medical history and ordering appropriate diagnostic tests.

Diagnostic tests include:

• Chest X-ray. While a chest X-ray cannot definitively diagnose aortic dissection, there are anatomical features that can be suggestive of dissection. These features include a widening of the mediastinum, an irregular aortic contour, and a deviation of the trachea to the right.

• D-dimer blood test. This test is sensitive for detecting ongoing intravascular thrombosis. D-dimer is invariably elevated in acute dissection and a negative result essentially rules out the condition. A positive D-dimer tests warrants a CT scan for further evaluation.

• Troponin blood test. A troponin blood test assesses the presence of myocardial infarction (a heart attack). Normal troponin levels should increase the index of suspicion for aortic dissection.

• Electrocardiogram (ECG or EKG). This test checks the heartbeat. Note that a normal result increases the index of suspicion for aortic dissection, particularly when combined with normal troponin levels.

• BNP blood test. A brain natriuretic peptide blood test measures the level of a hormone

called BNP in the blood. BNP is released by the heart when it is under pressure, such as in heart failure. BNP levels are elevated in patients experiencing aortic dissection.

• Blood pressure. The standard of care includes taking blood pressure readings on both the left and rights arms, as unequal blood pressures is a sign of aortic dissection.

• CT scan. A CT scan allows doctors to visualize an actual dissection. In cases where a patient has a known history of aortic aneurysm, the standard of care requires an immediate CT scan. The standard of care also requires a CT scan when other diagnostic tests suggest an aortic dissection. In emergency settings, a CT scan is preferred over an MRI for diagnosing aortic dissection primarily due to the long scan time associated with MRI, which precludes its use in hemodynamically unstable patients. See Kim, Young-Wook; Park, Yang-Jin; Kim, Duk-Kyung, "Optimal Imaging for Aortic Dissection."

Aortic dissection is classified into two types. A tear along the ascending aorta is called a Type A dissection. This type of dissection is life-threatening and requires urgent surgical intervention. Intervention involves excision of the intimal tear, aortic replacement, and aortic valve assessment and repair/replacement. See "Aortic Dissection." A tear along the descending aorta is called a Type B dissection. While a Type B dissection may require surgical intervention, this type of tear is usually less severe and usually can be managed with medical monitoring and medication.

Case Selection

Sound case selection is critical. In some cases, it may be exceedingly difficult to prove deviation from the standard of care, as aortic dissection is known as the "great masquerader" because its symptoms can mimic more common medical conditions. As previously noted, not all patients have typical signs and symptoms. In a wrongful death medical malpractice lawsuit brought by John Ritter's family, a jury found that the cardiologist who treated Ritter on the night that he died was not negligent. According to news reports, the cardiologist asserted at trial that Ritter arrived at the hospital in grave medical condition with heart attack symptoms and that rapid medical decisions had to be made. A chest X-ray, which could have helped to establish an aortic dissection diagnosis had been ordered, but it was not done.

The malpractice case involving Ritter highlights the importance of case selection. Counsel should ask the following questions when evaluating a potential aortic dissection case: Did the decedent have a significantly increased risk of aortic dissection due to a personal medical history? Do the medical records establish that the decedent reported symptoms that are commonly associated with aortic dissection? A strong liability case can be established when both factors are met.

Counsel should also consider other popular defenses when evaluating an aortic dissection claim. A common defense is that the decedent was not experiencing a dissection at the time of the medical evaluation and therefore the dissection could not be diagnosed. In light of this common defense, counsel should consider whether enough medical testing was performed by the negligent provider to establish evidence that the decedent was dissecting. For example, a case becomes much stronger when there is radiographic evidence suggesting dissection or an elevated D-dimer that was not appropriately followed.

Required Experts

When preparing an aortic dissection malpractice case, plaintiffs counsel must use multiple experts on a variety of matters including standard of care, medical causation and economic losses. While required experts will vary depending upon the specific circumstances of each case, experts generally include:

- Radiologists
- Cardiothoracic surgeons
- Forensic pathologists
- Toxicologists
- Cardiac Epidemiologists
- Emergency medicine physicians
- Forensic economists

Strategies for Deposing Defendant Doctors and Medical Witnesses

When deposing defendant doctors and other medical witnesses, a win/win strategy is to get the witness to either agree or disagree that each of the symptoms presented was a symptom of aortic dissection. Agreement with a symptom—even a less common one—can be used as the basis for an argument that aortic dissection should have risen in the differential diagnosis. Conversely, disagreement with a symptom can be used to demonstrate the witness's lack of knowledge.

Counsel will also want the witnesses to commit to the premise that aortic dissection is serious and that it should be ruled out in the differential diagnosis before less serious conditions, and that the only way to definitively rule out aortic dissection is through a CT scan.

A chest X-ray can be helpful in the event it was performed as it can provide anatomical clues that are highly suggestive of dissection. It is sound practice to present the defendant doctors with copies of the patient's chest radiographic images and ask them to outline in color directly on the image the aortic arch, the mediastinum, and the path of the trachea. Counsel should use the marked-up images to get the doctor to concede there are anatomical abnormalities that are often present with aortic dissection. While the doctor may agree that anatomical abnormalities are present, it is likely that they will disagree as to the cause. Large body habitus, poor study quality (AP v. PA studies), and patient rotation are likely defenses that should be anticipated and challenged.

Strategies for Countering Comparative Negligence Defenses

It is a common defense tactic to "blame the patient" in medical malpractice cases, and aortic dissection cases are no exception. The defendants on trial may resort to raising predisposing risk factors (such as drug use) and other issues relating to an unhealthy lifestyle to suggest that the patient brought this upon themselves. To be clear: The case is about whether the standard of care was met, not what caused the aortic dissection. Plaintiffs counsel should file motions in limine to preclude from trial any evidence, testimony or argument that has no bearing on whether the patient received proper medical treatment pursuant to Pennsylvania Rules of Evidence 402 and 403 and Shiner v. Moriarty, 706 A.2d 1228 (Pa. Super. 1998), Clinton v. Giles, 719 A.2d 314 (Pa. Super. 1998) and Whyte v. Robinson, 617 A.2d 390 (Pa. Super. 1992).

Final Thoughts

Aortic dissection cases are complex, and best practice demands that they be handled by attorneys with extensive medical and legal knowledge and significant trial experience. Like all medical malpractice lawsuits, aortic dissection lawsuits can transcend individual clients and help improve how medicine is delivered. Most emergency department doctors and other health care workers, let alone members of the public, have had little or no exposure to aortic dissection. Lawsuits serve to raise awareness and almost certainly will help save lives.

Bethany R. Nikitenko is a partner at Feldman Shepherd Wohlgelernter Tanner Weinstock Dodig. She can be reached at bnikitenko@feldmanshepherd.com.

Reprinted with permission from the April 22, 2025 edition of the THE LEGAL INTELLIGENCER © 2025 ALM Global Properties, LLC. All rights reserved. Further duplication without permission is prohibited, contact 877-256-2472 or asset-and-logo-licensing@alm.com. # TLI-5212025-64473