Detecting a symptom-free killer

Too many people die needlessly from ruptured abdominal aortic aneurysms. In the United States, ruptured abdominal aortic aneurysms (AAA) cause 15,000 deaths each year in the 200,000 people diagnosed annually with the disease. The condition is detectable and treatable but in three out of four cases, there will be no symptoms.

L.J. ANDERSON

The aorta, the largest human artery, carries oxygenated blood away from the heart to the rest of the body. When the aorta reaches the abdomen, it becomes the abdominal aorta. Some individuals are susceptible to a weakening in the wall of this portion of the aorta, and the resulting ballooning out or aneurysm may eventually rupture, causing internal hemorrhage and often death.

Congress recognized the value of a screening benefit for this potentially lethal but treatable condition. Since Jan.1, 2007, eligible new Medicare beneficiaries now receive one free ultrasound screening for AAA. Eligibility is based on whether a man has smoked at least 100 cigarettes in his lifetime and for both men and women, whether there is a family history of AAA (www.vascularweb.org).

Dr. Ronald Dalman, professor and chief of vascular surgery at Stanford, is principal investigator of AAA: STOP (Abdominal Aortic Aneurysms Simple Treatment or Prevention), a study looking at risk factors for AAA and at the effects of exercise in limiting growth of small AAAs (www.aaastop.stanford.edu).

Q: How prevalent is AAA disease in the general population, and how does the rate differ among ethnic groups?

A: AAA is an age-related disease, usually identified by the sixth or seventh decades of life. There are other genetically-determined aortic diseases that may cause aneurysms earlier in life, such as Marfan's or Ehlers-Danlos syndromes. [In contrast] AAA is quite common in the population in general, and death by rupture accounts for tens of thousands of deaths in mature adults each year. AAA disease is roughly four times more common in men than women. However, AAA may rupture or become clinically significant at smaller sizes in women, and outcomes for surgical repair are worse in women than in men. Caucasians are most at risk but all ethnic groups are susceptible.

Q: What are the risk factors for developing it, and what role does atherosclerosis play?

A: In addition to advanced age, the most common modifiable risk factor for AAA disease is cigarette smoking. The next most significant risk factor is genetic, but inherited risk accounts for only a small percentage of all AAA. There are many similarities but also important differences between atherosclerosis and AAA disease. AAA disease occurs most commonly in the aorta below the arteries to the kidneys, and aneurysms are 10 times more likely to occur in that location rather than in the aorta in other locations. Atherosclerosis occurs in many circulations all over the body such as the neck, chest and extremities. Cigarette smoking is an important risk factor for both conditions, but diabetes is not. AAA disease is also not as clearly linked to obesity and other well-known atherosclerosis risk factors. At the level of the diseased arteries themselves, atherosclerosis affects only the inner lining of arteries, causing progressive narrowing and reducing blood flow, while aneurysm disease affects all layers of arteries and causes progressive weakening and enlargement.

Q: How is an aneurysm detected, and what can be done about an existing one?

A: Although large AAA can be detected on physical examination, most AAA are discovered "incidentally" during abdominal imaging examinations ordered for other reasons. In fact, for every "large" AAA considered appropriate for surgical repair (generally greater than 5.5cm in diameter), there are 10 patients who have aneurysms discovered on imaging exams that are too small to repair surgically. Generally, the risks of AAA repair surgery outweigh the benefits until the aneurysm exceeds 5.5cm in diameter. These recommendations can vary significantly based on other co-existing conditions.

For patients with large AAA, there are several surgical options available, including new minimally invasive techniques pioneered by Stanford vascular surgery faculty. We perform hundreds of these procedures electively each year with excellent results overall. Unfortunately, once a large AAA become symptomatic (usually distinguished by severe abdominal and back pain, inability to stand up or move one's legs, or fainting) treatments outcomes are much worse. If you know that you have an aneurysm and it is enlarging or at the threshold for treatment, see a vascular surgeon promptly.

LJ Anderson writes on health every Tuesday. She can be reached at lj.anderson@yahoo.com.