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NEWS

RSNA Press Release

Endografts Help Prevent Deaths from Abdominal Aortic Aneurysms

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At A Glance

- An abdominal aortic aneurysm (AAA) is a weakening in an arterial wall of the abdominal area.
- Only 50% of patients brought to the E.R. with ruptured abdominal aortic aneurysms (AAA) survive.
- For some patients, endografts reduce morbidity and mortality rates.
- Endografts are minimally invasive and offer patients fewer complications, less pain and a quicker recovery than open surgical repair.

NEW YORK - A ruptured aneurysm in the abdominal aorta is one of the most challenging situations emergency medical physicians face-50 percent of the patients who make it to the emergency room cannot be saved. But a new, image-guided, endovascular surgical device called an endograft is giving emergency room physicians and vascular surgeons a promising alternative for treating ruptured abdominal aortic aneurysms.

"Preliminary research shows that endografts may improve the treatment outcomes for abdominal aortic aneurysms," said David M. Williams, M.D., professor of radiology and division director of vascular and interventional radiology at the University of Michigan. "Studies have shown that, in select patients, the endovascular procedure results in less morbidity and mortality than conventional surgery."

The abdominal area is the most common location for an aneurysm, a weakening in the arterial wall that allows the artery to stretch and bulge. According to the University of Michigan Health System, every year roughly 3 to 9 percent of Americans between the ages of 60 and 70 suffer an abdominal aortic aneurysm. While many individuals live with small aneurysms, larger aneurysms are prone to rupture, which is often fatal. Ruptured abdominal aortic aneurysms are the 13th leading cause of death in the United States, claiming 15,000 lives annually.

"Fifty percent of the patients who suffer a ruptured abdominal aortic aneurysm do not live to see a physician," Dr. Williams said. "Those who arrive alive to the emergency room are not in the best condition to withstand the physiological insult of surgery and open repair. They are promising candidates for a technique that patches the aorta from the inside." Dr. Williams spoke today at a Radiological Society of North America (RSNA) media briefing on image-guided therapies.

In traditional surgical aneurysm repair, a surgeon makes an incision in the abdomen, cuts out the damaged part of the aorta and sews a graft in its place, eliminating the aneurysm. In the image-guided, endovascular repair, the stent graft, a woven polyester tube with a metallic skeleton, is compressed inside a carrier catheter. While viewed on an x-ray monitor, the stent graft, through an incision in the patient's groin, is threaded via the catheter through arteries to the site of the aneurysm. The stent graft is then placed across the aneurysmal segment and released. As the stent graft expands, it grips the normal arterial wall on both ends of the aneurysm, bypassing the bulge from the inside.

"With endovascular repair, we're able to avoid some of the stresses of conventional surgery, such as clamping the aorta," Dr. Williams said. "Because patients experience less anesthesia and less blood loss, they are able to recover and return to their customary activities more quickly."

Endografts are also a potential lifesaver for individuals facing non-emergency, elective repair of an abdominal aortic aneurysm. Elective repair is generally recommended for patients whose aneurysms grow larger than five centimeters in diameter. Before endograft procedure came into practice, patients who were not good surgical candidates had to live with a potentially life-threatening aneurysm.

"When I'm asked who is best suited for the elective procedure, my answer is, the endograft is great for great-grandpa but not for grandpa," Dr. Williams said. "Someone who is healthy should have the durable, proven surgical procedure. But patients who are at risk, either because of advanced age or coexisting medical problems, are good candidates for the endograft."

The medical community has not yet reached a consensus as to the long-term efficacy and cost-effectiveness of endovascular repair, which is still a relatively new procedure, but early results are promising, and for certain patients, the endograft is a viable, potentially life-saving alternative.

Dr. Williams foresees continued refinements and new developments in the procedure. "I believe that stent grafts are a little like transistors," he said. "In its time, the transistor was an ingenious device that revolutionized the personal electronics and computer industries. With incremental improvements piled on top of each other, the transistor evolved in a dozen different directions. "New developments," he continued, "such as designer-kapok to fill the aneurysm sac and prevent leaks, remote monitoring devices implanted in the aneurysm to monitor pressure in the aneurysm sac, and stronger and thinner fabrics will result in a similar evolution of the stent graft."

The RSNA is an association of more than 33,000 radiologists, radiation oncologists and related scientists committed to promoting excellence through education and by fostering research, with the ultimate goal of improving patient care. The Society's headquarters are located at 820 Jorie Boulevard, Oak Brook, Ill. 60523-2251. (http://www.rsna.org)

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