

Long-term survival after less-invasive repair of abdominal aneurysm same as with 'open' procedure

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Despite earlier signs that a less-invasive surgery is safer and better than "open" operations to repair potentially lethal abdominal aortic aneurysms, a study led by a Johns Hopkins professor shows survival rates after four years are similar for both procedures.

In an extended follow-up of [patients](#) in the OVER (Open Versus Endovascular Repair) Trial, researchers found that, contrary to expectations, the two procedures carried about the same long-time survival after four years, even though survival was higher in the endovascular group at the two-year mark. Moreover, among elderly patients often considered too weak to undergo traditional blood vessel repairs, results showed they did not do better with an operation that avoids fully opening the abdomen.

Instead, the OVER trial showed that the minimally invasive operation did not result in increased survival in patients 70 years and older, with benefits confined mainly to those who are younger, according to Julie A. Freischlag, M.D., director of the Department of Surgery at the Johns Hopkins University School of Medicine and leader of the national trial.

A report on the study, which followed patients for up to nine years, appeared in the Nov. 22 issue of *The [New England Journal of Medicine](#)*.

"Overall, the results suggest that the outcomes following endovascular

repair continue to improve and the procedure is now an acceptable alternative to open repair, even when judged in terms of long-term survival," says Freischlag, a professor of surgery at Johns Hopkins and a [vascular surgeon](#) at the Baltimore VA Medical Center, one of the sites where the study was conducted. "But this research raises a new question of whether older patients should even have their aneurysms repaired, because even when they were fixed, it did not prolong life. They are dying of the diseases of old age."

Abdominal [aortic aneurysms](#) occur when the wall of the body's biggest blood vessel, at its location in the abdomen, balloons. If an aneurysm ruptures, severe bleeding is often quickly lethal, so when a dilated vessel over two inches is discovered, surgeons often try to repair it. Abdominal aortic aneurysm is the 14th-leading cause of death for the 60- to 85-year-old age group in the United States.

An open surgery involves a large incision made in the belly to clamp, cut out the bulge, and replace the weakened part of the aorta with a graft, an operation that costs about \$5,000. Patients are at risk of long hospital stays, pain and an increased risk of infections, risks associated with most major operations.

With endovascular repair, a tube or stent containing the graft is threaded into an artery through a small incision near the groin, then pushed up into the aorta. Once in the right place, the sheath on the tube is pulled back and the graft pops out to sit inside the aneurysm. The aneurysm isn't cut out, but is contained in a way that defuses the danger of rupture.

This graft costs about \$35,000 and only works on patients with the appropriate anatomy to fit the graft. Those who have endoscopic repair must be monitored by CT scans every six months to make sure the graft has not shifted out of place.

For the OVER study, 881 patients ages 49 and older at 42 Veterans Affairs medical centers were randomly assigned to either endovascular repair or open repair beginning in 2003, and were followed for up to nine years. The average age of the patients was 70.

In each group, 146 deaths occurred from all causes. There were 10 aneurysm-related deaths (two within 30 days of surgery and eight later) in the endovascular repair group, and 16 (13 in the first 30 days and three later) in the open repair group. Six aneurysm ruptures were confirmed in the endovascular group; none occurred in the open repair group. The researchers say the ruptures occurred only in patients who did not have regular, recommended CT scans.

Each year, 40,000 people in the United States undergo elective abdominal aortic aneurysm repairs. Some 1,250 people die within the first 30 days after surgery—more than for any other general or vascular surgical procedure, with the exception of colon removal.

People who have abdominal aortic aneurysms are older, usually men and often smoke cigarettes. Freischlag says that people under 70 and who are more likely to follow through with CT scans will benefit from endovascular repair. But it definitely is not best for the older patients for which it was envisioned to be a better option, she says.

"If a patient is young enough and healthy enough to have the open repair, it's a good way to go, because it's cheaper, easier to do and does not require follow-up CT scans every six months," Freischlag says. "But if patients are older and in poorer health, repair may not be an option. Costs and benefits must be carefully weighed for each individual."

Provided by Johns Hopkins University School of Medicine

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