
RSNA Press Release

Non-Invasive Approach to Aneurysm Repair Shows Better Results for Patients

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OAK BROOK, Ill.- Non-invasive repair of abdominal aortic aneurysms offers better short-term results than traditional surgical treatment, according to a study published in the September issue of the journal *Radiology*.

Researchers at Massachusetts General Hospital/Harvard Medical School in Boston and Erasmus University Medical Center in Rotterdam, the Netherlands, conducted a systematic review of nine published studies comparing the original therapy for abdominal aortic aneurysms -- open surgical repair -- and endovascular repair, an alternative introduced in 1991.

Based on their review of the reported results from 1,318 procedures (687 endovascular and 631 open surgical), the researchers determined that endovascular repair results in less blood loss, shorter intensive-care unit and hospital stays, lower 30-day mortality, and lower systemic complication rates than open surgical repair.

"This study is part of a comprehensive assessment of this newer, non-invasive procedure's role in the management of patients with abdominal aortic aneurysms," says G. Scott Gazelle, M.D., Ph.D., coauthor of the study and director of the Massachusetts General Hospital Decision Analysis and Technology Assessment Group. "While the jury may still be out on the long-term effectiveness of endovascular repair, in the short term, it performs as expected."

The abdominal area is the most common location for an aneurysm, an abnormal dilatation (or bulge) in the aorta. While many individuals live with small aneurysms, larger aneurysms are prone to rupture, which is often fatal. Ruptured abdominal aortic aneurysms claim 15,000 lives annually.

To prevent rupture, elective repair is generally recommended for patients whose aneurysms grow larger than five centimeters in diameter. The goal of both the surgical and newer endovascular repair therapies is to replace the weakened part of the aorta with an artificial tube, or graft. The main difference in the two procedures is the way the graft is placed inside and attached to the walls of the weakened aorta.

In traditional aneurysm repair, a surgeon makes an incision in the abdomen, cuts out the damaged part of the aorta, and sews the graft in its place. In endovascular repair, the graft is threaded through a blood vessel and placed at the site of the aneurysm through a catheter, which is inserted through an incision in the patient's groin.

The choice of therapy depends on a number of factors, including the size and location of the aneurysm, as well as the age, symptoms, and general health of the patient. Many patients with abdominal aortic aneurysms exhibit other effects of cardiovascular disease, making them risky candidates for surgery. For these patients, endovascular repair offers a lifesaving alternative.

"Like other non-invasive procedures, endovascular repair is less stressful for patients," says Gazelle. "No abdominal incision or aortic clamping and less anesthesia translate into less pain, fewer complications and a quicker recovery."

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Radiology is a monthly scientific journal devoted to clinical radiology and allied sciences. The journal is edited by Anthony V. Proto, MD, School of Medicine, Virginia Commonwealth University, Richmond, Virginia. *Radiology* is owned and published by the Radiological Society of North America, Inc. (<http://radiology.rsna.org>.)

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"Elective Endovascular versus Open Surgical Repair of Abdominal Aortic Aneurysms: Systematic Review of Short-term Results." Collaborating with Dr. Gazelle on this paper were Miraude E.A.P.M. Adriaansen, M.Sc., Johanna L. Bosch, Ph.D., Elkan F. Halpern, Ph.D., and M.G. Myriam Hunink, M.D., Ph.D.