

Surgically sealing heart pouch in A-fib patients appears to reduce strokes, death

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Credit: Duke University

People with an irregular heart rhythm known as atrial fibrillation are prone to blood clots that form in the heart and travel to the brain, causing a stroke.

In about 90 percent of these thromboembolic strokes, clots originate in a small pouch on the heart wall called the left atrial appendage. Surgeons and cardiologists sometimes remove or close the appendage to eliminate this source of blood clots.

Although closure of the left atrial appendage has been shown to be safe, the procedure remains controversial and evidence of its effectiveness has been inconclusive.

Now a team led by Duke Clinical Research Institute scientists has found that surgically sealing the pouch at the time of other cardiovascular surgeries is associated with fewer strokes from blood clots in older [patients](#) with [atrial fibrillation](#).

"While our study was not a randomized trial, it does demonstrate strong support for the benefits of closing the left atrial appendage at the time of cardiac surgery in patients with atrial fibrillation," said Daniel J. Friedman, M.D., a cardiology research fellow at the Duke Clinical Research Institute and lead author of a study presented on March 19, 2017, at the American College of Cardiology 66th Annual Scientific Session meeting in Washington, D.C.

Atrial fibrillation affects between 3 million and 6 million U.S. adults. Anticoagulation drugs such as warfarin are effective in managing [blood clots](#) in these patients, but more than half of them do not take the drugs for a variety of reasons, including the risk of bleeding.

Low rates of oral anticoagulant use have driven interest in other ways to control clotting, including sealing off the left atrial appendage either

with a catheter through a vein in the leg or surgically during a cardiac procedure.

In the Duke-led study, researchers focused on the surgical approach. They used the Society of Thoracic Surgeons National Database to identify more than 10,000 Medicare recipients with atrial fibrillation undergoing cardiac surgery. Patients were predominantly male (61 percent), had a median age of 76, and were at high risk for stroke.

In 37 percent of cases, patients underwent the additional surgery to close off the appendage in a procedure called left atrial appendage occlusion, or LAAO. This group of patients tended to be in better cardiovascular health than those who did not undergo the surgical LAAO.

After statistically adjusting for these differences, the research team found that the surgical LAAO procedure was associated with a 40-percent reduction in thromboembolism and a 15-percent reduction in all-cause death after one year. Additional analyses demonstrated that the lower risk of thromboembolism occurred predominantly among patients who were discharged from the hospital without blood thinners.

"Our study suggests that surgical left atrial appendage occlusion appears safe regardless of whether patients received anticoagulation therapy after discharge, and it could be particularly beneficial for patients who cannot take anticoagulation therapies for medical reasons," Friedman said.

"Patients scheduled to undergo open heart surgery should talk with their surgical teams about closure of the left atrial appendage," said principal investigator J. Matthew Brennan, M.D., an interventional cardiologist in Duke's Division of Cardiology. "Particularly among patients with atrial fibrillation, this may be one of the most effective available treatments to prevent future strokes. Until randomized trials are available, this study will represent the strongest available data in this field."

The authors note that the study was limited by its use of Medicare data, which included only older adults. It also had a non-randomized design, and was unable to identify the method used to seal the appendage or to gauge the success of the procedure. Randomized studies are needed to determine whether anticoagulation can be safely withheld in patients who have had successful surgical LAAO.

Provided by Duke University

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