

New system for repairing abdominal aortic aneurysms

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(Medical Xpress) -- When Dr. Ross Milner repaired Lydia Strebing's life-threatening abdominal aortic aneurysm, she was astonished at how easy it was.

"I've had more pain from dental procedures," she said. "This was nothing."

Milner, chief of vascular surgery at Loyola University Hospital, repaired the bulging aneurysm using a catheter that deployed a device called a stent graft.

Milner is the first physician in Illinois to use a new system that is enabling him to deploy stent [grafts](#) in Strebing and other patients with greater precision. Milner also is one of two physicians who are heading up a multicenter study of the device.

An abdominal [aortic aneurysm](#) (AAA) is a bulge in the aorta, the major blood vessel that extends down to the abdomen. A large aneurysm is life threatening. At any time, it could suddenly burst, causing massive internal bleeding that is usually fatal. About 15,000 people in the United States die each year from such ruptures. Albert Einstein, Lucille Ball and George C. Scott are among those who have died from ruptured aortic aneurysms.

A stent graft is a Gore-Tex tube supported by metal webbing. It is put in place by a catheter (thin tube). Milner inserts the catheter in a groin

artery and guides it to the aneurysm. After he deploys the stent graft from the catheter, the device expands outward to the walls of the artery. Blood now flows safely through the tubelike stent, rather than through the bulging aneurysm.

Proper placement of the device is critical to ensure that it stays in place. Milner is the first physician in Illinois to use the new Gore C3 Delivery System. This system, recently approved by the [Food and Drug Administration](#), enables the physician to reposition the stent graft before final release from the delivery [catheter](#).

"You look at the X-ray, and if the stent graft is not in the exact position where you want it to be on your first try, you can safely reposition it," Milner said.

The ability to reposition the stent graft is especially helpful in cases where the anatomy of the aorta makes stent placement challenging. The new delivery system will minimize complications that could occur if the stent graft has to be repositioned after initial deployment, Milner said.

Milner and other members of his vascular surgery team are doing aneurysm repairs in Loyola University Hospital's new hybrid operating room (OR). The hybrid OR combines the imaging capabilities of a cardiac catheterization lab with the sterile environment of a conventional operating room.

The room is equipped with advanced fluoroscopy equipment, which produces X-ray images of internal organs in motion. The images are displayed on 11 monitors in the operating room.

"It's the best of both worlds," Milner said. "We have a state-of-the-art operating room environment, along with state-of-the-art imaging."

Using new techniques and technologies, Loyola physicians are treating an increasing percentage of aneurysms in the chest and abdomen with stent grafts rather than with open surgery.

A traditional open surgery requires an 18-inch incision, at least a week in the hospital and an 8- to 10-week recovery. There are major risks, including stroke and paralysis.

Strebing, by comparison, spent just two days in the hospital, and the only restriction on her activity was to avoid lifting more than 10 pounds for two weeks. Strebing, 63, lives in Lyons, Ill.

Strebing's aneurysm was discovered when she had an MRI for a back problem. Doctors kept an eye on it for several years until the bulge widened to 5 cm. (2 in.). By that point, the five-year risk of a catastrophic rupture was as high as 50 percent.

The [aorta](#) is the largest blood vessel in the body and is approximately the width of a garden hose. The stent graft Milner used is 5.5 inches long and nearly an inch in diameter at its widest point.

"I tell anyone who has an aneurysm to have this procedure done," Strebing said. "It is almost painless."

Stent grafts now on the market can repair aneurysms for 60 percent to 70 percent of AAA patients, Milner said. He estimates that an additional 10 percent to 15 percent of patients potentially could benefit from new devices and delivery systems.

Milner heads a team of vascular surgeons at Loyola who are conducting clinical trials on stent grafts and other minimally invasive treatments for aortic aneurysms and other vascular diseases.

Milner is an associate professor in the Department of Surgery at Loyola University Chicago Stritch School of Medicine.

Provided by Loyola University Health System

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