

New heart valve replacement procedure 'transforms' care for inoperable patients with advanced disease

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(Medical Xpress)—A Painted Post woman is recovering after undergoing a less invasive heart-valve replacement procedure at the University of Rochester Medical Center. The valve replacement technique is meant for patients who cannot withstand traditional surgery.

Kay Cary, 80, was among the first to receive a transcatheter [aortic valve replacement \(TAVR\)](#) as a treatment for severe [aortic stenosis](#), a potentially deadly condition that is common among elderly adults. She was too frail to undergo open-heart surgery to replace the valve, as a diabetic and [cancer survivor](#).

URMC is one of about 80 sites in the country selected to offer this procedure. Early studies show this new procedure restores quality of life and extends survival.

"This is a game changer. It is the beginning of a transformational change in the care for some people with valvular [heart disease](#)," said Frederick Ling, M.D., director of the [Cardiac Catheterization](#) and Electrophysiology Lab. "This is life-saving for patients with advanced aortic stenosis because there is nothing else for them at this point."

Aortic stenosis is a condition caused by a thickening of the valve and as a result, the heart must work harder to push the blood through the body.

Patients endure fatigue, dizziness and a poor quality of life.

"This new FDA-approved, less invasive [heart valve replacement](#) procedure is one more tool in caring for people too ill for open-heart surgery," said George L. Hicks, M.D., chief of [Cardiac Surgery](#). URMC is one of about 80 sites in the country selected to offer this procedure.

The delicate procedure was first introduced in France in 2002 and clinical studies in the United States led to limited use in the U.S. To date, more than 25,000 patients have been treated with the TAVR technique by multidisciplinary heart teams worldwide.

URMC's Heart and Vascular Center has a large team of specialists – cardiologists, cardiac and vascular surgeons, anesthesiologists, [radiologists](#) and support staff – to perform the TAVR procedure.

The team made an incision in the patient's groin to gain access to the femoral artery and doctors implanted a temporary pacemaker to control the heart rhythm throughout the procedure. Interventional cardiologists and cardiovascular surgeons worked together to thread a catheter slightly larger than the width of a pencil through to her heart.

The collapsible valve, made by Edwards Sapien, was crimped down and fed through the catheter. Just before implantation, the pacemaker sped up Cary's heart to 180 beats a minute, causing the heart to quiver. At that point, the valve was expanded using a balloon, pushing aside the leaflets of the diseased valve. The valve's metal stent walls embed into the original valve, locking it into place. The balloon was deflated and removed, along with the catheter and the pacemaker.

Results of the PARTNER (Placement of AoRTic [TraNscathetER](#) Valve) trial indicate some potential complications from surgery include stroke and vascular problems, such as aortic dissection or perforation.

Patients are hospitalized for one or two weeks and are typically walking within 24 hours of the procedure.

What is aortic valve stenosis?

The aortic valve allows blood to flow from the heart's lower left chamber, or ventricle, into the aorta and to the body. Stenosis is diagnosed when calcium builds up in the valve, causing it to thicken or harden, preventing the valve from opening properly. When this occurs, the heart has to work harder to pump blood through the valve.

The heart can make up for aortic valve stenosis and the extra pressure for a long time. However, at some point, it won't be able to keep up the extra effort of pumping blood through the narrowed valve, leading to heart failure

As many as 1.5 million people in the U.S. suffer from aortic stenosis, approximately 500,000 of them have severe disease. Without an aortic valve replacement half of patients will not survive more about two years after the onset of symptoms.

URMC's [Heart](#) and Vascular Center spent more than a year planning and preparing for this advance in care. "The training and coordination required to perform this procedure was intense," Ling said. In addition to having a team of experienced interventional cardiologists, it requires cardiac and vascular surgeons as well as a full surgical team to be ready for any complications that may occur.

Provided by University of Rochester Medical Center

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