Nonsurgical Mitral Valve Placement Doable

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Percutaneous mitral valve replacement may be on the horizon, first-in-man results with the transcatheter CardiAQ valve suggest.

Compassionate use in an 88-year-old man with class IV heart failure and severe symptomatic mitral regurgitation yielded good valvular function on postoperative transesophageal and 3-dimensional echo, with little paravalvular leak, Joseph E. Bavaria, MD, of the University of Pennsylvania in Philadelphia, reported here at the Society of Thoracic Surgeons' pre-meeting Tech-Con.

The patient had been denied open heart surgery after a recent stent to a stenosed coronary artery bypass graft.

In the most recent preclinical data with the valve, none of the 19 animals initiating implantation had device migration or obstruction of the left ventricular outflow tract.

Correct positioning of the device appeared to play a role in the results, as the 14 animals with correct intra-annular positioning of the device had proper valve function after the procedure (74% of total), unlike the five with too high or too low positioning.

With those "quite satisfactory" results, the device is ready for its European regulatory approval trial, suggested Bavaria, who holds an equity interest in the devicemaker.

CardiAQ's percutaneous mitral valve is a self-positioning, self-anchoring bioprosthesis designed to address functional mitral regurgitation. Many other similar devices are in the works as well, but mitral valve replacement has proven slower to develop than aortic valve replacement.

One of the challenges is the large size of the mitral valve compared with the aortic valve, requiring a larger system for delivery, Bavaria noted. Placement of the valve in the single patient treated so far required 3 L/min bypass support.

"None of this is reality yet, but it's coming on," Bavaria told attendees. "We'll get there."

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