MedicalXpress

Minimally invasive mitral valve surgery offers viable option for select heart patients

March 31 2016

Patients undergoing minimally invasive mitral valve repair or replacement (mini-MVR) have similar outcomes as patients undergoing conventional surgery and also experience shorter hospital stays and fewer blood transfusions, according to an article posted online today by *The Annals of Thoracic Surgery*.

Key Points:

- Mini-MVR demonstrated no differences compared to conventional surgery in major outcomes or total hospital costs.
- Mini-MVR was associated with shorter hospital lengths of stay and fewer blood transfusions.
- Use of mini-MVR is expected to increase over the next few years as more results on outcomes and costs become available.

MVR is a common treatment for mitral valve disease, including mitral stenosis (when the valve doesn't allow enough blood flow) and mitral regurgitation (when blood leaks backwards out of the valve).

"Our research is the first multi-institutional study of patients undergoing mini-MVR as compared to traditional surgery," said Emily A. Downs from the University of Virginia in Charlottesville, who led the study. "We believe our results are important as they may facilitate further adoption of mini-MVR and provide patients with more options when faced with surgery."

Dr. Downs, Gorav Ailawadi, MD, and researchers from a statewide consortium of 18 hospitals in the Virginia Cardiac Surgery Quality Initiative examined records for 1,304 patients who underwent isolated MVR from 2011 to 2014. This included 425 (32.6%) who underwent mini-MVR.

During traditional MVR, a cardiothoracic surgeon makes a 6- to 8-inch long incision down the center of the sternum (breastbone) to open the chest and provide direct access to the heart. In mini-MVR, the surgeon makes a 2- to 3-inch incision between the ribs on the right chest.

The researchers found that patients undergoing mini-MVR had similar rates of mortality, stroke (in contrast to previous research), and other complications compared with conventional MVR. They also found that mini-MVR patients experienced shorter intensive care unit and hospital lengths of stay, as well as fewer blood transfusions. Total hospital costs were similar between the two groups, despite previous assumptions by the researchers that mini-MVR might lead to higher costs.

"In our experience, mini-MVR is suitable for many patients and is particularly useful in both elderly patients with mobility issues and in young, healthy patients who desire quicker recovery and return to work," said Dr. Ailawadi. "Patients who are not ideal candidates for mini-MVR include those with severe mitral annular calcification, right ventricular dysfunction, or considerable aortic calcification."

Adoption of mini-MVR has been slow; however, procedural volume is expected to increase as more results on outcomes and costs become available.

"Mini-MVR may not be appropriate for all centers, surgeons, or patients; however, it should be an essential approach to consider in the armamentarium of an advanced mitral valve center," said Dr. Ailawadi.

More information: Down E, Johnston L, LaPar D, Ghanta R, Kron I, Speir A, Fonner C, Kern J, Ailawadi G. Minimally Invasive Mitral Valve Repair Provides Excellent Outcomes Without Increased Cost: A Multi-Institutional Analysis. *Ann Thoracic Surg* 2016; DOI: doi.org/10.1016/j.athoracsur.2016.01.084