Transcatheter Aortic Valve Insertion After Previous Mitral Valve operation

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Introduction

Transcatheter aortic valve insertion is an emerging treatment strategy for aortic valve stenosis. The safety and efficacy of the procedure has been intensively examined in five prospective studies, four of which were randomized (I–4). In all of the studies, however, previous valve heart replacement was an exclusion criterion. Consequently, there has been limited experience with transcatheter valve insertion after previous mitral valve operation, with most published information being case reports or small case series. We hypothesized that transcatheter aortic valve insertion could be safely performed in such a circumstance. To better understand the associated procedural risks and outcomes, we reviewed our single-center experience.

Methods

• The Institutional Review Board approved this study. We retrospectively reviewed the records of 772 consecutive patients who received transcatheter aortic valve insertion in our multidisciplinary heart team from November 2008 through August 2016. There were 18 (2%) patients who had previous mitral valve operation, and these patients formed the study cohort.

• Baseline patient characteristics, operative data, and survival data were recorded based on definitions set forth in the Society of Thoracic Surgeons Adult Cardiac Surgery Database (Chicago, Illinois, USA) and Mayo Clinic Radiological Database (Mayo Clinic, Rochester, MN).

• All patients received preoperative cardiac gated multidetector computed tomography angiography to assess the aortic valve, left ventricular, and mitral valve, and the relationship with the mitral valve. Specific transcatheter aortic valve types were selected at the discretion of the multidisciplinary heart team with no formal institutional selection algorithm. Valve pros and cons were based on standard recommendations provided in the respective transcatheter valve instructions for use.

• The preoperatively obtained cardiac gated multidetector computed tomography scans were retrospectively reviewed to determine the aortic annulus-mitral valve prosthetic distance. The aortic annulus-mitral valve prosthetic distance is the distance from the center of the aortic valve annulus to the prosthesis orifice. Baseline patient characteristics, operative data, and survival data were recorded based on definitions set forth in the Society of Thoracic Surgeons Adult Cardiac Surgery Database (Chicago, Illinois, USA) and Mayo Clinic Radiological Database (Mayo Clinic, Rochester, MN). The safety and efficacy of the procedure have been intensively examined in five prospective studies, four of which were randomized (I–4). In all of the studies, however, previous valve heart replacement was an exclusion criterion. Consequently, there has been limited experience with transcatheter valve insertion after previous mitral valve operation, with most published information being case reports or small case series. We hypothesized that transcatheter aortic valve insertion could be safely performed in such a circumstance. To better understand the associated procedural risks and outcomes, we reviewed our single-center experience.

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