Commentary: Keep an eye on the aortic valve

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Hypertrophic obstructive cardiomyopathy is a complex disease characterized by massive asymmetric idiopathic left ventricular muscular hypertrophy, especially at the level of the basal interventricular septum, that in association with anomalies of mitral valve apparatus predispose to systolic anterior motion and left ventricular outflow tract obstruction. Septal surgical myectomy is the gold standard for the treatment of hypertrophic obstructive cardiomyopathy and is associated with low operative mortality when performed in high-volume, high-experience centers. An analysis performed at 5 high-volume centers showed 0.4% 30-day mortality, which is lower than most common cardiac surgical procedures (ie, mitral valve repair or coronary artery bypass grafting). Myectomy is often performed through a transaortic approach, and although it might be considered a simple procedure, it is associated with several complications, such as ventricular septal defect, mitral regurgitation, and pacemaker implantation. Aortic regurgitation (AR) is an additional complication that, if not treated, may cause heart failure for worsening of the diastolic dysfunction.

In this issue of the Journal, Juarez-Casso and colleagues analyzed the incidence of AR and its impact on late outcomes after transaortic septal myectomy. Iatrogenic AR occurred in 2% of patients. Interestingly, one half of these patients required unplanned aortic valve repair caused mostly by the noncoronary cusp injury, near the commissure between the noncoronary and right aortic sinuses. The authors showed aortic valve repair was durable, with a cumulative incidence of 5% for aortic valve reoperation, whereas the predicted probability of developing moderate or severe AR was less than 2% at 10 years.

Results are excellent and performed by a cardiac center leader in this field, and the authors conclude that iatrogenic AR is a common complication after transaortic septal myectomy. Surprisingly, noncoronary cup injury was the most common lesion reported, and this was probably related to right-handed surgeons injuring the valve during instrumentation. In this regard, the authors propose a simple but useful maneuver consisting of a mattress stay suture on the nodule of Arantius to keep away the cups from the valve orifice. Nevertheless, 37% of 27 patients requiring aortic valve surgery presented with new-onset AR on the intraoperative postbypass transesophageal echocardiogram, which indicates that additional causes may contribute to AR. Annulus distortion, loss of subvalvular support after myectomy, and some degree of fibrosis of cusps might explain why more significant degrees of AR are seen later postoperatively, as a reaction to minor leaflet trauma related to hemodynamic effects postbypass. Finally, change in flow characteristics after surgery may create a turbulent jet that may adversely affect the aortic valve. In light of these results, preoperative assessment and intraoperative inspection of the aortic valve are required when performing transaortic septal myectomy.

References