“Forgotten” valve or “enigmatic” valve? Further insights into the tricuspid valve in patients undergoing mitral valve surgery

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Commonly referred to as the “forgotten valve,” the tricuspid valve (TV) has received increasing attention in recent years. Functional tricuspid regurgitation (fTR) was often overlooked in the past, both because correction of left-sided valvular pathology was thought to sufficiently ameliorate fTR and because the optimal TV repair technique was unknown. We now know that fTR does not always improve after left-sided surgery and that residual tricuspid regurgitation (TR) imparts a poor long-term prognosis. Residual TR is associated with a 2-fold risk of heart failure and a 50% decrease in 5-year survival. Residual TR is also progressive, with one-half of all patients having progression by more than 2 grades 5 years after surgery. In addition, isolated TV surgery for TR is associated with unacceptable morbidity and mortality after mitral valve (MV) surgery.

In light of these findings, some investigators have argued strongly for concomitant TV repair for patients with any amount of fTR—or even for those with isolated tricuspid annular dilation without fTR—when they undergo left-sided valvular surgery. Several different tricuspid annuloplasty rings have been designed for fTR, with none demonstrating clear clinical superiority to date. Some evidence suggests, however, that flexible rings may be associated with a lower risk of dehiscence relative to rigid rings. Determining which criteria should be applied to performing TV repair in patients undergoing MV surgery remains a topic of debate.

Current guidelines recommend that severe TR should be addressed at the time of MV surgery, because TV
In conclusion, the risk of development of significant TR appears to be low in highly selected patients undergoing mitral procedures for degenerative disease, and this risk is not affected by the choice to perform MV repair versus replacement. The critical question of when to perform TV repair in patients with moderate or less fTR remains controversial and requires further study. Perhaps it is time to start addressing the TV as the “enigmatic valve,” rather than as the “forgotten valve.”

Unfortunately, preoperative TV annular dimensions and extent of tricuspid leaflet tethering were not reported. Not surprisingly, Rajbanshi and colleagues were unable to demonstrate a significant effect of MV repair versus replacement on the development of subsequent TR. With these limitations in mind, it appears that patients with degenerative MV disease and moderate or less TR without the previously mentioned indications for TV repair have a low incidence of severe TR 5 years after MV surgery. Rajbanshi and colleagues were unable to identify any variables associated with development of late TR on multivariate analysis. Although they concluded that timing of MV repair in degenerative MV disease may influence progression of fTR, this conclusion was based on univariate analysis showing higher pulmonary arterial pressures and larger left atrial size in patients with TR progression, variables that were not significant on multivariate analysis. Further data are required in order to support such a hypothesis.

In conclusion, the risk of development of significant TR appears to be low in highly selected patients undergoing mitral procedures for degenerative disease, and this risk is not affected by the choice to perform MV repair versus replacement. The critical question of when to perform TV repair in patients with moderate or less fTR remains controversial and requires further study. Perhaps it is time to start addressing the TV as the “enigmatic valve,” rather than as the “forgotten valve.”

References


