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Marc Gillinov, MD, Kevin Hodges, MD, Daniel JP. Burns, MD, MPhil

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Commentary: Don’t Fix Things that Are Not Broken

Marc Gillinov, MD, Kevin Hodges, MD, Daniel JP Burns, MD, MPhil
Department of Thoracic and Cardiovascular Surgery
Cleveland Clinic

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Corresponding Author:
Marc Gillinov, MD. Department of Thoracic and Cardiovascular Surgery, Cleveland Clinic.
9500 Euclid Avenue/Desk J4-1, Cleveland, OH 44195. Phone: 216-445-8841. Fax: 216-636-9463. Email: gillinom@ccf.org
Central Message: “Repairing” the tricuspid valve when it leaks minimally or not at all does not improve clinical outcomes.

Central Picture Legend: Marc Gillinov, MD, Kevin Hodges, MD, Daniel JP Burns, MD, MPhil

By nature, cardiac surgeons strive to fix things that are broken. However, all medical decision-making requires consideration of the risks and benefits related to the intervention. This calculation, a key component of the preoperative decision-making process, guides the surgeon’s operative plan and execution. In this issue of the Journal, Hasan and colleagues provide important data that informs decision-making regarding tricuspid valve repair in patients with moderate or less tricuspid regurgitation (TR) (1). Examining patients who had surgery for degenerative mitral valve disease, the authors concluded that the addition of a tricuspid annuloplasty in those with moderate TR did not impact the subsequent clinical course. In addition, they found no relationship between tricuspid annular diameter and TR progression in patients with less than severe TR. These findings inform ongoing discussions and debate concerning the role—if any—of tricuspid valve repair in those with moderate or less TR.

Moderate TR

Moderate TR can progress if left untreated at the time of mitral valve surgery. In the recent CTSN trial, the addition of an annuloplasty in those with moderate TR reduced the likelihood of increasing TR over the ensuing two years (2). However, as in the Mayo Clinic series, this did not
result in any clinical benefit over that time frame. Still, it is possible that a clinical benefit to tricuspid valve repair might be realized in those with moderate TR and right ventricular dysfunction and/or pulmonary hypertension. Therefore, it seems reasonable to consider a tricuspid valve annuloplasty in patients with moderate TR.

Annular Dilatation

The data from Hasan et al. add to the growing unease associated with “repairing” the tricuspid valve in those with annular dilatation and TR that is graded as less than moderate. These valves are not broken. Placing an annuloplasty is meant as a prophylactic measure to prevent future development of significant TR and clinical consequences. But this report (1), the CTSN trial (2), and recent data from Northwestern (3) demonstrate that progression of TR is uncommon in those with less than moderate TR and annular dilatation. In fact, it is unlikely that TR progression will occur in those with an annular diameter less than 45 mm (3). Therefore, annular dilatation with less than moderate TR should not be considered an indication for tricuspid valve repair.

Pacemakers

No intervention is free of complications. In the CTSN trial, tricuspid valve annuloplasty with a rigid or semi-rigid undersized ring was associated with a nearly six-fold increase in subsequent pacemaker implantation (2). Employing either suture annuloplasty, a flexible band, or an incomplete ring, Mayo investigators documented a much lower incidence of pacemaker implantation after tricuspid valve annuloplasty (3); however, those who received a tricuspid valve procedure still experienced a modest increase in the requirement for a postoperative pacemaker (1). Taken together, these two findings suggest that 1) tricuspid valve annuloplasty increases the likelihood of requiring a subsequent pacemaker but that 2) technique for tricuspid valve annuloplasty can influence the rate of pacemaker implantation.
When all of these data are considered in aggregate, one can only conclude with an old adage: Don’t fix things that are not broken.

References


