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Commentary: Opportunity knocks for every heart surgeon, but you have to give a tricuspid a ring

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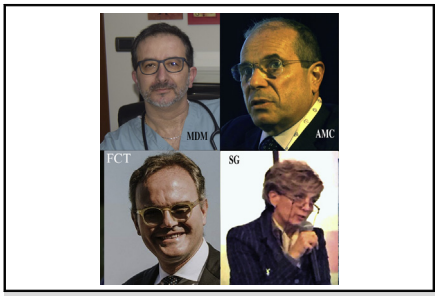

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CENTRAL MESSAGE

The long-term results of the paper by Sohn and colleagues add a new, valid piece to the complex puzzle of evidence reported in the literature.

The long-term results of the paper entitled "Long-Term Outcomes of Rigid Ring Versus DeVega Annuloplasty for Functional Tricuspid Regurgitation: A Propensity Score Matching Analysis" by Sohn and colleagues[1] add a new, valid piece to the complex puzzle of evidence reported in the literature.[2-4] Parolari and colleagues,[5] pooling the data from 9 studies, reported the freedom from recurrent moderate or greater tricuspid regurgitation (TR) at 8 and 15 years in patients who underwent TR repair with a prosthetic ring was 88.5% (95% confidence interval [CI], 84.5-92.5) and 78.9% (95% CI, 69.7-89.3), significantly greater than patients who underwent TR repair without a prosthetic ring, 81.8% (95% CI, 78.0-85.8) and 50.5% (95% CI, 40.2-63.6) ($P = .0107$).

Conversely, a very recent meta-analysis[3] reported the pooled effect of the technique on late recurrence of TR; 4 studies in which function TR was treated with either ring or suture failed to show any difference (risk ratio, 0.98; CI, 0.72-1.33). The ring cohort involved either a flexible or rigid ring, so the authors compared the effect of the type of ring used on late TR recurrence. Hence, pooling the results of 4 studies, the rigid ring was found to provide more stable results over time rather than the flexible. The latter finding was confirmed also by the meta-analysis reported by Wang and colleagues[3]; the authors pooled the results from 5 studies and concluded that a rigid ring had significantly better freedom from moderate or more TR at 5 years (odds ratio, 0.44; 95% CI, 0.20-0.99), even if there was no significant difference in overall rates of reoperation ($P = .232$) and survival ($P = .086$) between a flexible band and rigid ring. These differences are found in the fact that most of the studies compared heterogenous groups of rings.

Sohn and colleagues[1] compared 2 matched groups of patients with functional TR undergoing a De Vega or rigid ring. They did not find any difference in terms of long-term all-cause mortality, cardiac mortality, and tricuspid valve–related events, but when a rigid ring was used, the cumulative incidence of TR recurrence at 10 years was significantly lower (6.3% vs 19.1%, $P < .0.001$), and this finding was confirmed, by means of a longitudinal analysis, in all periods.

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A strange finding of the present study is that ring provided better long-term outcomes and echocardiographic results in a subset of patients with TR grade below moderate. Although this result confirmed that even lesser-grade TR deserves to be treated, it sounds a bit odd, since lesser TR grade more often mirrors a lesser tricuspid valve annular dilatation and leaflet tethering, so that a De Vega procedure could be enough; on the contrary, in patients with high-grade TR, morphologic alteration of either annulus or subvalvular apparatus are deeper and deserve the application of a ring.[4] This finding deserves surely a further evaluation, hopefully in a larger cohort of patients.

However, we can conclude, paraphrasing what a famous American actress and comedian named Mae West said, "Opportunity knocks for every man, but you have to give a woman a ring," by saying "Opportunity knocks for every heart surgeon, but you have to give a tricuspid a ring."

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Commentary: Ring versus string

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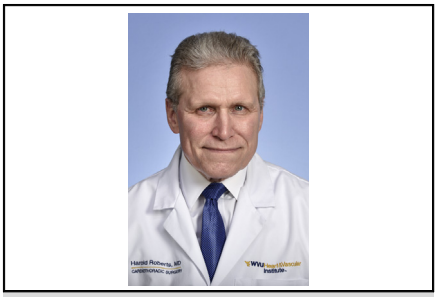

Harold G. Roberts, Jr, MD, FACS

CENTRAL MESSAGE

Does equipoise still exist between rigid remodeling and suture annuloplasty for secondary functional tricuspid regurgitation?

Persistent functional tricuspid regurgitation (FTR) may result in longitudinal morbidity or symptoms following left-sided cardiac operations. Although debate on the merits of addressing moderate FTR continues, relying on FTR to spontaneously resolve after addressing other lesions during cardiac procedures may be met with disappointment.[1] In recent years, surgeons are becoming more aggressive in surgically treating significant FTR at the time of a cardiac procedure. The "forgotten valve" is becoming less neglected. In fact, according to the Society of Thoracic Surgeons database, the frequency of tricuspid procedures has nearly doubled over the last 10 years.[2]

In this issue of the *Journal*, Kim and colleagues[3] from Seoul University shared their considerable experience in managing FTR with either rigid ring or suture "De Vega" annuloplasty. Although the study was reasonably constructed with excellent follow-up averaging 102 months, the major weakness was that the De Vega cohort contained older and sicker patients with a greater incidence of atrial fibrillation and reoperations. Thus, even with propensity matching, the long-term outcomes may be biased against the De Vega group. With greater-risk patients, one might readily see how the surgeon in such a case might opt for a

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