LETTERS TO THE EDITOR

The role of annuloplasty in mitral valve repair

To the Editor:

We read with much interest the article "Repairing the Degenerative Mitral Valve: Ten- to Fifteen-Year Follow-up," by Alvarez and associates.¹ We strongly disagree with these authors, who contend that annuloplasty is not an absolute requirement in mitral valve reconstruction. Since the physiology of the mitral anulus has been understood, the annuloplasty procedure was ever used and now it is generally considered a "milestone" in mitral valve reconstruction.

The mitral anulus is a complex structure. The complexity derives from its composition, its geometric relationship, and its pathophysiology. Only a C-shaped portion touches the underlying left ventricular wall; the remaining 25% to 30% of the anulus is intracavitary and continuous with the aortic root and the right and left fibrous trigone. Muscular representation is the basis for the geometric relationship. In fact, the mitral anulus is elliptic and changes shape during the cardiac cycle, being more circular in diastole.² Basically, the mitral anulus has two passive functions: (1) to be a support for the leaflet attachments and (2) to insulate electrically the atrium from the ventricle. The anatomic features of the mitral valve in degenerative diseases are represented by (1) various degrees of symmetric posterior annular dilatation, (2) excess leaflet tissue, and (3) abnormal thickening of the leaflets. The various techniques of valve repair, leaflet resection, chordal transposition, and shortening procedures are clearly supported by an annuloplasty, which is performed for four main reasons: (1) to reduce the annular dilation and mitral valve area, (2) to increase leaflet coaptation, (3) to reinforce the anulus sutures when part of the valve has been resected, and (4) to prevent future dilation of the anulus. Stabilization of the posterior anulus with a ring or other type of support seems important for the reinforcement of the posterior leaflet, and we believe it is a "must" in mitral valvuloplasty. In our large experience³ we always used an annuloplasty, and no patients had left ventricular outflow tract obstruction as a result of systolic anterior motion of the mitral valve.

Concerning a "foreign body," as the authors define annular devices, I would like to propose our type of annuloplasty technique performed with the use of autologous pericardium. A posterior pericardial annuloplasty reduces the annular size but allows for it to continuously change during the cardiac cycle. In our series there has not been a significant increase of endocarditis and thromboembolic episodes, and long-term results are encouraging. Because we are presently working with this type of annuloplasty, we are very interested to hear the basis for the authors' conclusion about the possibility to restore annular function without any surgical procedures on the anulus. The aim of this letter is not to criticize but to express our appreciation

for the endeavors of the authors in mitral valve reconstruction, which is not an easy task.

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Reply to the Editor:

My colleagues and I appreciate the comments of Drs. Scrofani and Santoli regarding our article and accept their appreciation of our endeavors at mitral valve repair. We wholeheartedly welcome their constructive criticism.

However, I believe that we are closer to complete agreement with them than to strong disagreement. At no stage in our article do we state that an annuloplasty is not an absolute prerequisite to achieve a successful and durable repair. What we do state is that an annuloplasty *ring* is not at absolute prerequisite. This statement is clearly enunciated throughout the article. Just as Drs. Scrofani and Santoli state that "stabilization of the posterior anulus with a ring or *other type of support* [my italics] . . . is a must for mitral valvuloplasty," so too do we clearly enunciate this on page 245, paragraph 4 of the *Discussion*: "of the many factors contributing to successful repair, we believe the key to be stabilization of the posterior anulus by a localized annuloplasty to relieve any tension on the reconstructed leaflets."

Unlike Drs. Scrofani and Santoli, I would not call our series of 155 patients a large experience, but it does have a long follow-up, with 23 patients at 10 years. In their series of 113 cases, freedom from reoperation at 5 years is 89.7%, no confidence intervals are given, and the number of patients at risk is 22; in our series, freedom from reoperation at 10 years is 90.3% $\pm$ 4%, with 23 patients at risk.

If I may disabuse Drs. Scrofani and Santoli about our technique of restoring "annular function without any