Are you sure you can do a perfect Maze?

Leonid Sternik, MD

From the Department of Cardiac Surgery, Sheba Medical Center, Affiliated to Tel-Aviv University, Tel-Hashomer, Israel.

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Address for reprints: Leonid Sternik, MD, Department of Cardiac Surgery, Sheba Medical Center, Tel-Hashomer, Israel (E-mail: Leonid.sternik@sheba.health.gov.il).

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Central Message

For patients with risk factors for the development of late de novo atrial fibrillation we might do a surgical AF ablation, but it should be a perfect ablation procedure with minimal risks.

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First of all I thank the authors for this important and excellently written report.¹ We all know that some patients after mitral valve surgery suffer from new (de novo) atrial fibrillation (AF) in the late follow-up. The authors carefully studied a large group of patients and provided us with numbers: the 5- and 10-year incidence of new AF is 14% and 23%, respectively. A group from Mayo Clinic reported similar numbers.² We know that AF is a risk factor for stroke, and the authors proved it. Stulak and colleagues reported that de novo AF significantly reduces late survival.² AF catheter or surgical ablation late after mitral repair or replacement is a challenging procedure with a pretty low success rate. So, we have to do something to prevent de novo AF late after mitral surgery.

The authors reported that the risk factors for de novo AF are older age, comorbidities, coronary artery bypass or coronary disease, aortic and tricuspid valve surgeries, pacemaker implantation, congestive heart failure, and nondegenerative mitral disease. For me, the need for the aortic and especially tricuspid surgery means more advanced disease. The authors concluded that a trial of prophylactic surgical AF ablation, especially in high-risk patients, to limit the development of late AF might be warranted. I believe that if one is going to do a prophylactic surgical ablation procedure this procedure must be perfect. We cannot afford in this case any atypical flutters, noncontractile atria, or pacemaker implantation.

The authors reported that longer cardiopulmonary bypass and cross-clamp time as well as longer hospital stay are the risk factors for de novo AF. However, the finding that patients who developed in-hospital postoperative AF were more likely to develop late de novo AF ($P < .001$) was very interesting to me. We are aware that AF begets AF and aggressive treatment of early postoperative AF can reduce the amount of AF in late follow-up.³ Another important finding was that late tricuspid regurgitation was associated with AF. Stulak and colleagues pointed out that AF can cause tricuspid regurgitation.⁴ However, I can argue that late tricuspid regurgitation can cause AF, at least in some

cases. It seems to me, that to prevent late de novo AF we should treat carefully in-hospital AF after cardiac surgery and pay attention to the tricuspid valve while performing surgery. It can be easier to put an annuloplasty ring than to treat late de novo AF with severe tricuspid regurgitation.

Now we are entering the era of very safe cardiac surgical procedures. No one is surprised anymore with 0.1% surgical mortality of mitral repair. The additional use of a surgical AF ablation procedure should add no mortality and morbidity.⁵ So, for patients with risk factors for the development of late de novo AF we might do a surgical AF ablation, but it should be a perfect ablation procedure with minimal risks.

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