Pulmonary Vein Isolation and Left Atrial Reduction for Chronic Atrial Fibrillation Secondary to Mitral Valve Disease

To the Editor:

We read with interest the article by Kalil and colleagues [1] on pulmonary vein isolation for treating secondary atrial fibrillation in mitral valve disease. The authors have presented a simple solution to the complex problem posed by atrial fibrillation in mitral valve disease. Pulmonary vein isolation alone in their series has achieved a 92.3% conversion to sinus rhythm at 6 months, which is commendable. The authors have suggested based on their past experience [2] that reversion to normal sinus rhythm was likely in those patients with a left atrial size less than 52 mms. During the postoperative course in their series antiarrhythmic therapy was used in as many as 40% of patients and 1 patient required a pacemaker implant.

The technique of left atrial reduction and pulmonary vein isolation for chronic atrial fibrillation with mitral valve disease has been described by one of us [3]. The operation involves division of the superior vena cava, extending the left atriotomy to encircle the pulmonary veins, and excision of a rim of left atrial wall and the left atrial appendage. We have performed this procedure in 44 cases. The procedure is safe and 10 of our patients were redo procedures and 6 had double valve replacement.

Patients in our study were selected for left atrial reduction when the left atrial size exceeded 60 mms. Thirty-eight of 44 patients (86%) came back to normal sinus rhythm and 34 are maintaining the same at 1-year follow-up. Transesophageal echocardiography has demonstrated left atrial contractility in 30 patients. No patient required pacemaker implantation and 8 patients required antiarrhythmic therapy with amiodarone.

We subscribe to the view that a critical mass of left atrial tissue appears necessary to sustain atrial fibrillation and that left atrial size has been identified as the key factor differentiating maze-amenable and maze-refractory atrial fibrillation [4]. We would like to stress, based on our experience, that LA reduction is an important contributory factor in addition to pulmonary vein isolation to convert this subset of patients to normal sinus rhythm. We believe LA reduction in addition to pulmonary vein isolation is highly effective in restoring normal sinus rhythm as well as the geometry of the LA in patients with mitral valve disease.

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Reply

To the Editor:

Thank you for the opportunity to comment on this letter from Dr Sankar and coworkers. Their group is to be congratulated for their contribution to this novel field in cardiovascular surgery. Indeed, our previous paper [1] demonstrated a trend to spontaneous postoperative reversion to sinus rhythm in those patients with a left atrial dimension less than 52 mm when associated with mitral regurgitation, but we did not find this trend for mitral stenosis.

In our technique of simple surgical pulmonary vein isolation (IVP) [2], antiarrhythmic therapy with amiodarone is a useful adjunct. This may be related to atrial size, as many of our patients have very large atria, or to other trigger points outside the excluded atrial area. The important point is that previous chronic refractory atrial fibrillation is reversed to sinus rhythm.

Atrial reduction may contribute to a better surgical result by eliminating some critical atrial mass and possible additional trigger points for the arrhythmia. It adds complexity to the procedure, however, and one of the attractions of our procedure is its simplicity which can be reproduced in any cardiac surgical center. For this reason, we do not employ more radical techniques of atrial reduction. Indeed, we may ressect some tissue and use larger bites of suture in large atria.

Finally, we should mention that in very large atria, where the atrial wall has lost its structure and the myocardial layer is very thin, fibrotic, and even calcified, it is not worthwhile to attempt to reverse atrial fibrillation. Even if we succeed in reverting the rhythm, the atrium will not contract, as it has lost this ability. Atrial reduction should be reserved for large atria with preserved wall structure.

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Glove Punctures in Cardiac Surgery

To the Editor:

The report by Eklund and associates [1] again draws attention to a serious problem that has persisted in spite of earlier warnings. They report that surgeons changed gloves owing to recognized loss of integrity 70 times in 116 heart operations; postoperative testing revealed that 39% of the presumed-intact gloves had

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