Surgical Radiofrequency MAZE III Ablation for Treatment of Atrial Fibrillation during Open Heart Surgery

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Abstract

Background- Atrial fibrillation is a common arrhythmia in patients with rheumatic mitral and other valve diseases who are candidates for valve repair surgery. Conversion to sinus rhythm has positive effects on quality of life and lowering medication use. The aim of this clinical study was to evaluate the effectiveness of the radiofrequency ablation Maze III procedure in the treatment of atrial fibrillation associated with rheumatic heart valve disease.

Methods- We applied the modified Cox III Maze procedure with the use of radiofrequency ablation in the treatment of atrial fibrillation associated with rheumatic heart valve disease and evaluated the outcome in 20 patients with atrial fibrillation. Demographic, echocardiographic, electrocardiographic and Doppler study data were calculated before and six months and one year after surgery.

Results- No perioperative deaths occurred in the study group. Duration of additional time needed for doing radiofrequency ablation was about 22 minutes. Freedom from atrial fibrillation was 85% and 75% at six months and one-year follow up, respectively.

Conclusions- The addition of the radiofrequency ablation Maze procedure to heart valve surgery is safe and effective in the treatment of atrial fibrillation associated with rheumatic heart valve disease ***(Iranian Heart Journal 2006; 7 (4):6-12)***.

Key words: radiofrequency ablation < Maze < atrial fibrillation ■ rheumatic heart valve disease

Among the varieties of supraventricular arrhythmias that confront electrophysiologists, atrial fibrillation remains the most vexing, affecting 0.4% of the general population and up to 10% of persons older than 65 years of age. Not only is atrial fibrillation extremely common, it is a progressive disorder that is often poorly controlled with anti-arrhythmic medications.[1,2] More importantly, atrial fibrillation (AF) is often associated with other cardiac diseases, compromising the patient's clinical outcome. 60% of patients admitted for mitral valve surgery and up to 5% of patients undergoing coronary revascularization are known to have chronic AF.

Restoration of sinus rhythm (SR) with atrioventricular resynchronization may be difficult in patients with chronic or permanent AF or other risk factors for AF.[2,3] Over the past 5 years, increasing attention has been focused on the development of catheter ablation techniques and ablation systems to cure atrial fibrillation.

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