Ablation for Mitral Valve Patients With AF Successfully Controls Heart Rhythm

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The largest randomized trial to date investigating surgical ablation of atrial fibrillation (AF) in mitral valve surgery (MVS) patients showed that 2 surgical ablation strategies significantly increased the freedom from AF at 12 months. A. Marc Gillinov, MD, Cleveland Clinic Foundation, Cleveland, Ohio, USA, presented the trial results [Gillinov AM. *N Engl J Med*. 2015].

AF occurs in about 30% to 50% of MVS patients. The current evidence is limited; thus, there is a weak recommendation in the 2014 American Heart Association/American College of Cardiology/Heart Rhythm Society guidelines for managing AF with surgical ablation during MVS [January CT et al. *J Am Coll Cardiol*. 2014]. The objective of this study was to determine the efficacy and safety of surgical ablation in this population.

Drawing on the multicenter Cardiothoracic Surgical Trials Network, study investigators screened 3502 and enrolled 260 patients scheduled for MVS. All had experienced persistent AF that was not self-limiting for > 7 days (or < 7 days with cardioversion) or had suffered long-standing persistent AF for > 1 year.

Left atrial appendage closure was performed in all participants. Then patients were randomized to MVS only (127 patients) or MVS plus ablation (MVS+; 133 patients). The ablation group randomly received pulmonary vein isolation or biatrial maze procedure.

The primary end point was freedom from AF at both the 6- and 12-month marks, as demonstrated by a 3-day Holter monitor test. Treatment failure was defined as the recurrence of AF, death prior to 12 months, or need for repeat ablation. Secondary end points were mortality, major adverse cardiac and cerebrovascular events, quality of life, and serious adverse events.

A majority of patients in the MVS and MVS+ groups had long-standing persistent AF and organic mitral disease. Surgical characteristics were similar between groups except for a longer period (about 15 minutes) of cardiopulmonary bypass during ablation in the MVS+ group ($P = .03$).

During Holter tests at 6 and 12 months, more MVS+ than MVS patients experienced freedom from AF: 63.2% vs 29.4% (95% CI, 0.21 to 0.47; $P < .001$). The results were similar with both ablation strategies. Quality-of-life measures did not differ significantly, except for daily occurrence of AF, which occurred half as often in the ablation group (Table 1).

Table 1. Ablation Reduces Daily Occurrence of AF

	MVS Alone (n = 127)	MVS + Ablation (n = 133)	*P* Value
SF-12			
Physical Function	45.3 ± 7.9	44.3 ± 9.0	.38
Mental Function	48.5 ± 6.5	48.0 ± 6.3	.56
AF Severity Scale			
Daily AF, no. (%)	42 (45.2)	20 (19.8)	< .001
Life Rating, 1 to 10, median (IQR)	8.0 (7.0-9.0)	8.0 (7.0-9.0)	.45
NYHA class III or IV, no. (%)	3 (2.9)	8 (7.0)	.17

AF, atrial fibrillation; IQR, interquartile range; MVS, mitral valve surgery; SF-12, Medical Outcomes Study 12-Item Short Form Health Survey; NYHA, New York Heart Association.

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Source: Gillinov AM. *N Engl J Med*. 2015.

Ablation did not increase the risk of death or major adverse cardiac and cerebrovascular events, but it significantly raised the risk for permanent pacemaker implantation. The incident rate ratio of pacemaker insertion was 2.64 (95% CI, 1.20 to 6.41; $P < .001$) among those who had had MVS+ compared with MVS alone, with most pacemakers being implanted during the index hospitalization (88.5%).

A major study limitation is the likely suboptimal method of the primary outcome measure ascertainment and missing primary end point data for 20% of patients. Although ablation resulted in freedom from AF at 1 year in this study, the risk of pacemaker implantation was increased. Further investigation is needed to determine the effect on stroke and long-term survival and the need for continuous anticoagulation therapy.