TERMINATION OF ATRIAL FIBRILLATION DURING HYBRID ABLATION IS NOT A PREDICTOR OF CLINICAL OUTCOME IN PATIENTS WITH PERSISTENT ATRIAL FIBRILLATION

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PROBLEM

Atrial fibrillation (AF) has been found to be a major contributor to stroke and mortality (1,2), and hospitalizations for AF have increased two to threefold over the past several years (3). Primary termination by ablation has been shown to be predictive of intermediate term results in simple catheter ablation (4). Limited information exists on the importance of AF termination as a predictor of clinical outcome during hybrid ablation.

BACKGROUND

An epicardial/endoendocardial ablation (hybrid) approach has emerged as an option to treat a difficult population of patients with persistent AF (Fig 1).

OBJECTIVE

This retrospective study aimed to demonstrate the significance of AF termination during hybrid ablation of persistent AF patients with no prior ablation.

METHODS

We studied results from 63 consecutive hybrid ablations in patients with no prior ablation, a mean (±SD) persistent AF duration of 19±16 months and a mean follow up of 27±13 months. Patients received both epicardial ablation of the posterior left atrial (LA) wall using a small midline approach, and a stepwise endocardial ablation (pulmonary vein isolation, ablation of complex fractionated atrial electrograms, and/or linear lesions) with AF termination as the procedural endpoint (Fig 2). AF termination during the procedure was defined as conversion of AF to either sinus rhythm (SR) or atrial flutter (AF), which subsequently converted to SR during the above ablation techniques (Group 1). For patients not terminating to SR with the above steps, electrical and/or pharmacological cardioversion was used (Group 2). Arrhythmia-free survival was defined as no arrhythmia (AFI or AF) following an initial 90 day period. To determine time to arrhythmia, ambulatory monitoring and/or electrocardiogram results during follow-up visits were collected. Arrhythmia-free survival at 12 months was determined using Kaplan-Meier estimates.

RESULTS

There were no statistically significant differences between the two groups in baseline characteristics (Fig 3). There was also no significant difference in total ablation time between the two groups (p=0.3). Arrhythmia-free [AF + AFI] survival at 12 months for those with [Group 1] and without [Group 2] AF termination during the procedure was 56% and 58%, respectively (p=0.7). AF-free survival was not significantly different between Group 1 and Group 2 (74% vs 79%, p=0.9), nor was atrial flutter-free survival (66% vs 57%, p=0.4).

CONCLUSIONS

Conversion to sinus rhythm during the ablation procedure vs. the need for cardioversion is not a good predictor of clinical outcome in a challenging population of patients with a long history of persistent AF who undergo the hybrid ablation procedure. This finding suggests that following hybrid ablation in patients with longstanding persistent AF, a different mechanism may be responsible for AF recurrence compared to patients undergoing simpler catheter ablation.

REFERENCES