

Electrophysiological characteristics and catheter ablation in patients with paroxysmal right atrial fibrillation.

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摘要

Abstract

Background-Catheter ablation of the right atrial (RA) substrate has had variable efficacy in curing paroxysmal atrial fibrillation (PAF), suggesting that RA substrate ablation can play an important role in the treatment of atrial fibrillation (AF) in some patients. The aim of this study was to investigate the electrophysiological characteristics and ablation strategy and its results in a specific group of patients with paroxysmal RA-AF. Methods and Results-The study population consisted of 13 patients (8 men; age, 64 ± 15 years) with drug-refractory (2 ± 1 drugs), frequent episodes of PAF. Provocation maneuvers did not reveal any ectopic beat-initiating AF. However, rapid atrial pacing easily induced AF. Activation mapping during sinus rhythm, atrial pacing, and AF was visualized by using a noncontact mapping system. Noncontact mapping revealed RA reentry (6 patients with single-loop circuits and 7 with double-loop circuits) with conduction through channels between lines of block, crista terminalis gaps, and the cavotricuspid isthmus, which could be identified during sinus rhythm and atrial pacing, resulting in fibrillatory conduction in other parts of the RA. The consistency of wavefront activation was confirmed by frequency analysis from equally distributed mapping sites in the RA. Short lines of ablation lesions were aimed at the conduction channels between the lines of block, crista terminalis gaps, and the cavotricuspid isthmus, resulting in bidirectional block. AF was eliminated in 11 (85%) of 13 patients, and those 11 patients with acute success were free of AF without any antiarrhythmic drugs during the long-term follow-up period (16 ± 6 months). Conclusions-RA ablation still can cure selected patients with PAF. Linear ablation of the RA substrate guided by the electrophysiological characteristics of RA-AF is an effective approach for treating this specific group of patients with AF..