Electrophysiologic characteristics in initiation of paroxysmal atrial fibrillation from a focal area

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摘要

Abstract

OBJECTIVES

We investigated the electrophysiologic characteristics in the initiation of paroxysmal atrial fibrillation (PAF) from a focal area.

BACKGROUND

The electrophysiologic characteristics in the initiation of PAF are still not clear.

METHODS

The study group consisted of 77 patients (M/F = 65/12, age 66 ± 12 years) with frequent episodes of PAF; we analyzed: 1) 15 cycle lengths of electrical activity before the onset of atrial fibrillation (AF); 2) coupling interval (CI) of the first ectopic beat just before the initiation of AF; and 3) the prematurity of an ectopic beat (prematurity index [PI] = CI/mean of preceding 15 cycle lengths).

RESULTS

A total of 111 episodes of sustained AF were identified. Two patterns of AF initiation were observed: group I (59/111, 53%) included the episodes preceded by cycle length oscillation, and group II (52/111, 47%) included the episodes initiated by a single ectopic beat with preceding cycle length relatively constant. The PI of group I episodes was significantly greater than that of group II (0.41 ± 0.12 vs. 0.34 ± 0.10, $p < 0.01$). The CI (267 ± 54 ms vs. 217 ± 55 ms, $p < 0.05$), AF1 (194 ± 36 ms vs. 153 ± 37 ms, $p < 0.05$) and PI (0.49 ± 0.13 vs. 0.37 ± 0.11, $p < 0.01$) of the AF episodes

from the superior vena cava (SVC) were significantly longer and greater than those of AF episodes from pulmonary veins (PVs).

CONCLUSIONS

In patients with PAF originating from PVs or the SVC, two major initiating patterns were found. Moreover, the electrophysiologic characteristics in the initiation of AF originating from the SVC were also different from those of AF initiating from the PVs.

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