Clinical and Electrophysiologic Characteristics of Intra-Istmus Reentry

Masayoshi Kofune, Ichiro Watanabe, Yasuo Okumura, Koichi Nagashima, Hiroaki Mano, Kazumasa Sonoda, Kimie Ohkubo, Toshiko Nakai, Yuji Kasamaki, Satoshi Kunimoto, Atsushi Hirayama

Division of Cardiology, Department of Medicine, Nihon University School of Medicine, Tokyo, Japan

Background: Intra-isthmus reentry (IIR) is a circuit within the cavotricuspid isthmus (CTI). The purpose of this study is to define the electrogram and surface ECG characteristics of IIR. Methods and Results: Three patients underwent electrophysiologic study and were found to have IIR. One patient had found to have IIR during redo procedure. Detailed electrogram mapping of the CTI and electroanatomic mapping (EAM) was available in all. In all, entrainment mapping during tachycardia proved reentry and showed that the lateral CTI was out of the circuit and the septal CTI was in the circuit. During tachycardia, fractionated or double potentials were recorded at either septal CTI or the regions of the os of the coronary sinus (CSos). Surface ECG showed either typical counterclockwise (CCW) pattern (2 patients) or atypical patterns (1 patient). The EAMs showed a focal pattern in 2 patients. Conclusions: IIR shows a tachycardia circuit confined to the septal CTI/CSos region, and hypothesize that this circuit involves show conduction within the CTI and around the CSos, which acts as a central obstacle.

Keyword: intra-isthmus reentry