Temperature and impedance monitoring during radiofrequency catheter ablation of slow AV node pathway in patients with atrioventricular node reentrant tachycardia.

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摘要

Abstract

This study was designed to observe the changes of temperature and impedance and to find the role of temperature control in radiofrequency ablation of slow pathways in patients with AV node reentrant tachycardia. Power, impedance and temperature were measured during each application of radiofrequency energy while the generator was operated in the power control mode. A total of 760 applications were delivered in 76 patients. The success rate was 100% without recurrence during a follow-up period of 8 +/- 3 months. The mean catheter tip temperature associated with successful ablation was 51.3 +/- 5.4 degrees C (range 45 degrees C to 64 degrees C), and significantly higher than the unsuccessful pulses (48.7 +/- 6.2 degrees C, $P < 0.05$). The mean temperature was 49.8 +/- 3.1 degrees C during accelerated junctional rhythm, significantly higher than the pulses without this rhythm. The mean temperature correlated well with early decrease of impedance ($r = 0.71$, $P < 0.001$), and an early decrease of impedance more than 5 ohms had an 87% positive predictive value for adequate tissue heating. These data suggested that, if temperature monitoring was available, setting the target temperature at about 51 degrees C could achieve adequate tissue heating for successful ablation of slow pathway; if not, impedance monitoring with an early decrease of impedance < 5 ohms could predict adequate tissue heating.