

Electrophysiologic characteristics and radiofrequency catheter ablation in children with Wolff-Parkinson-White syndrome.

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摘要

Abstract

BACKGROUND: The majority of cardiac arrhythmias in children are supraventricular tachycardia, which is mainly related to an accessory pathway (AP)-mediated reentry mechanism. The investigation for Wolff-Parkinson-White (WPW) syndrome in adults is numerous, but there is only limited information for children. This study was designed to evaluate the specific electrophysiologic characteristics and the outcome of radiofrequency (RF) catheter ablation in children with WPW syndrome. **METHODS:** From December 1989 to August 2005, a total of 142 children and 1,219 adults with atrioventricular reentrant tachycardia (AVRT) who underwent ablation at our institution were included. We compared the clinical and electrophysiologic characteristics between children and adults with WPW syndrome. **RESULTS:** The incidence of intermittent WPW syndrome was higher in children (7% vs 3%, $P=0.025$). There was a higher occurrence of rapid atrial pacing needed to induce tachycardia in children (67% vs 53%, $P=0.02$). However, atrial fibrillation (AF) occurred more commonly in adult patients (28% vs 16%, $P=0.003$). The pediatric patients had a higher incidence of multiple pathways (5% vs 1%, $P<0.001$). Both the onset and duration of symptoms were significantly shorter in the pediatric patients. The antegrade 1:1 AP conduction pacing cycle length (CL) and antegrade AP effective refractory period (ERP) in children were much shorter than those in adults with manifest WPW syndrome. Furthermore, the retrograde 1:1 AP conduction pacing CL and retrograde AP ERP in children were also shorter than those in adults. The antegrade 1:1 atrioventricular (AV) node conduction pacing CL, AV nodal ERP, and the CL of

the tachycardia were all shorter in the pediatric patients. CONCLUSION: This study demonstrated the difference in the electrophysiologic characteristics of APs and the AV node between pediatric and adult patients. RF catheter ablation was a safe and effective method to manage children with WPW syndrome.