

Multiple anterograde atrioventricular node pathways inpatients with atrioventricular node reentrant tachycardia

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摘要

Abstract

OBJECTIVES: This study sought to investigate electrophysiologic characteristics and possible anatomic sites of multiple anterograde slow atrioventricular (AV) node pathways and to compare these findings with those in dual anterograde AV node pathways. **BACKGROUND:** Although multiple anterograde AV node pathways have been demonstrated by the presence of multiple discontinuities in the AV node conduction curve, the role of these pathways in the initiation and maintenance of AV node reentrant tachycardia (AVNRT) is still unclear, and possible anatomic sites of these pathways have not been reported. **METHODS:** This study included 500 consecutive patients with AVNRT who underwent electrophysiologic study and radiofrequency ablation. Twenty-six patients (5.2%) with triple or more anterograde AV node pathways were designated as Group I (16 female, 10 male, mean age 48 +/- 14 years), and the other 474 patients (including 451 with and 23 without dual anterograde AV node pathways) were designated as Group II (257 female, 217 male; mean age 52 +/- 16 years). **RESULTS:** Of the 21 patients with triple anterograde AV node pathways, AVNRT was initiated through the first slow pathway only in 3, through the second slow pathway only in 8 and through the two slow pathways in 9. Of the five patients with quadruple anterograde AV node pathways, AVNRT was initiated through all three anterograde slow pathways in three and through the two slower pathways (the second and third slow pathways) in two. After radiofrequency catheter ablation, no patient had inducible AVNRT. Eleven patients (42.3%) in Group I had multiple anterograde slow pathways eliminated simultaneously at a single ablation site. Eight patients (30.7%) had these slow pathways eliminated at different ablation sites; the slow pathways with a longer conduction time were ablated more posteriorly in the Koch's triangle than those with a shorter conduction time. The remaining seven patients (27%) had a residual slow pathway after delivery of radiofrequency energy at a single or different ablation sites. The patients in Group I had a longer tachycardia cycle length, poorer retrograde conduction properties and a higher incidence of multiple types of AVNRT

than those in Group II. CONCLUSIONS: Multiple anterograde AV node pathways are not rare in patients with AVNRT. However, not all of the anterograde slow pathways were involved in the initiation and maintenance of tachycardia. Radiofrequency catheter ablation was safe and effective in eliminating critical slow pathways to cure AVNRT.