Multiple Anterograde Atrioventricular Node Pathways in Patients With Atrioventricular Node Reentrant Tachycardia

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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. 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 clearly documented.

Methods: This study included 135 consecutive patients with AVNRT who underwent electrophysiologic study and radiofrequency ablation. Ten patients (9% with triple or more anterograde AV node pathways were designed as Group I (7 female, 3 males, men age 46 ± 3 years), and the other 125 patients (including 98 with and 27 without dual anterograde AV node pathways) were designed as Group II (82 female and 43 male; mean age 53 ± 7 years).

Results: Of the 8 patients with triple anterograde AV node pathways, AVNRT was initiated through the first slow pathway in 3 and through the second slow pathway in 2, and through the two slow pathways in 1. Of the 2 patients with quadruple anterograde AV node pathways, AVNRT was initiated through all three slow pathways in one. After radiofrequency catheter ablation, no patient had inducible AVNRT. Six patients in Group I (60%) had multiple anterograde slow pathways eliminated simultaneously at a single ablation site. Two patients (20%) had these slow pathways eliminated at different sites. The remaining two patients (20%) had a residual slow pathway after delivery of radiofrequency energy at a single or different ablation sites. Two patients (20%) had these slow pathways eliminated at different sites. The remaining two patients (20%) had a residual slow pathway after delivery of radiofrequency energy at a single or different ablation sites. The remaining four patients (40%) had all slow pathways eliminated at different sites. The remaining two patients (20%) had a residual slow pathway after delivery of radiofrequency energy at a single or different ablation sites. The remaining four patients (40%) had all slow pathways eliminated at different sites. The remaining two patients (20%) had a residual slow pathway after delivery of radiofrequency energy at a single or different ablation sites. The remaining four patients (40%) had all slow pathways eliminated at different sites. The remaining two patients (20%) had a residual slow pathway after delivery of radiofrequency energy at a single or different ablation sites. The remaining four patients (40%) had all slow pathways eliminated at different sites.

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 is safe and effective in eliminating critical slow pathways to cure AVNRT.