Short Koch triangle predict fast junctional rhythm during AVNRT ablation.

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Introduction: Fast junctional rhythm (JR) during slow pathway modification for atrioventricular nodal reentrant tachycardia (AVNRT) is a predictor of serious atrioventricular block. This study investigated the shape of the heart who is likely appearing fast JR during ablation with 3D electroanatomical mapping in AVNRT patients.

Methods: Participants were 129 consecutive patients with common AVNRT who received anatomical ablation to an antegrade slow pathway at our institution between August 2013 and March 2019. Successfully ablated sites with JR were evaluated in terms of distances and angles in the left and right anterior oblique views (LAO and RAO, respectively) to the proximal His bundle (His) site using 3D mapping. We divided JR by heart rate: JR1 ≥ 150 bpm and JR2 < 150 bpm.

Result: Average age was 61 ± 16 years; 41.1% of patients were male. The distance from the most proximal His to the JR1 and JR2 site was not significantly different (11.9 ± 4.4 vs. 10.7 ± 4.5 mm, p = 0.24). JR1 predominantly appeared in the patients with wider angle between most proximal His to CS ostium (JR1 131.6 ± 14.6° vs. JR2 124.7 ± 11.2°, p < 0.01). No significant differences in baseline clinical characteristics were observed between JR1 and JR2 in other parameters. There were no acute complications of AV block. AH time before and after ablation did not differ (85.1 ± 17.5 vs. 83.7 ± 16.4, p = 0.49).

Conclusion: The wider angle from the proximal His to the CS os in LAO seemed to one of the predictors of the appearance of fast JR. These results could help operators determine appropriate ablation sites so as to avoid serious complications of AV conduction.