Systematic Comparison of P-Wave Morphology of Intermediary Atrial Tachycardia during AF Ablation Procedure and Post-Ablation Recurrent Atrial Tachycardia

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Background: In longstanding, persistent AF, AF often converts into intermediary atrial tachycardia (iAT) before restoration of sinus rhythm during ablation procedure and recurrent ATs (rATs) are commonly observed during post-ablation follow-up. Whether iAT and rAT documented in the same patient are identical or not is, however, unknown.

Methods: This study included consecutive 48 patients (40 males, age: 66±8 years) in whom AF converted into an iAT during anatomical linear ablation and subsequently a rAT was documented during post-ablation follow-up. The P-wave polarity in 12-lead ECGs of iAT and rAT was evaluated in leads I, II, III, aVF, V1 and V6, and it was categorized into one of positive, negative, biphasic (positive/negative or negative/positive) and isoelectric. The P-wave matching score (0-6) was calculated by adding each one point when the P-wave polarity was identical between the ECGs of iAT and rAT in each ECG lead.

Results: Mean P-wave matching score was 5.6±0.9, and it was 6 in 40 (84%), 5 in 2 (4%), 4 in 2 (4%), and 3 in 4 (8%) patients.

Conclusions: In more than 80% of the patients with both documented iAT and rAT, P-wave morphology of iAT and rAT was quite similar. This suggested that complete abolition of iAT during AF ablation procedure would be mandatory in terms of reduction of AT recurrence during post-ablation follow-up.

Keywords: atrial fibrillation, ablation, atrial tachycardia