A case of orthodromic reciprocating tachycardia by an accessory pathway demonstrated intermittent conduction on the specific coupling intervals

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Introduction: We present a case of 42-year old man. He was referred to our hospital, undergoing catheter ablation for paroxysmal supraventricular tachycardia which was the cause of syncope.

Methods: Ventriculoatrial (VA) conduction by retrograde atrioventricular node pathway was obtained with programmed ventricular extra stimulation. On the other hand, VA conduction, on which earliest atrial activation site (EAS) was demonstrated at the portion of coronary sinus (CS) ostium, was intermittently detected. Clinical tachycardia was induced at V-A-V response by programmed atrial extra stimulation, and the tachycardia cycle length was 280ms. VA conduction on the tachycardia showed the same atrial activation sequence as intermittent VA conduction with ventricular stimulation, as mentioned above. It was impossible to perform entrainment from the right ventricle as a maneuver for differential diagnosis, because the tachycardia showed termination without atrial capture easily by ventricular overdrive pacing (VOP). Finally, the total pacing prematurity (TPP) obtained by VOP was less than 125ms with reproducibility, and the tachycardia was diagnosed as an orthodromic reciprocating tachycardia. A discrete high frequency electrogram between the atrial and ventricular components at the left posteroseptal portion was detected by trans-septal approach, using programmed ventricular extra stimulation to demonstrate intermittent VA conduction by the accessory pathway (AP). We applied radiofrequency energy to the portion.

Result: Follow-up was uneventful.

Conclusion: Regardless of intermittent conduction by the AP and instability of the tachycardia in this case, TPP was useful for differential diagnosis.