Left ventricle Slow Pathway Successful Ablation for Atrioventricular Nodal Re-entry Tachycardia after failed Right-sided Ablation

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Introduction: Radiofrequency ablation of atrioventricular nodal re-entry tachycardia (AVNRT) usually performed from the right ventricle side. In some cases, ablation was performed via LV side either antegrade or retrograde approached. We report a case of successful ablation of AVNRT retrogradely from left ventricle after failed ablation from right ventricle.

Methods: A 54-year-old lady who had history of recurrent supraventricular tachycardia (SVT) underwent SVT ablation at our centre. Three venous access via right femoral vein and one right jugular vein were punctured. Two quadripolar catheters were placed at the His and right ventricular apex (RVA) while non irrigated ablation 4mm tip 7F catheter at high right atria (HRA). Another decapolar catheter was advanced into coronary sinus (CS) via right jugular vein. The diagnosis of typical slow-fast AVNRT was made due to presence of sustained supraventricular tachycardia with tachycardia cycle length (TCL) of 320msec, A-H jump with echo, V-A-V pattern, post pacing interval (PPI) minus TCL more than 115msec and VA interval 30msec. Ablation catheter was used to map slow pathway potential area (Figure 1).

Result: Multiple radiofrequency ablation (RFA) delivered at 20-30W, 50-60ºC for 30s with accelerated junctional rhythm seen. The tachycardia still inducible despite multiple ablation. Remapping and ablation of slow potential at coronary sinus (CS) ostium also failed to SVT. We decided to do mapping and ablation from left ventricular side. Right femoral artery puncture with 7F sheath inserted. IV heparin 5000u bolus was given. Ablation catheter was advanced retrogradely to the LV septal at the position opposite the His catheter and slightly caudal (Figure 2). Slow pathway potential was identified. Multiple RFA were delivered at 40W, 50°C for 30 seconds and accelerated junctional rhythm were seen (Figure 3). Post ablation, SVT was not inducible with no A-H jump despite with aggressive atrial pacing and isoprenaline infusion.

Conclusion: Ablation of AVNRT can sometime be challenging. Most often, successful ablation from right side yielded high successful rate. However, LV side ablation for AVNRT should be considered alternatively in cases where failed ablation from right side as in this case.