Absolute Alcohol Ablation in Coronary Veins

Mark TK Tam  
Joseph YS Chan

Introduction: Ventricular arrhythmia originating from left ventricular summit are difficult to be treated with traditional endocardial or epicardial catheter ablation. We describe a case of ablation with absolute alcohol injected into coronary veins with good effect.

Methods: Case report

Result: A 53 year old male with history of non-ischemic dilated cardiomyopathy was noted to have monomorphic PVC possibly contributing to his poor ejection fraction of 18%. He agreed for electrophysiological study and ablation for his PVC. Electrophysiological study was performed with Carto electro-anatomical mapping system. Spontaneous monomorphic PVC with an inferior axis, transition at V3 and slurred upstroke, QS complex in lead I was recorded. The morphology suggests possible exit from left ventricular summit. Pace mapping with ablation catheter in RVOT and aortic cusps both did not match with the PVC morphology. Mapping at distal great cardiac vein showed good but not perfect pace map, local signal around 30 msec preceding PVC. Ablation with irrigation ablation catheter at this site fail to suppress the PVC. Detailed mapping with coronary wire shielded with a microcatheter (finecross catheter) showed excellent pacing mapping at a branch of coronary vein, with local unipolar signal preceding PVC by 40 msec suggesting a promising site for ablation. However, ablation catheter, with its large caliber, cannot reach this small venous branch. Decision was made for ablation with absolute alcohol. With a monorail 2.0mm balloon to occlude the vein to prevent spill over, 2.5mL of absolute alcohol was slowly injected into this venous branch. Slow run of idioventricular rhythm was resulted. After that PVCs were non-inducible. Post procedure echocardiogram confirmed absence of pericardial effusion.

Conclusion: Ablation with absolute alcohol in coronary veins is potential alternative approach for ventricular arrhythmia if endocardial approach fails.