

# An idiopathic VT originated from high septum of right ventricle with possible linkage in arrhythmia substrate with a junctional tachycardia

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**INTRODUCTION:** Idiopathic right ventricular tachycardia (VT) is frequently originated from the right ventricular outflow tract with mechanism of triggered activity. An idiopathic VT originated from high septal wall of right ventricle (RV) with possible linkage in arrhythmia substrate with a junctional tachycardia has not been reported.

**CASE REPORT:** A 25-year-old female experienced palpitation and dyspnea off and on for several years. VT was noted by 12-lead electrocardiogram. Cardiac electrophysiological study with 3D mapping (NavX) showed a RVVT (Cycle length = 587ms) originated from the high septum of right ventricle (RV) (Figure). The persistent VT cannot be terminated by RV pacing. The VT terminated and immediately shifted to a junctional tachycardia with similar cycle length when a 7Fr ablation catheter tip compressed over the earliest activation site. After further ablation over the earliest activation site of VT, no recurrent VT could be inducible again. The junctional tachycardia persisted and cannot be terminated by rapid atrial pacing. The earliest activation site of the junctional tachycardia is very close to the His bundle. Therefore, no further ablation for the junctional tachycardia was performed later. The symptoms dramatically improved after procedure.

**CONCLUSION:** an idiopathic high septum RVVT converting to a junctional tachycardia during ablation is a rare presentation. A possible link in arrhythmia substrate between the RVVT and junctional tachycardia was highly suspected in this patient.