A case of successful ablation of idiopathic nonsustained Ventricular Tachycardia originating from the Left Ventricular Summit through left ventricular outflow tract

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Introduction: Background: The summit of left ventricle (LV) is the most superior portion of the epicardial LV bounded by an arc from the left anterior descending coronary artery, superior to the first septal perforating branch to the left circumflex coronary artery. Some patients may not be able to ablate ventricular tachycardia through great cardiac vein (GCV) or the epicardium. A successful radiofrequency catheter ablation of a patient suffers from nonsustained LV summit ventricular tachycardia through left ventricular outflow tract (LVOT) was reported in this paper.

Methods: Methods: Sixty-four-years-old woman with a complaint of chest discomfort and palpitation. She presented to her local hospital with symptoms, and a 12-lead electrocardiogram (ECG) showed a nonsustained ventricular tachcardia (NSVT), wide QRS-complex tachycardia with left bundle branch block morphology and a right inferior axis in the frontal plane, preserved LV systolic function (EF: 51%), transition V2->V3, large R in V1, larger R-wave amplitude in III than in II lead and a deeper Q wave in aVL than in aVR lead.

Result: Result: During programmed procedure appeared couplet and bigeminy premature ventricular contractions (PVC). The earliest activation with low-amplitude potentials was identified at the Great Cardiac Vein (GCV) located in inaccessible area of LV summit and preceded the QRS onset by 33 ms. QRS morphology of pace mapping was similar original PVC. Unfortunately, this position had high impedance (200 Ω). In right ventricular outflow tract mapping during PVC, the earliest potential (13 ms preceding the onset of QRS complex) was recorded at the posteromedial septum of RVOT. (We continued mapping in left ventricular outflow tract), During LVOT mapping procedure, the earliest activation potential position that description of the fusion patterns between the left coronary cusp (LCC) and noncoronary cusp (NCC) preceded the QRS onset 15 ms. Coronary angiography was done to determine ablation catheter with coronary arteries. After the application of radiofrequency (RF) energies, the PVC was terminated during RF ablation at the site of the between LCC and NCC potential 15 msec preceding the onset of the QRS complex. The PVC was not recurred during following period.

Conclusion: Conclusions: This study revealed that the LV summit VT could be eliminated by a direct approach GCV branch running below the proximal left coronary arteries and a remote approach from the adjacent endocardial sites.