Electrophysiological characteristics of idiopathic premature ventricular contraction or ventricular tachycardia arising from right ventricular outflow tract

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Introduction: Ventricular arrhythmias arising from right ventricular outflow tract (RVOT) have different expression as premature ventricular contraction (PVC) or ventricular tachycardia (VT). However, its clinical characteristics are still unclear.

Methods: The study included consecutive patients who underwent catheter ablation (CA) for idiopathic RVOT-PVC/VT in our institution from 2014 to 2019. Eligible patients were divided into two groups in accordance with the presence of VT.

Result: Overall, 65 patients were examined. There were 47 patients with RVOT-PVC (without VT, group 1) and 18 patients with RVOT-VT (group 2). There was no significant difference in age, gender, CA success rates, and local activation time preceding the onset of QRS in successful CA site. In electrode I, group 1 showed negative polarity in 41 cases (87.2%), whereas group 2 showed positive polarity in 14 cases (77.8%). RVOT-PVC was eliminated by anteroseptal wall ablation in 39 patients (83.8%) in group 1, however RVOT-VT was terminated by posteroseptal wall ablation in 15 patients (83.3%) in group 2.

Conclusion: RVOT-PVC has been considered to have a good prognosis, however VT complication rate is significantly high when electrode I polarity is positive, which implies posteroseptal origin.