A Case of Epicardial RV-VT Eliminated by Endocardial Ablation

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A 66-year-old female had ECG similar to type 1-Brugada and VT showing LBBB + LAD. EPS and radiofrequency (RF) ablation were performed with NavX system. A 3D-electroanatomic voltage map on an endocardial RV geometry indicated that low amplitude potentials (less than 0.5 mV) existed in infero-basal and apical walls. Activation mapping during a VT induced by programmed RV stimulation was achieved using an irrigated 4-mm-tip ablation catheter, so that the VT was confirmed a focal pattern originating from within the infero-basal low voltage area. This earliest activation site during the VT had a QS pattern on a unipolar intracardiac electrogram of the catheter and preceded about 10 ms from onset of QRS wave. Initial irrigated catheter ablation was performed here on the condition of a 20-watt power or 40C temperature limit and a flow rate of 13 ml/min, only resulting in transient termination of the VT. However, the shift of the earliest site to mid-inferior area, showing a normal amplitude (more than 1.5 mV), was clarified by further activation mapping. Additionally, perfect pace-mapping was obtained from the site. Although the potential on a unipolar electrogram of this site depicted no QS pattern during the VT, ablation could terminate the VT and render its inducibility impossible. These findings may suggest that endocardial RF ablation could eliminate focal VT originating from epicardial RV.

Keywords: ventricular tachycardia, irrigated catheter ablation, electroanatomic mapping