A case of ablation to ventricular tachycardia in tetralogy of Fallot Repair with delayed potential as indicator

Takayuki Shimizu
Keijiro Nakamura
Hitoshi Anzai
Masato Nakamura

Introduction: A 43-year-old woman with tetralogy of Fallot was admitted to our institution because of sustained VT episodes. She was surgically corrected at the age of four with the standard radical technique that includes patch of the perimembranous ventricular septal defect, and extension of the right ventricular out flow (RVOT) with patch. The ECG during ongoing VT showed a complex with right bundle branch morphology and inferior axis deviation with a heart rate of 221 bpm, and atrioventricular dissociation.

Methods: The approach was performed from the right femoral vein, and intracardiac mapping was performed using an electrode catheter.

Result: Using the CARTO system, a voltage map of the right ventricle was created under sinus rhythm, and a voltage map showed a low potential region in the RVOT, which was considered as a surgical scar. In addition, the delayed potential was recorded along the edge of the patch in RVOT. The nonclinical unstable VT was induced after programmed stimulation. We delivered radiofrequency ablation in the delayed potential due to the nonclinical unstable VT. It was difficult to deliver ablation catheter to the delayed potential point for right ventricular enlargement with tetralogy of Fallot. The deep engagement of catheter sheath enabled to delivery ablation catheter. After complication of ablation, pacing waveform change in the outflow tract confirmed. The VT was not induced after programmed stimulation.

Conclusion: The patient remained symptom-free and no tachycardia episodes reoccurred during 6 month follow-up.