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Catheter ablation of frequent ventricular tachycardia after interventional left ventricular restoration with the revivent-transcatheter^{tm}-system *VT ablation after interventional LV restoration*

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Left ventricle (LV)-remodeling and development of LV-aneurysms after myocardial infarction (MI) lead to increased LV-volumes, reduced LV-ejection fraction (LVEF) and subsequent congestive heart failure (CHF). The Less Invasive Ventricular Enhancement (LIVE) technique using the Revivent-TCTM (trans catheter)-system (BioVentrix Inc.) is able to exclude LV-aneurysms and restore LV-volumes similar to SVR by performing an off-pump interventional procedure. However, VT may occur after LIVE technique. To the best of our knowledge we report on the first case of CA after LIVE based LV-restoration and subsequently development of frequent VT. A 77-year-old male with a history of CHF (NYHA class III-IV) and anterior LV-aneurysm after MI was subjected for LIVE based LV-restoration. No episode of VT or ventricular fibrillation (VF) was detected before the LIVE procedure. After informed consent a successful LIVE procedure utilizing the Revivent-TCTM-system was conducted. No periprocedural complications occurred. On the next day the patient developed sustained VT (cycle length: 420ms, right bundle branch block (RBBB), inferior axis) with subsequently induced cardiogenic shock. The patient was initially cardioverted via external defibrillator. The CA was performed 10 days after LV-restoration and was conducted under endotracheal intubation and intravenous anesthesia without additional LV-assist device. LV-mapping was conducted via a combined antegrade transseptal and retrograde transaortic approach utilizing a three-dimensional electroanatomical (EA) mapping system. During mapping two different VT-morphologies (VT1 and VT2) were easily induced via catheter manipulation. External cardioversion was performed twice to restore sinus rhythm due to unstable hemodynamic status during VT. Via antegrade approach 8 RF applications (total duration of 703s) were performed to generate a linear lesion across the slow conduction zone resulted in prolongation and termination of VT1. Afterwards VT2 (cycle length: 600ms, RBBB, superior axis) was reproducibly induced. The best pacemap (9/12) of VT2 was located at the antero-medial apex. Utilizing two RF applications via retrograde approach (total duration: 217s) VT2 was prolonged and terminated. The patient was discharged after 10 days and freedom of any symptoms and no evidence of VT-recurrence were observed. This case report is presenting one way to successfully treat patients with postprocedural frequent VT. However, clinical trials with sufficient patient numbers are needed to draw final conclusions.

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