Cardiac magnetic resonance–guided limited ablation of incessant ventricular tachycardia in thrombosed left ventricle

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An 81-year-old CRT-D patient with history of anterior myocardial infarction and aortocoronary bypass and aneurysmectomy surgery was admitted for sustained ventricular tachycardia (VT) despite amiodarone and betablocker. Delayed-enhancement cardiac magnetic resonance (DE-CMR) showed a dilated left ventricle with severe systolic dysfunction and apical anteroseptal transmural necrosis, with a detached aneurysmectomy patch and thrombus in its interior (panel a, inset). VT ablation was rejected. Mexiletine was added with adequate initial control. After 12 days, he was re-admitted for incessant slow VT at 105 bpm with morphology of inferoseptal-apical origin. CMR images were used for reconstruction of left ventricle and thrombosed cavity with the aneurysmectomy patch. Software-guided analysis of slow conduction channels was done [1]. Multiple channels were documented in the aneurysmectomy area. One of them was exiting towards the inferoseptal-apical region adjacent to aneurysmectomy, compatible with VT origin by ECG criteria. CMR images were merged into CARTO 3 system, using the ascending aorta as reference structure. This allowed to guide the mapping catheter to the area of interest without approaching the thrombosed area. An electroanatomical mapping limited to the area of interest was performed, with adequate precocity during VT at the inferoseptal-apical channel (panel a). Here, radiofrequency was applied. The VT terminated after 4.3 s (panel b), remaining non-inducible.

Reference

1. Andreu D, Penela D, Acosta J, Fernández-Armenta J, Perea RJ, Soto-Iglesias D, et al. Cardiac magnetic resonance-aided scar dechanneling: influence on acute and long-term outcomes. *Heart Rhythm*. 2017;14:1121–8.

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