Epicardial management of myocarditis-related ventricular tachycardia

Patrizio Mazzone, Dimitris Tsiachris, and Paolo Della Bella*

Arrhythmia Unit and Electrophysiology Laboratories, Department of Cardiology and Cardiothoracic Surgery, Ospedale San Raffaele, via Olgettina 60, Milan, Italy

* Corresponding author. Tel: +39 02 26436247, Fax: +39 02 26437326, Email: dellabella.paolo@hsr.it

A 56-year-old patient who experienced a first-time syncope and a sustained monomorphic ventricular tachycardia (VT), treated with DC-shock, was documented (Panel A). Echocardiography and cardiac catheterization were unremarkable. Cardiac magnetic resonance imaging (CMR) revealed the presence of a delayed focal enhancement of gadolinium in the epicardial layer of the lateral wall and a normal left ventricular systolic function (Panels B and C). The diagnosis of chronic myocarditis was indicated.

The patient refused implantation of a transvenous implantable cardioverter-defibrillator (ICD). On the basis of the presence of fast VT and the absence of a bradycardic pacing indication, an entirely subcutaneous ICD (Cameron Health, San Clemente, CA, USA) was implanted. After a 2-month period, the patient had two appropriate shocks for VT despite treatment with sotalol and was referred for VT ablation (Panel D).

The patient underwent bipolar and unipolar endocardial electroanatomical mapping with the CARTO-3 System (Biosense-Webster, Diamond Bar, CA, USA) and a 3.5-mm distal-tip irrigated ablation catheter (Navistar ThermoCool, Biosense-Webster, Inc.), which demonstrated the absence of the scar tissue area (Panel E). Epicardial mapping, obtained via a subxyphoid approach, did not also exhibit the scar area (voltage cut-off < 1.0 mV), although a late potentials area was detected in the basal-medium segment of the lateral wall in the colour-coded map of the activation delay (Panel F). The ablation catheter was placed on a late potentials area, taking into consideration the course of coronary vessels, and complete abolition was achieved on the basis of a subsequent remap (Panels G–H). The patient, first to be treated consecutively with S-ICD and epicardial ablation, is free of recurrent VT or ventricular ectopic activity after a 4-month period. Cardiac magnetic resonance appears to be more sensitive for fibrosis detection compared with electroanatomical mapping, taking into consideration the thresholds applied.

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