Termination of ventricular tachycardia with high-power ablation after endocardial entrainment of a non-endocardial circuit in a patient with left ventricular assist device

Ashkan Ehdaie*, Eugenio Cingolani, Sandeep Nair, Xunzhang Wang, Sumeet S. Chugh, and Michael Shehata

Smidt Heart Institute, Cedars-Sinai, Los Angeles, CA, USA

* Corresponding author. Tel: +1 310 423 1876; fax: +1 310 423 0127. E-mail address: ashkan.ehdaie@cshs.org

Published on behalf of the European Society of Cardiology. All rights reserved. © The Author(s) 2019. For permissions, please email: journals.permissions@oup.com.
Ablation was performed at the best endocardial entrainment sites titrating power to 50 W with irrigated 4 mm catheter (Flexability, Abbott, IL, USA) for a duration of 3 min. The use of high power and long duration ablation in this case was deemed necessary to achieve a deeper lesion from the relatively healthy endocardium to reach non-endocardial tissue in the setting of likely mid-myocardial or sub-epicardial VT circuit. Delayed tachycardia termination was observed and after further ablation VT was rendered non-inducible. Outside of one episode of faster pace-terminated VT the night of ablation, the patient remained arrhythmia-free off antiarrhythmic therapy for the duration of his hospitalization. Pathology after heart transplantation (2 months later) revealed a hypertrophied left ventricle with mid-myocardial scar and sizable endocardial ablation lesions with depth of up to 1 cm (Figure 1F, G).

This case demonstrates that the absence of endocardial signal precocity or low-voltage should not preclude an attempt at entrainment mapping of VT. In fact, if such a response is seen, it may indicate proximity to a non-endocardial circuit where high-power prolonged-duration ablation may be effective. Prolonged high-power ablation with open-irrigated cooling can facilitate deeper RF lesions but at the cost of increased risk of mechanical and thromboembolic complications. The extent of lesion formation and depth with high-power prolonged-ablation may not have been achieved with lower power and duration in this case.

**Conflict of interest:** none declared.

**References**

