Journal of Interventional Cardiac Electrophysiology (2019) 55:361
https://doi.org/10.1007/s10840-018-0485-1

CASE REPORTS

Demonstration of an adjacent conduction gaps-derived left atrial and pulmonary vein flutter by high-density mapping

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Received: 11 October 2018 / Accepted: 9 November 2018 / Published online: 17 November 2018

Keywords Left atrial and pulmonary vein flutter · High-density mapping · Pulmonary vein isolation · Conduction gap · Catheter ablation

A 66-year-old woman underwent catheter ablation of atrial tachycardia (AT) that occurred after pulmonary vein (PV) isolation and roof line ablation for persistent atrial fibrillation. High-density activation mapping showed activation propagating from the anterosuperior left atrium (LA) to the block line of the roof and through the interatrial septum to the posterior LA (Fig. 1). Further mapping unveiled residual right superior PV (RSPV) electrograms, where activation propagated from the posterosuperior LA to the RSPV through a first conduction gap (CG) and from the RSPV back to the anterosuperior LA through a second CG (Fig. 1). A single radiofrequency application at the first CG terminated the tachycardia, and additional radiofrequency applications at the second CG resulted in RSPV isolation. Thereafter, any AT was non-inducible.

LA–PV flutters are known to be one of the iatrogenic macroreentrant tachycardias associated with distant CGs on the line of electrical conduction block between the LA and PV. This is the first case reporting an LA–PV flutter illustrated by high-density mapping, demonstrating that even adjacent CGs on the PV isolation line could cause iatrogenic LA–PV flutters.

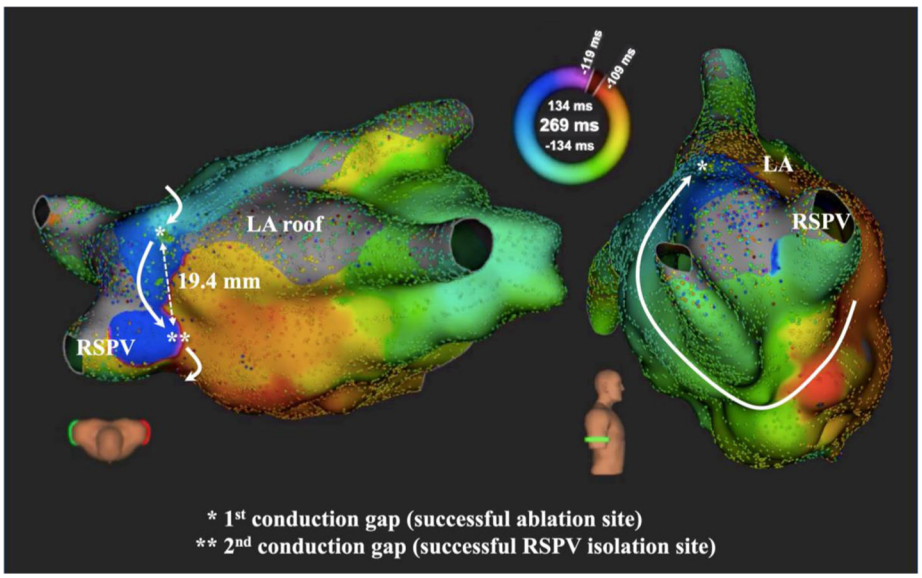

Fig. 1 Activation map exhibiting the left atrial and pulmonary vein flutter. LA, left atrium; RSPV, right superior pulmonary vein

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