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HIGH DENSITY MAPPING FOR GAP IDENTIFICATION AFTER PULMONARY VEIN ISOLATION

Poster Contributions
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Background: Pulmonary vein isolation (PVI) by wide area circumferential ablation (WACA) is an established treatment option for patients with atrial fibrillation (AF). However, reconnection of isolated pulmonary veins resulting in recurrence of AF is a frequent cause of reintervention.

Algorithm-based automatic acquisition and annotation of intracardiac signals has recently become available, facilitating fast acquisition of high-density electroanatomical maps.

We aimed to determine the potential of left atrial high-density mapping (HDM) to identify incomplete WACA lines after PVI.

Methods: WACA was performed with radiofrequency ablation using irrigated-tip catheters with force-sensing technology. After confirmation of PV isolation by demonstrating entrance- and exit block with a multipolar circular catheter, WACA lesions were assessed using HDM of the LA and PVs. After gap ablation, HD remapping was used to confirm WACA block.

Results: HDM (mean 1599 +/- 291 mapping points) was performed after PVI in 20 patients (mean age 63+/- 11 years, 60% male). WACA gaps were identified in 55% of all patients. Of those, a single gap was demonstrated in 55%, 2 gaps in 27% and 3 gaps in 18%. After gap ablation, remapping confirmed complete WACA block in all patients.

Conclusions: High-density LA mapping facilitates detection of gaps in WACA lines after PVI isolation and therefore might improve the effectiveness of AF ablation procedures.

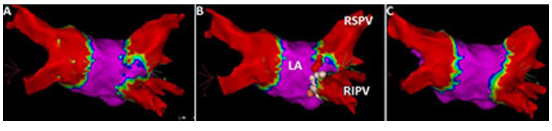

Figure 1. WACA gap (A), ablation (B), complete block after ablation (C)