

Very high-power short-duration temperature-controlled ablation versus conventional ablation-index guided power-controlled ablation for pulmonary vein isolation

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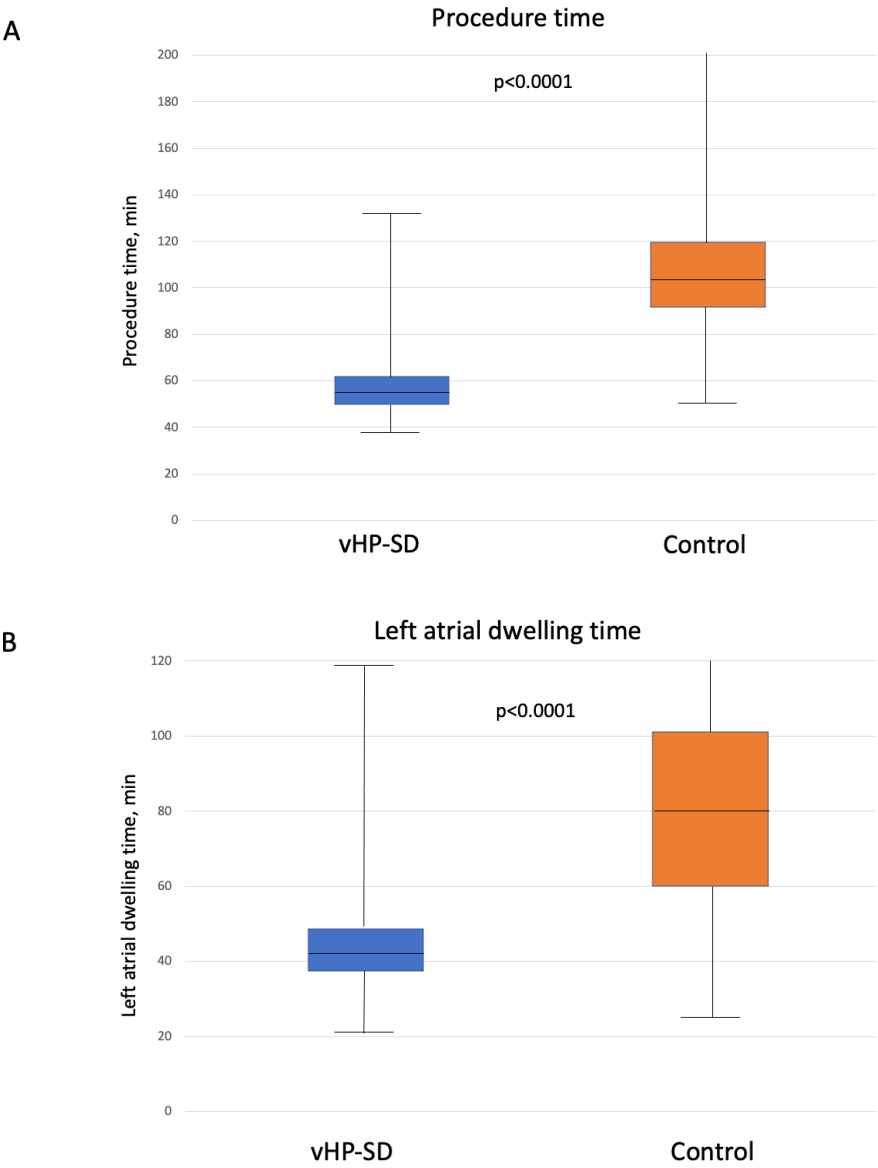
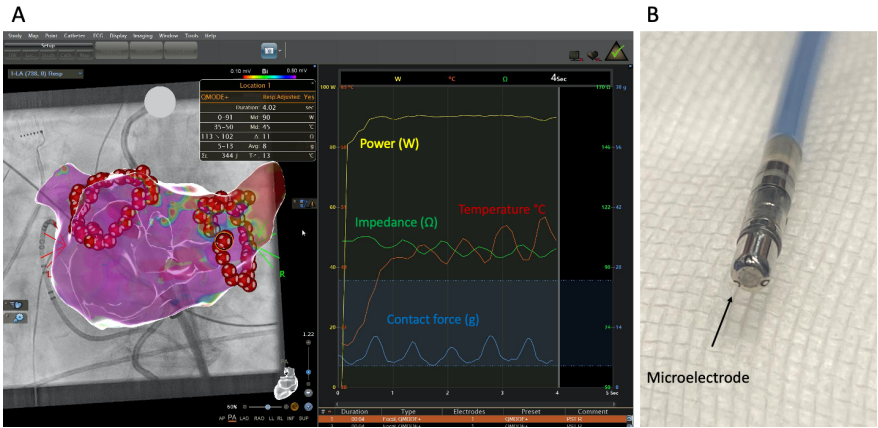
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Abstract

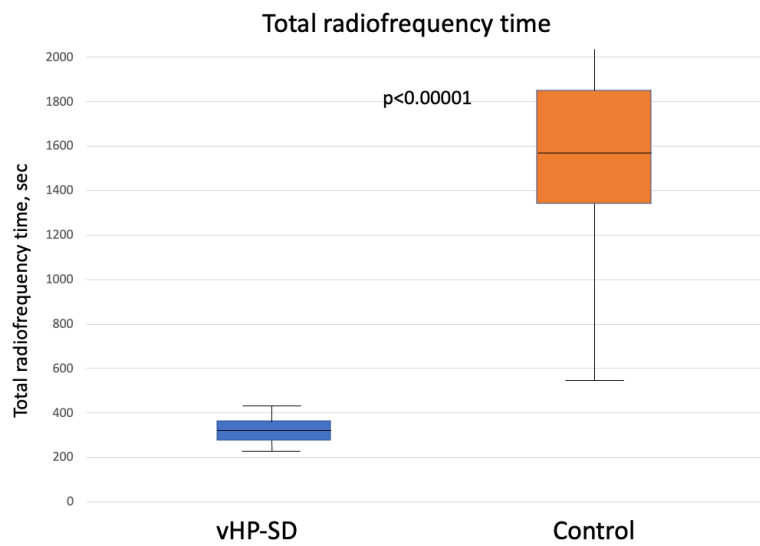
Background: Catheter ablation for atrial fibrillation (AF) treatment provides effective and durable pulmonary vein isolation (PVI) and is associated with encouraging clinical outcome. A novel CF sensing temperature-controlled radiofrequency (RF) ablation catheter allows for very high-power short-duration (vHP-SD, 90W/4 seconds) ablation aiming a potentially safer, more effective and faster ablation. We thought to evaluate preliminary safety and efficacy of vHP-SD ablation for PVI utilizing a novel vHP-SD catheter. The data was compared to conventional power-controlled ablation index (AI) guided PVI utilizing conventional contact force (CF) sensing catheters. Methods and Results: Fifty-six patients with paroxysmal or persistent AF were prospectively enrolled in this study. Twenty-eight consecutive patients underwent vHP-SD based PVI (vHP-SD group) and were compared to 28 consecutive patients treated with conventional CF-sensing catheters utilizing the AI (control group). All PVs were successfully isolated using vHP-SD. The median RF ablation time for vHP-SD was 338 (IQR 286, 367) seconds vs control 1580 (IQR 1350, 1848) seconds ($p < 0.0001$), the median procedure duration was vHP-SD 55 (IQR 48-60) minutes vs. control 105 (IQR 92-120) minutes ($p < 0.0001$). No differences in periprocedural complications were observed. Conclusions: This preliminary data of the novel vHP-SD ablation mode provides safe and effective PVI. Procedure duration and RF ablation time were substantially shorter in the vHP-SD group in comparison to the control group.

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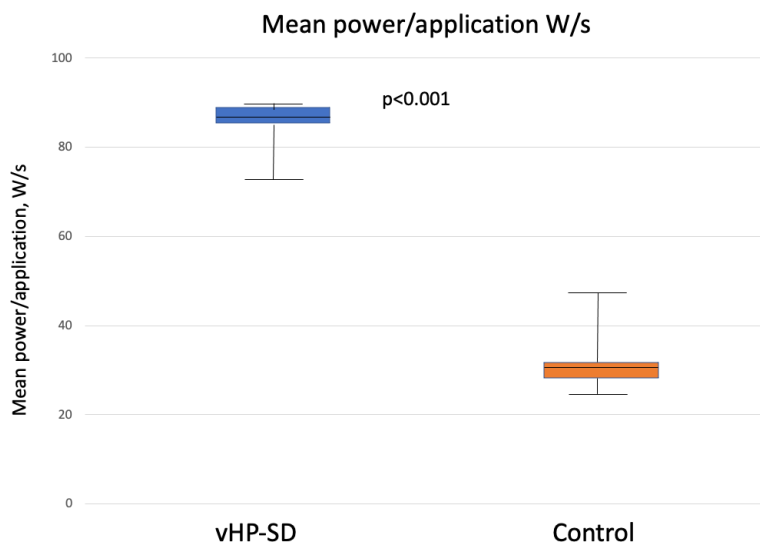
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