ACUTE CHANGE OF CARDIAC AUTONOMIC REGULATIONS AFTER THERMAL AND NON-THERMAL PULMONARY VEIN ABLATION
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Background: Pulmonary vein isolation (PVI) by thermal energy (radiofrequency energy or cryoenergy) results in collateral parasympathetic input into the sinus node (SAN) and AV node (AVN) when four different ablation strategies were used. Methods: A study enrolled 49 patients who underwent PVI in general anesthesia (age: 57 ± 13 years, 71% males). In 17 patients, point-by-point radiofrequency energy delivery by the irrigated-tip catheter was used for ablation while 7 patients were ablated using a second-generation cryoballoon catheter. In 7 patients, PEF energy was delivered using a single-shot Farawave catheter (Boston Scientific) while 18 patients were ablated using Spher9 lattice-tip catheter (Affera, Inc.); both subgroups with manufacturer-specific PEF settings. Before and after PVI, the responsiveness of the SAN and AVN was assessed by extracardiac vagal nerve stimulation (ECVS) via a diagnostic catheter in the right internal jugular vein. Five-second stimulation trains were delivered with a frequency of 50 Hz, pulse width of 0.05 ms, and output of 1 V/kg (<70V) both in sinus rhythm and during atrial pacing. Substantial reduction of response to ECVS was arbitrarily defined as a maximum induced pause of <1.5 seconds. Results: At baseline, physiological response to ECVS (long sinus arrest and/or AV block) was demonstrated. After PVI, a substantial reduction of SAN response was observed in 21/24 (88%) patients after thermal PVI and 7/25 (25%) patients after non-thermal PVI (P = 0.0001). Similarly, a substantial reduction of AVN response was observed in 21/24 (88%) patients after thermal PVI and 9/25 (36%) patients after non-thermal PVI (P = 0.0003). The Figure shows on the continuous scale the post-PVI pauses in sinus rhythm (maximum P-P interval) and atrial pacing (maximum R-R interval) induced by ECVS. Conclusion: Vagal responses of SAN and AVN are preserved in most AF patients after non-thermal PVI. This contrasts with the much stronger effect of thermal PVI. Whether this may influence the clinical outcome of AF ablation procedures remains to be investigated in future studies.

MARKED DISCREPANCY IN LEFT ATRIAL LATE GADOLINIUM ENHANCEMENT QUANTIFICATION BETWEEN TWO COMMONLY USED TECHNIQUES
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Background: Left atrial (LA) fibrosis, estimated by late gadolinium enhancement (LGE) on cardiac magnetic resonance imaging (CMR), is a predictor of recurrent atrial fibrillation (AF) following catheter ablation. The two prevailing techniques for identification of LA LGE at present are 1) image intensity ratio (IIR) method, normalising intensity of the atrial wall by mean value of the atrial blood pool, and 2) standard deviation (SD) method analysing signal intensity distribution of the LA wall. However, there is a paucity of data comparing these techniques and no consensus exists as to the optimal quantification tool for LA LGE. Objective: To evaluate the concordance in quantification of LA LGE between the IIR and SD techniques. Methods: Respiratory- and ECG-gated CMR scans were obtained using a 1.5 Tesla scanner, in ten ablation naïve subjects with persistent AF (PsAF). Scans were analysed using the open source CEMRG software (Kings College London, UK) and LA...