Presence of Low Voltage Area Predicts Atrial Fibrillation Inducibility with Atrial Burst Pacing following Pulmonary Vein Isolation

Shunsuke Kawai
Yasushi Mukai
Kazuhira Nagaoka
Kazuo Sakamoto
Shujiro Inoue
Daisuke Yakabe
Shota Ikeda
Akiko Chishaki
Hiroyuki Tsutsui

Introduction: Induction of atrial fibrillation (AF) by atrial burst pacing following completion of ablation procedure may reflect the presence of residual substrates in the atria that maintain AF. However, the relation between the inducibility and left atrial low voltage area (LVA) remains unknown.

Methods: Fifty-nine patients (65 yo, 43 males) with persistent AF who underwent pulmonary vein isolation (PVI)-based ablation were studied. All patients underwent left atrial voltage mapping during sinus rhythm and atrial burst pacing following the completion of PVI. Left atrial LVA and other covariates were validated regarding burst pacing positivity.

Result: AF was induced by burst pacing in 23 patients (39%). Univariate analysis revealed that past history of stroke, CHADS2 score and left atrial LVA significantly associated with the inducibility of AF. Multivariate analysis revealed that only LVA was associated with the inducibility (OR 1.5: per 10% increase; p=0.04).

Conclusion: Left atrial LVA is an independent predictor for the AF inducibility in patients with persistent AF undergone PVI.