Hot or Cold ? Feasibility, Safety and Outcome after Maze-like Radiofrequency guided versus Cryoballoon guided LAA Isolation

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Abstract

Backgrounds: Left atrial appendage (LAA) isolation (LAAI) has been described as an adjunctive ablation strategy for patients with recurrent atrial fibrillation (AF). Objectives: We compared the clinical impact of persistent LAAI durability between radiofrequency catheter (RF)-guided wide-area LAAI and cryoballoon (CB)-guided ostial LAAI. Methods: Consecutive patients who underwent RF- or CB-guided LAAI were retrospectively analyzed. RF-guided LAAI was performed by combining anterior, roof and mitral isthmus linear ablation. CB-guided LAAI was performed by LAA ostial ablation. After LAAI, patients underwent invasive re-mapping study. LAA closure was performed if persistent durability was confirmed. Procedural data, LAAI durability and ATa recurrence were assessed. Results: A total of 260 patients (RF:n=201, CB:n=59) undergoing LAAI were identified out of 7630 AF ablation procedures. Acute rate of procedural LAAI was significantly higher in CB group (RF: 82.6% vs. CB: 94.9%, P=0.02) and associated with a lower rate of pericardial effusion (RF: 7.5% vs. CB: 0%, P=0.03). Six-week durable LAAI was similar between two groups (RF: 78.1% vs. CB: 66.0%, P=0.103). One-year freedom from ATa recurrence was higher in the patients with durable LAAI after RF-guided wide-area LAAI irrespective of arrhythmia types (overall; RF:76.3% vs. CB:56.7%, P=0.0017, only AF; RF:81.3% vs. CB:57.5%, P=0.0013, respectively). Multivariate analysis revealed that RF-guided LAAI was a predictor of freedom from ATa recurrence (HR: 0.41, 95%CI: 0.221–0.766, P=0.0056). Conclusions: Acute LAAI can be more readily and safely achieved by CB-guided ostial ablation. In patients with confirmed LAAI, however, the freedom from ATa recurrence was higher after a RF-guided wide-area isolation.

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