Magnetically guided irrigated gold-tip catheter ablation of persistent atrial fibrillation - safety, feasibility and outcome in mid-term follow-up

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Monday, March 26, 2012, 9:30 a.m.-10:30 a.m.

Session Title: Arrhythmias: AF/SVT - Catheter and Surgical Ablation of Atrial Fibrillation
Abstract Category: 16. Arrhythmias: AF/SVT
Presentation Number: 1233-10

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Background: Magnetically guided irrigated ablation has been introduced for atrial fibrillation (AF) ablation. However, data on ablation of persistent AF is scarce and first generation platinum-iridium catheters were burdened by char formation at the catheter tip. Furthermore, energy transmission of these catheters may be suboptimal. Irrigated gold-tip catheters have been introduced to overcome these problems.

Methods: Antral pulmonary vein (PV) isolation (PVAI) was performed using a 5-mm irrigated gold-tip magnetic catheter. Power setting: 48°C maximum, 50 W, 15 s lesion duration, flow-rate: 30mL/min. The catheter tip was guided by a uniform magnetic field (0.08 T) and a motor drive. Left atrial maps were created using an impedance-based left atrial reconstruction and fused with a preprocedural CT or an intraprocedural rotational angiography based scan. Follow-up performed 3, 6, 12, 18 and 24 months after ablation included a clinical visit, a 12 lead ECG and a 7 day Holter ECG. All documented AF and atrial tachycardia episodes lasting >30 s were regarded as recurrences if recorded after a three month blanking period.

Results: Fifty-seven patients (42 male, 61.9±8.8 years) underwent PVAI for symptomatic, drug-refractory persistent AF. PVAI was performed successfully in all patients confirmed by entrance block. Procedure time (skin-to-skin) was 214±47 min (104 to 354 min); fluoroscopy time 31±21 minutes. Ablation-time was 4153±1350 seconds. No char or thrombus-formation was found at the catheter tip. One pericardial tamponade was observed. The patient immediately recovered after pericardiocentesis. Freedom from atrial tachyarrhythmias was achieved in 57.9% of the patients included in a follow-up of 11.6±4.2 month. There was a trend to a better outcome in patients without previous attempts of AF ablation (n=48) (60.4% vs. 44.4%, p=0.47).

Conclusions: Remote magnetic navigation for PVAI in persistent AF seems to be safe and feasible using an irrigated gold-tip catheter. Effectiveness of this novel technique can be confirmed by mid-term outcome.