

of distinct muscular bundles, which are responsible for the conduction of electrical activity. Based on this observation a maximum voltage-guided technique for ablation of atrial flutter has been proposed. In this study we assessed the feasibility of this approach with magnetic navigation and compare this with manual RF-ablation.

Methods: Between May 2007 and September 2008, 39 consecutive patients were divided into a magnet group (n=15) and a control group (n=24). Ablation was guided by the highest potentials on the CTI. In the control group, flutter ablation was being performed with the 8 mm tip Blazer EPT catheter (60 watt, 60 degrees, 60 seconds) while in the magnet group magnetic navigation was used to direct ablation with a 8 mm Navistar RMT catheter (60 watt, 60 degrees, 60 seconds). When we could not achieve bidirectional block using the magnet-guided catheter within 15 applications, patients were switched to an irrigated-tip manually guided catheter.

Results: The mean age of our patients was 58 ± 10 years [34-84 y] and 20% was female. There was a significant difference in the median number of applications needed to obtain bidirectional isthmus block: 15 in the magnet group versus 7 in the RF group ($p=0.01$). In 5 patients from the magnet group we had to switch to a manually guided irrigated-tip catheter approach. There was no difference in fluoroscopy time but procedural time was significant longer in the magnet group (150 ± 46 min) compared to the RF group (110 ± 53 min) ($p=0.04$).

Conclusions: The use of the maximum voltage technique for ablating the CTI with the use of a magnet navigation tools is less effective: more applications are needed and procedure time is longer. Hopefully improvement can be made with the irrigated-tip magnetically navigated catheter and/or adjustable magnetic force.

PO04-32

DOES CATHETER ABLATION CURE ATRIAL FIBRILLATION? SINGLE PROCEDURE OUTCOME OF DRUG REFRACTORY ATRIAL FIBRILLATION ABLATION: A SIX-YEAR MULTICENTER EXPERIENCE

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Introduction: Objectives. The aim of this study was to investigate if the one-year efficacy of atrial fibrillation (AF) catheter ablation persists over a long-term follow-up. Background. Up till now catheter ablation has been demonstrated to be effective in preventing AF recurrence in short and mid-term follow-up.

Methods: Between February 2001 and October 2003, 229 patients affected by drug-refractory paroxysmal or persistent AF underwent a single radiofrequency catheter ablation (anatomical approach in 146 patients; electrophysiologically-guided approach in 83 patients). Among them 177 (78%) patients (mean age 59.1 ± 10.5 years, 57.6% with paroxysmal AF) were free of any atrial arrhythmias recurrence after 12 months. This group was further followed-up for at least 24 months, by means of ECG and Holter monitoring, scheduled every six months in each patient.

Results: After a mean follow-up of 49.7 ± 13.3 months (range 36-83 months), 58.2% patients resulted free of any atrial arrhythmia recurrence (39.5% without antiarrhythmic drugs). The actuarial atrial arrhythmias recurrence rate was 13.0% at two years, 21.8% at three years, 35.0% at four years, 46.8% at

five years, and 54.6% at six years. Electrophysiologically-guided PV isolation and anatomical PV ablation proved to be similarly efficacious. Atrial arrhythmia-free survival resulted similar in patients with paroxysmal or persistent AF, and in patients with or without antiarrhythmic drugs. None of clinical characteristics predicted very late recurrence.

Conclusions: Also patients in which catheter ablation prevents AF recurrence for one year should not be considered "cured", since more than 40% of them still will have AF recurrence in the future.

PO04-33

LONGTERM RESULTS OF MULTI-ELECTRODE PULMONARY VEIN ISOLATION WITH BIPOLAR/UNIPOLAR RF ENERGY FOR PAROXYSMAL AF

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Introduction: PV isolation for AF has varying reported success rates with complex and lengthy procedures. We evaluated the long term efficacy of a novel ringshaped ablation catheter using alternating unipolar and bipolar RF energy

Methods: Consecutive pts that were referred for ablation of paroxysmal or persistent AF were included after MRI and TEE showed no significant structural disease. A circular decapolar catheter, 3 mm electrodes and spacing, 25 mm diameter (PVAC, Ablation Frontiers Inc) was used for mapping and ablation in each PV antrum. Each application lasted 60 sec at 60°C with a 4:1 ratio of duty-cycled bipolar to unipolar RF energy at a maximum power of 8W until PV isolation was achieved in all veins. Follow-up was performed at 3, 6, and 12 mo with ECG and 7-day Holter recording. Symptomatic pts received additional event recording. In selected pts MRI was repeated after 6 mo. Complications including stroke, bleeding, tamponade, hematoma, and phrenic nerve damage were assessed.

Results: Since March 2007, 142 pts (age 59 ± 11 , 27 female) underwent a Lasso or PVAC verified PV isolation, for all but 1 PV that could not be reached. Procedure and fluoroscopy time decreased from 95 ± 26 to 74 ± 21 min and 19 ± 9 to 15 ± 7 min from the first to the last 50 pts. PVAC applications decreased from 29 ± 7 to 25 ± 7 min. Longterm follow-up beyond 12 mo could be performed in the first 41 pts. Seventeen pts were using drugs, and in 13 pts (31%) AF recurrence was documented with either ECG, Holter, or event recorder. One failure was the pt where 1 PV was not isolated. In 4 of 13 pts recurrence was due to renewed persistent AF requiring cardioversion. After cardioversion 2 of these pts became asymptomatic again with no new recurrence, while 2 others had a second ablation procedure. A 7-day Holter at 12 mo showed absence of AF in 26/33 pts (79%). In 2 pts a second procedure was performed, showing reconnection of 1-4 PVs. No late complications were observed. MRI follow-up or angiography during a second procedure showed no evidence for PV stenosis.

Conclusions: PV isolation with PVAC ablation is feasible, efficient, and safe. Longterm FU shows 79% freedom of LA arrhythmia for paroxysmal AF.