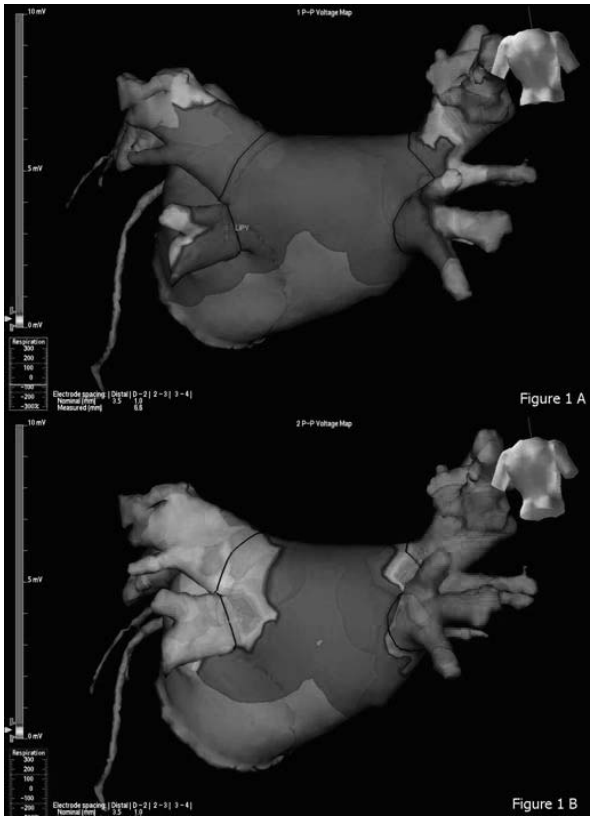
PO01-42

NOVEL CIRCULAR MULTIELECTRODE ABLATION CATHETER FOR ATRIAL FIBRILLATION ABLATION: ASSESSMENT OF THE LEVEL OF PULMONARY VENOUS ISOLATION BY VOLTAGE MAPPING

Santi Raffa, MD, Anett Grosse, MD, Michele Brunelli, MD, François Regoli, MD, PhD and J. Christoph Geller, MD. Zentralklinik, Bad Berka, Germany

Introduction: Novel ablation tools have been recently introduced in order to allow faster pulmonary vein isolation (PVI). The level of PVI defined through detailed voltage mapping is crucial both for efficacy and to avoid complications. Aim of the study was to assess, in pts with paroxysmal atrial fibrillation (PAF) undergoing ablation, the level of PVI achieved with a novel low energy phased radiofrequency circular multielectrode ablation catheter (Pulmonary Vein Ablation Catheter [PVAC], Ablation Frontiers Inc, USA).
Methods: In a selected group of pts referred for catheter ablation of PAF, detailed sinus rhythm voltage maps before and after PVI were obtained using an electro-anatomic mapping system and were projected on a 3-D CT-derived reconstruction of the left atrium (LA).
Results: The population consisted of 8 pts (mean age 56 ± 7 yrs, 50% female, LA diameter 39 ± 6 mm). Total number of PVs ostia was 28 (a common PV ostium was present in 4 pts). Before PVI (Figure 1A), the voltage maps showed normal potentials (>0.5 mV) in the body of the LA and at the level of the PV ostia with a gradual decrease of voltage inside the PVs. All PVs were successfully isolated with the PVAC catheter. After ablation, the voltage map showed an extensive zone of potential abatement that included the ostium of each PV in all pts (Figure 1B).
Conclusions: Three dimensional voltage mapping using image integration of the CT-reconstructed LA shows that the novel PVAC system allows PVI at the level of the atrial aspect of the PV ostia.



PO01-43

MAJOR FINDINGS AFTER REMOTE CONTROLLED MAGNETIC PULMONARY VEIN ISOLATION

Buelent Koektuerk, MD, Melanie Konstantinidou, MD, Erik Wissner, MD, Boris Schmidt, MD, Thomas Zerm, MD, Roland Tilz, MD, Andreas Metzner, MD, Kiyoshi Otomo, MD, Feifan Ouyang, MD, Karl-Heinz Kuck, MD and Julian KR Chun, MD. Hanseatic Heart Center, Hamburg, Germany

Introduction: The magnetic navigation system (MNS) Niobe II (Stereotaxis, St. Louis) enables remote controlled (RC) pulmonary vein isolation (PVI) in patients (pts) with atrial fibrillation (AF). Findings in pts with AF recurrence (AFR) after RC PVI are unkown.
Methods: The novel soft magnetic 3.5 mm irrigated tip catheter (3 magnets, Thermocool, Biosense Webster, USA) was used in conjunction with the Cardiodrive and the MNS (Stereotaxis, St. Louis) for complete RC LA mapping (CARTO RMT, Biosense Webster) and deployment of wide circumferential radiofrequencey current (RFC) lesions (CCL, 30-40W, max. 43°C, 110s, 17-30 ml/min) encircling the ipsilateral PVs. In case of AFR a redo ablation procedure (RAP) (conventional mapping and irrigated RFC ablation) was recommended.
Results: A total of 28 consecutive patients (pts) (22 males, mean age: 61 ± 7 years, LA size: 45 ± 5 mm, 21 paroxysmal AF, 7 persistent AF) underwent RC magnetic PVI. 18/28 pts (64.3%) were free of AF episodes during a median follow up of 334 days (range: 250-369). 10/28 pts (35.7%) had an AFR: AAD controlled AF in 2 pts refusing a RAP, in 8 pts a RAP was performed. In 2/8 pts (both persistent AF) all PVs were isolated and complex fractionated atrial electrogram (CFAE) ablation was performed leading to AF termination to sinus rhythm. In all remaining 6 pts recovered PV conduction was present: 7 gaps at the septal PVs (3 antero-inferior,1 antero-superior,1 postero-superior,2 postero-inferior) and 2 gaps at the lateral PVs (2 mid-anterior), respectively. No acute procedural complications occurred, however 1 NSTEMI (day 7 after PVI), 1 TIA (day 14 after PVI) and 1 asymptomatic RIPV stenosis was observed. Minor tip charring on the ablation catheter was detected in 16/28 patients (57%).
Conclusions: Single procedure success rates of magnetic PVI are in line with manual AF ablation data. AF recurrence is associated with recovered PV conduction.

PO01-44

CATHETER ABLATION OF ATYPICAL LEFT ATRIAL FLUTTERS IN PATIENTS WITH PROSTHETIC MITRAL VALVE: SAFETY, ACUTE SUCCESS AND LONG TERM OUTCOME

Luigi Di Biase, MD, Gianmario Spadacini, MD, Paolo Moretti, MD and Massimo Tritto, MD. Texas Cardiac Arrhythmia Institute at St. David's Medical Center and University of Texas, Austin, TX, EP Laboratory, Istituto Clinico Humanitas Mater Domini, Castellanza (VA) - I, Castellanza, Italy, EP Laboratory, Istituto Clinico Humanitas Mater Domini, Castellanza (VA) - I, Castellamza, Italy

Introduction: A few data are known regarding the safety and the success rate of radiofrequency catheter ablation (RFCA) of atypical left atrial flutter (AAFl) in patients with prostethic mitral valve.
Methods: 15 pts (8 f, mean age: 59±11 yrs) with AAFl underwent RFCA. Activation mapping and pacing maneuvers (reset/entrainment) were utilized to identify the arrhythmia mechanism and AAFl critical isthmus(es). RFCA was performed with an open irrigation catheter, and was aimed to obtain AAFl termination and