Introduction: Atrial fibrillation (AF) is common in hypertrophic cardiomyopathy (HCM) and is generally associated with a significant deterioration of clinical status. Ablation has become an established therapy for symptomatic AF. However, data about the long-term outcome of AF ablation in HCM is limited. In our study, we analyzed the long-term outcome of AF ablation in patients with HCM.

Methods and results: Twenty-three patients (age 65.9 ± 9.7 years, 14 (65.2 %) male) with HCM undergoing AF ablation for symptomatic AF between October 2008 and November 2016 were included in our study. Recurrence of AF was defined by typical symptoms and recurrences as documented by Holter ECG or a previously implanted device with continuous rhythm monitoring. Paroxysmal AF was present in 9 (39.1 %) and persistent AF in 14 (60.9 %) patients. The mean diameter of the left atrium (LA) was 55.1 ± 8.8 mm and the mean septal width was 21.2 ± 3.4 mm. Eight patients had a previously implanted cardioverter defibrillator, 3 patients had a cardiac pacemaker. A total of 1.8 ± 0.9 ablation procedures were performed. After a follow-up of 49.3 ± 27.4 months, 7 (30.4 %) patients were free of any recurrences and 5 (21.4 %) patients showed minor recurrences (< 5 minutes) associated with a significant improvement of symptoms (EHRA I-II in all 5 patients). The success rate for paroxysmal and persistent AF was 66.6 % and 42.8 % respectively (p < 0.001).

Conclusion: Long-term freedom or a significant reduction of AF is possible using ablation for symptomatic AF in HCM patients. Paroxysmal AF and a smaller LA diameter are favorable for a successful ablation.

**P845**

Benefits of concurrent cavotricuspid isthmus ablation after totally thoracoscopic ablation for persistent atrial fibrillation

HB. Gwag; JK. Hwang; DS. Jeong; SJ. Park; JS. Kim; KM. Park; YK. On

Samsung Medical Center, Cardiology, Seoul, Korea Republic of

Background: Unlike in catheter ablation, little is known about the benefits of cavotricuspid isthmus (CTI) ablation in totally thoracoscopic ablation (TTA) of atrial fibrillation (AF). This study aimed to investigate the incidence of recurrent atrial tachyarrhythmia (ATa) according to concurrent CTI ablation after TTA in persistent AF patients.

Methods and results: Among consecutive 208 patients who underwent TTA for persistent AF in our center from February 2012 to January 2016, a total of 63 patients with CTI ablation and 91 patients without CTI ablation were included in the final analysis. CTI ablation was performed in patients with long-standing AF or who had had atrial flutter episodes during the admission period. There was no difference in baseline characteristics between the CTI ablation and non-CTI ablation groups, except for more male patients included in the CTI ablation group. During a median follow-up duration of 29.6 months, the CTI ablation group showed significantly higher LA diameter (p = 0.023) and a smaller LA diameter was a favorable ablation (p = 0.003).

Conclusion: CTI ablation group patients showed better survival rate free from recurrent ATa compared to non-CTI ablation group patients. Concurrent CTI ablation may reduce recurrent ATa after TTA in patients with documented AFL or long-standing AF.

**P846**

Characteristics and outcomes of recurrent atrial tachyarrhythmia after totally thoracoscopic ablation for persistent atrial fibrillation

HB. Gwag; DS. Jeong; JK. Hwang; KI. Chun; SJ. Park; YK. On; JS. Kim; KM. Park

Samsung Medical Center, Cardiology, Seoul, Korea Republic of; Kangnam Sacred Heart Hospital, Seoul, Korea Republic of

Background: Recurrent tachyarrhythmia (ATa) is a challenge in all ablation procedures for atrial fibrillation (AF). However, data on ATa after totally thoracoscopic ablation (TTA) is lacking. This study aimed to investigate the mechanisms and outcomes of recurrent ATa after TTA.

Methods and results: We selected patients from a retrospective registry that included patients who underwent TTA for persistent AF. Eligible patients for the present study were those who underwent electrophysiology study and catherer-based radiofrequency ablation (RFA) at least 3 months after TTA for symptomatic recurrent ATa that was refractory to antiarrhythmic drugs and/or cardioversion. Follow-up outcomes included recurrent ATa after first or repeated RFA. A total of 22 patients were investigated. Half patients showed AF as a form of recurrent ATa. Non-PV (pulmonary vein)-related mechanisms of recurrent ATa were noted in half of patients. PV gaps showed a characteristic distribution: most gaps in right PVs were located at the posterior ridge (71.4 %) with the posterior ridge of left PVS saved in all patients. Post-RFA recurrence rate of ATa was 27.3 % during a median follow-up of 9.1 months, with all recurrences except for one occurring within 3 months after first RFA.

Conclusions: During a median 17.8 months after TTA, 24 patients (14.0 %) developed symptomatic recurrent ATa. Catheter-based ablation of recurrent arrhythmias may be effective, but challenging.

**P847**

Comparison of driver location by simultaneous body-surface and endocardial basket mapping of human atrial fibrillation

M. Rodrigo; AM. Climent; I. Hernandez-Romero; M. Alhusseini; CAB Kowalewski; F. Fernandez-Aviles; MS. Guillem; SM. Narayan; F. Alfonzo

Polytechnic University of Valencia, ITACA Institute, Valencia, Spain; Cardiovascular Department, Palo Alto, United States of America

Background: Isolation of atrial fibrillation (AF) drivers has been proven as an effective therapy in patients with drug refractory AF. AF drivers can be identified by different mapping techniques involving intracardiac basket catheters or non-invasive recordings (electrocardiographic imaging - ECGI).

Purpose: This study evaluates the correlation between the driver location estimation from endocardial versus non-invasive recordings using two analysis techniques: Dominant Frequency (DF) and reentrant pattern identification.

Methods: Intracardiac electrograms of 15 AF patients (66 ± 12 years, 26 % men, 47 % persistent AF) were recorded with one 64-pole basket catheter in each atrium simultaneously to 57-lead body surface recordings. Atrial and torso anatomy were reconstructed by using segmented magnetic resonance images. Activation phase mapping algorithm (FIRM) was used to detect endocardial rotational sources (local sources excluded) and Dominant Frequency (DF) method by spectral analysis was used to identify the endocardial activated regions. The ECGI signals were reconstructed by using zero-order Tikhonov regularization and non-invasive identification of atrial sources was carried out by estimation of the highest DF sites.

Results: Endocardial DF analysis in 4.5 ± 5.8 four-second segment/patient showed local maximum DF of 5.1 ± 1.1 Hz that stepped down to 3.7 ± 0.4 Hz in remaining atrial sites (p < 0.01). Stable rotational activity in AF was seen endocardially in 9/15 patients by FIRM. On 3D electroanatomic maps, the site of maximum DF overlay the site of AF rotational activity in 70 % cases. The area of highest DF regions (< 0.5 Hz from the fastest DF) were considerably wider (12.5 ± 7.0 % of the analyzed atrium) than the corresponding FIRM sources (4.3 ± 2.3 %, p < 0.01). Non-invasive DF analysis obtained by ECGI revealed a similar maximum DF than catheter measurements (5.5 ± 1.8 Hz, p = NS versus endocardial). Sites of maximal non-invasive DF in AF overlay (a) sites

Abstract P845 Figure. Follow-up of patients with recurrent ATa

Abstract P846 Figure. Survival rate free from recurrent ATa