Purpose: To estimate predictive power of nonlinear dynamic methods in terms of tachyarrhythmia recurrence in patients (pts) who underwent radiofrequency ablation (RFA) of typical atrial flutter (afl).

Materials and Methods: Twenty-one paroxysmal typical afl pts (4 women), 43.0±10.6 years of age, were included in the study. Arrhythmia duration was 6.3±5.4 years. Seventeen (81%) were still out of arrhythmia at a midterm follow-up. The quantitative characteristics of chaos we used were the following: parameters of informational dimension, fractal dimension (DF) and Lapunov’s parameters.

Results: 24 hours after RFA DF value was significantly lower in pts with recurrences of all compared with post-RFA tachyarrhythmia recurrence-free pts (2.23±0.16 vs. 2.66±0.14, p <0.05). There were no significant differences of standard HRV measurements, informational dimension and Lapunov’s parameter between the groups.

Conclusion: Nonlinear dynamic methods seem to be superior to HRV measurements in predicting arrhythmia recurrence in post-RFA typical atrial flutter patients.

P.1.11 INFLUENCE OF FLUTTER ABLATION USING NONCONTACT MAPPING IN ANEURISMAL ATRIUM ON EXERCISE CAPACITY
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Introduction: The aim of this study was to assess whether ablation of typical atrial flutter in patients with right aneurysmal dilated atrium and chronic heart failure affect quality of life and changes in clinical status defined by NYHA class, ejection fraction and changes in heart failure signs.

Methods and Results: In 11 consecutive patients (mean age 61 ± 13 years, 1 woman) with aneurysmal atrium, moderate (NYHA class II-III) symptoms of heart failure, ejection fraction <40% (28 ± 8%), LV end-diastolic diameter >60mm (66 ± 6nm) typical atrial flutter ablation was performed using noncontact mapping with the ensite 3000 System. All patients remained free of atrial flutter with an average follow-up for 12 month. Significant correlation was found by restoring sinus rhythm in aneurysmal dilated atrium with NYHA class and exercise time.

Conclusions: Favorable results with flutter ablation in aneurysmal atrium were seen in terms of in increase in ventricular ejection fraction, increase in exercise tolerance, improve NYHA functional classification.

P.1.12 WAVEFRONT AND AV NODAL VARIABILITY IN ATYPICAL ATRIAL FLUTTER
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Objectives: We set out to separate atypical from typical atrial flutter (AFL) by analyzing subtle variability in atrial wavefronts and AV nodal conduction from ECG and intracardiac analysis.

Methods and Results: In 42 patients undergoing AFL ablation (21 typical, 21 atypical), we filtered ECG atrial waveforms via sliding-correlation of F-wave templates to their ecgs over time. Waveforms were spatially variable if ECG loops in XY (V5/avf), YZ (avf/V1) and XZ (V5/V1) planes failed to exceed our validated threshold (>1.3). Compared to typical AFL, atypical AFL showed greater wavefront variability (21/21 vs 1/21 cases; p<0.001), greater CL standard deviation (6.98±7.02 ms vs 3.10±1.62 ms; p=0.023), AV conduction that was less likely to be an integer multiple of AFL cycle length (10/21 vs 19/21; p=0.033), and greater AV variability (155±79 vs 61±25 ms; p = 0.015) for a given cycle length.

Conclusions: Atypical AFL shows wider variations in AV conduction and AH interval than typical AFL, that likely reflects subtly greater wavefront variability. This may have implications for ablation and may help explain transitions to fibrillation.

P.1.13 NONCONTACT MAPPING IN ASSESSMENT OF POSTINCISIONAL ATRIAL TACHYCARDIA RADIOFREQUENCY ABLATION
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Introduction: Noncontact mapping with the ensite 3000 System was used to guide ablation of Postincisional intraatrial tachycardia. The purpose of this study was to report anatomy particularities and arrhythmia mechanism using noncontact mapping.

Methods and Results: In three patients (age 32 ± 10 years; 3 women) with postincisional tachycardia after correction of atrial septal defect, radiofrequency catheter ablation was performed using noncontact mapping. We created three-dimensional electroanatomical map of the right atrium during the tachycardia. Electrophysiological data were collected. We observed one area electrical inactive in right atrial atrium corresponding to the anatomical scar from surgical atriotomy in all patients, the reentrant circuit between the lower border of atriotomy and crista terminals close to the inferior vena cava in one patient and the tachycardia circuit around the atriotomy scar in two patients. The radiofrequency applications (8 ± 3) guided by the noncontact mapping terminated the tachycardia.

Conclusions: Noncontact mapping in our study proved to be an effective and safe method for radiofrequency ablation of postincisional atrial tachycardia.

P.1.14 ATRIAL REMODELLING IN PATIENTS WITH ATRIAL FIBRILLATION
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Purpose: to identify the most significant predictors of atrial fibrillation (AF) development and recurrence, and establish the prognostic factors for sinus rhythm (SR) restoration in patients (pts) with chronic AF after surgical repair of mitral valve (MV) pathology.

Materials and Methods: 124 patients with rheumatic MV anomalies, coronary artery disease, arterial hypertension, 65 with paroxysmal AF and 59 with chronic AF, were enrolled in our study. All patients underwent surgical repair of main pathology or electrical cardiovascular (in 100 cases). In 1% of cases with MV prosthesis left atrial (LA) application was performed. Along with traditional noninvasive diagnostic methods, computer tomography of LA/ pulmonary veins and histological investigation of LA appendage myocardium were used.

Results: Most powerful predictors of atrial remodeling were P-wave duration and dispersion for paroxysmal AF and Doppler flow velocity in LA appendage for chronic AF. LA application during MV replacement in pts with preserved LA contractile function increased probability of postoperative SR restoration.

P.1.15 INCIDENCE OF ATRIAL FIBRILLATION IN AGONISTIC ATHLETES WITH PALPITATIONS OF UNKNOWN ORIGIN
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Vigorous physical exertion may be correlated to a greater incidence of atrial fibrillation (AF). Aim of the study: to evaluate the incidence of AF in agonistic athletes with palpitations of unknown origin.

Methods: We evaluated 37 athletes (27 m, 28 ± 12 yrs) with palpitations of unknown origin. We performed ECG to exclude ventricular pre-excitation, echocardiography to exclude structural heart disease and transesophageal electrophysiological study (TEES) to evaluate the induction of arrhythmias.


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