leads macaro-Parungao in modification.E. A. Ozola for registration and analysis of electric heart action. ATES MEDICA (Italy) computer system was used for registration, viewing and the analysis of the vector-electrocardiogram (VECG). After registration of biopotentials of heart we looked through the correction projections of integral electric vector of heart to axes X, Y, Z. Then the most informative cardiac cycle was chosen and processed by the original program in Mathcad 7. As a result of researches we received VEGC, including animated, that reflects the character of the infringements of diffusion of excitation in myocardium of ventriculart at various RAP localization.

Interpretation of our results was realized in accordance with the dipoles theory of cardiac electrogenesis and the concept of Grant-Penaloz-Tranchesi. All accessory pathways were divided into three groups in accordance with the results of RFA: 7 patients with RPA; 3 – left posteroseptal accessory pathways, 4 – right inferior accessory pathways, 4 – right free-wall in the inferior site.

We have established that 3D-VEGC is able to find localization accessory pathways in the topographical difficult posteroseptal area before RFA. Coincidence of zones of localization on 3D-VEGC with results of RFA has made 92.8%.

Thus, 3D - VEGC is a sensitive method for localization RAP within the limits of one anatomic zone of localization. In some cases 3D – VEGC is only sensitive noninvasive method of localization accessory pathways in the posteroseptal area.

**P.1.6** BODY SURFACE POTENTIAL MAPPING IN CHILDREN WITH WOLF-PARKINSON-WHITE SYNDROME BEFORE AND AFTER RADIOFREQUENCY ABLATION

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Use of body surface potential mapping (BSPM) in adult patients with Wolf-Parkinson-White syndrome (WPW) before and after radiofrequency ablation (RFA) of anomalous pathway (AP) is well known.

The aim: to evaluate the diagnostic ability of the BSMTP in children with WPW.

Methods: BSMTP was carried out in 23 children with WPW (age 14.1±2.6; 12 boys, 11 girls) before and after RFA. Cardiac System (Czech Republic) with ECG registration in 80 unipolar leads on the thorax surface, 12 standard and 3 orthogonal leads was used for BSMTP. We analyzed isopotential, isointegral and depolarization maps.

Results: initial BSMTP with QRS isopotential maps analyzed were turned to account for the noninvasive localization of AP. 48% of patients had midseptal (2) or paraseptal (9) AP that are difficult to identify by non invasive methods. The locations obtained by BSMTP were compatible with invasive locations with 83.3% accuracy. After RFA of AP, DI= -2 zone – the negative zone on STT departure integral maps was used as a noninvasive indicator of local electrical repolarization changes. The last were revealed in the projections of corresponding RFA zones with negative values of DI (-3.1±1.2), the average volume of negative DI region was 9.5%. BSMTP was carried out in 4 pts 3 months after intervention and revealed significant reduction of indexes, characterizing the repolarization anomalies.

Conclusions: BSMTP is high-resolution noninvasive method for the children with WPW syndrome. It is helpful in topical diagnosis before RFA and assessment of the myocardial changes after RFA.

**P.1.7** NONLINEAR DYNAMIC METHODS COULD PREDICT RECURRENTS OF RECURRENT ARRHYTHMIA IN WPW PATIENTS AFTER RADIOFREQUENCY ABLATION OF ACCESSORY PATHWAYS

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Introduction: Recent data support superiority of nonlinear dynamic measurements over traditional heart rate variability (HRV) in predicting adverse cardiac events. We tried to estimate R-R interval fluctuation in patients with the recurrence of tachycardhyrhythmia after RFA of accessory pathways using traditional HRV and nonlinear dynamic techniques.

Materials and methods: The study consisted of 25 WPW-patients (4 women), 31.3±12.2 y.o. Arrhythmia history was 7.6±6.8 years. Successful RFA of accessory pathways was performed in all pts. Recurrences of tachycardhyrhythmia were found within the first 24 hours (1 pt), 2 months (2 pts) and 9 months (5 pts) after RFA (5 pts in total). The following characteristics of chaos we used: informational dimension, fractal dimension and Lapunov’s parameters (λ).

Results: λ was significantly higher 6 hours after RFA in AVRT recurrence pts comparing with post-RFA arrhythmia recurrence-free pts (4.1±0.26 vs. 3.58±0.28, p<0.05). There were no differences regarding HRV measurements and other nonlinear dynamic methods parameters noted between the groups.

Conclusion: nonlinear dynamic methods might be considered as means to predict arrhythmia recurrence in WPW-syndrome pts who undergo RFA of accessory pathways.

**P.1.8** CARTO SYSTEM REDUCED CHRONIC RECURRENCE RATE OF TYPICAL AFL ABLATIONS

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Background: The recurrence rate after ablation of typical atrial flutter (AFL) is still higher than that of other supraventricular tachyarrhythmias. The purpose of the present study was to determine whether performing ablation using electro-anatomical mapping (CARTO) as guide is able to reduce the incidence of AFL recurrences during the follow-up.

Methods: Our study population comprises two groups of patients with AFL who underwent linear ablation of cavo-tricuspid isthmus: 1) from 1996 to 2002, the bidirectional block at level of isthmus was confirmed by conventional method such as changes of propagation sequence on the Halo catheter and/or occurrence of double potential on ablation line (Conv group); 2) from 2002 to 2005, the bidirectional block was confirmed by CARTO system (CARTO group).

Result: We enrolled 150 consecutive patients (age 63.0±11.9 yrs). The follow-up period averaged 921 days. The recurrence rate of AFL of Conv group was 12.4% (n=14/113) during 1189 days, while the recurrence rate of CARTO group was 8.1% (n=3/37) during 140 days. In patients who experienced recurrences, the isthmus length was longer than in patients who did not (30 vs 24 mm).

Conclusion: The recurrence rate of AFL during the follow-up seems to be lower in patients in whom ablation was performed by means of CARTO system. An isthmus length greater than 30 mm is predictor of AFL recurrence.

**P.1.9** COMPARISON OF LOW RATE IRRIGATION RADIOFREQUENCY ABLATION AND CONVENTIONAL CATHETER ABLATION IN TYPICAL ATRIAL FLUTTER PATIENTS USING LOCAL BASED CRITERIA FOR CAVOTRUCUSPID ISTHMUS BLOCK

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Purpose: To compare efficiency of slow saline irrigated ablation and conventional RFA in typical AFL pts using local based criteria for cavotricuspid isthmus block.

Material and Methods: The study included 69 consecutive AAD-free all pts (8 female). All pts were divided into group one (20 pts), mean age 52.3±11.9 yr. And group two (49 pts), mean age - 59.5±12.6 yr. In the 1st group RFA was performed using slow saline irrigation technique (10 c/min). In the 2nd group RFA was performed using conventional catheters.

Results: The recurrences of the arrhythmia were observed in 7 pts included in conventional ablation group and in 2 pts of irrigation group. Repeated RFA were effective in all cases.

<table>
<thead>
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<th>RF applications</th>
<th>Numbers</th>
<th>Max. Duration, sec</th>
<th>Mean temperature, °C</th>
<th>Mean power, W</th>
<th>Fluoroscopy time, min</th>
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<tr>
<td>1st group</td>
<td>15±7;9</td>
<td>121±48.9</td>
<td>48.0±3.9</td>
<td>58.6±9.5</td>
<td>32.0±15.8</td>
</tr>
<tr>
<td>2nd group</td>
<td>15±7;9</td>
<td>90±7.9</td>
<td>40.0±6.7</td>
<td>47.3±6.8</td>
<td>29.6±3.1</td>
</tr>
</tbody>
</table>

P value NS -0.05 -0.05 -0.05 NS

Conclusion: The use of low rate irrigation ablation of isthmus-dependent AFL is associated with lower incidence of all recurrence as well as lower temperature, power, duration of RF-delivery compared with the conventional approach.

**P.1.10** NONLINEAR DYNAMIC METHODS COULD PREDICT RECURRENCE OF ARRHYTHMIA AFTER RADIOFREQUENCY CATHETER ABLATION OF PAROXYSMAL ATRIAL FLUTTER

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Results: The third department of internal medicine, Showa University, Tokyo, Japan