Conclusion: Atrial fibrillation is related to individually varying reentrant circuits. Three-D electroanatomic mapping is useful in uncovering complex reentrant circuits in this group of pts. Mapping guided radiofrequency ablation yields a high success rate.

A14-5 RELIABILITY OF AN ELECTROCARDIOGRAPHIC SIGN TO PREDICT UNIDIRECTIONAL ISTMUS BLOCK IN ATRIAL FLLTER ABLATION


Aim of the study: to assess the reliability and predictive accuracy of an electrocardiographic (ECG) sign to predict unidirectional cavotricuspid isthmus block (CIB) in atrial flutter ablation (AFA).

Methods: 81 consecutive patients (46 M and 35 F, mean age 64 years, range 32 – 80) were referred to our Institutions to undergo radiofrequency (RF) AFA for recurrent episodes of paroxysmal or chronic AF. 27 pts also suffered from paroxysmal or persistent atrial fibrillation. RFA was performed during isthmus ablation as a critical point of conduction (S-60 application, avg. 19.7±17.3). We stated that, before ablation 36 patients (with sinus rhythm) were as follows:

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of Patients</th>
<th>Age (years)</th>
<th>Sex (M/F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controls</td>
<td>20</td>
<td>45-79</td>
<td>14F, 6M</td>
</tr>
<tr>
<td>Atrial Flutter</td>
<td>61</td>
<td>45-79</td>
<td>46M, 15F</td>
</tr>
</tbody>
</table>

Results: BIB was achieved in 79/81 patients (97.5%). In two patients, despite clear unidirectional isthmus block was seen from the inferior lateral right atrial wall (RAW) and from the coronary sinus ostium, CS os. In the remaining 79 patients, the occurrence of BIB was characterized unidirectional with a typical alteration of P wave (PW) morphology that was evident during pacing from CS os.

When isthmus conduction was intact, pacing from CS os disclosed a completely negative PW polarity in the inferior ECG leads. After obtaining BIB, in all the 79 patients pacing from CS os revealed a modification in PW morphology characterized by an upright terminal portion in the same ECG leads. This was also confirmed when activation and voltage maps with RPM system were performed to validate BIB.

Conclusion: An upright terminal portion of PW in the inferior leads during pacing from CS os can be considered a reliable and very accurate novel ECG sign of BIB. This ECG sign may be related to the "forced" atrio-ventricular activation sequence of the lateral RAW that is disclosed from pacing from CS os.

A15. ADVANCES IN VASO-VAGAL SYCONE

A15-1 PULSE WAVE ANALYSIS INDEPENDENTLY DISCRIMINATES BETWEEN SUBJECTS WITH RECURRENT VASOVAGAL SYCONE AND HEALTHY CONTROLS

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Purpose: We investigated whether vasovagal syncope (VVS) is associated with increased large artery stiffness using recently described index of digital pulse wave contour.

Methods: Finger arterial pressure (FAP) waveforms (Finapres) were obtained in 20 head-up tilt: test positive subjects with recurrent VVS (13 women, aged 39.5±15.7 years) and in 20 sex and age-matched healthy controls. Recently introduced index of large artery stiffness (SI) was calculated as a ratio of subject height and time delay (dT) between the systolic and diastolic peaks of the FAP waveform (see the figure). Both groups were compared by unpaired t-test.

Results: Compared to the control group, patients with VVS had significantly lower dT (291.4±28 ms vs. 328.9±18.7 ms, p = 0.00014) and higher SI (5.95±0.76 ms/m vs. 5.19±0.4 ms/m, p = 0.00035). This difference remained significant after controlling for body mass index, mean heart rate, and mean arterial blood pressure (ANCOVA): p = 0.00028 and p = 0.006 for dT and SI, respectively.

Conclusions: Our results support the hypothesis that increased large artery stiffness is a powerful predisposing factor for vasovagal syncope. This observation might have wider clinical implications, because the time delay between the systolic and diastolic peaks can be measured simply and rapidly by inexpensive photoplethysmograph devices.

A15-2 CEREBRAL VASOCONSTRICTION IN NEUROLOGICALLY-MEDIATED SYCONE: RELATIONSHIP WITH TYPE OF HEAD-UP TILT TEST POSITIVE RESPONSE

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Background: The pathophysiology of neurally mediated syncope (NMS) is unclear. Cerebral vasoconstriction has been observed in NMS patients during tilt test. To shed light onto NMS pathophysiolog, we investigated whether the degree of cerebral vasoconstriction changes with the positivity type of tilt test, scored following Sutton's classification.

Methods: 19 patients (10 males and 9 females, age 41±15 years) consecutively admitted to tilt test evaluation were studied with simultaneous recordings of electrocardiogram, blood pressure, electroencephalogram (EEG) and Transcranial Doppler Sonography (TCD) of the middle cerebral artery. TCD allowed computation of Gosling’s Pulsatility Index (PI) and mean arterial blood pressure (MAP). At the line of ablation we observed double potentials with the time avg. 113.0±35.5 ms. In the other 13 patients with the recurrence of arrhythmia we observed double potentials with the interval avg. 71.9±9.9 ms (p<0.005), the bidirectional isthmus block and significant difference between A potentials for LRA (1) = 39.9±15.5; (2) = 10.8±4.5 only (p<0.004).

Conclusions: An appropriate end-point of the typical atrial flutter ablation is bidirectional isthmus block 2) the estimation based on a sequence of the depolarization only after ablation is not sufficient for the successful ablation; any additional measurements have to be done to the correct end-point of the procedure.