0340

Initial experience with ultra-high density electroanatomical mapping for arrhythmias

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Purpose We report our initial experience with the newly released ultra-high density (UHD) electroanatomical mapping system (Rhythmia, Boston Scientific) for arrhythmias.

Methods All procedures using the multielectrodes catheter (Orion, Boston Scientific) in our institution, for arrhythmias mapping were analyzed. Procedure and fluoroscopy times were also assessed.

Results 20 patients were included (67.9±13.9 years) for radiofrequency ablation of accessory pathway (n=2) / typical flutter (n=5) / atrial fibrillation (AF n=2) / post-AF ablation left atrial tachycardia (AT n=6) / focal AT (n=2) / left and right ventricular ectopies (n=3). 63 maps (3.15 maps per patient) were acquired within a mean mapping time of 18±10min per map, including a mean number of 1002±3431 electrograms per map (Figure): RA maps (flutter=12; sinus rhythm SR=14; coronary sinus CS pacing=4); left atrial maps (during tachycardia=18; SR=3; CS pacing=4); right ventricular maps (n=4); left ventricular maps (during tachycardia=3; pacing=1). Acute success was achieved in 19/20 patients. In one patient, the ablation could not be performed in the absence of clinical ectopies. Total procedure and fluoroscopy times were respectively 232±78min and 15.9±8min. No periprocedural complications were noticed.

Conclusion UHD electroanatomical endocardial mapping can be safely performed in both atria and ventricles and allows fast and accurate mapping.

The author hereby declares no conflict of interest

0082

Is it really possible to predict adverse event in patients with a preexcitation syndrome?

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Purpose of study to collect history of patients with preexcitation syndrome (PS)-related adverse event (AE) and evaluate their risk factors. Classically male sex, multiple accessory pathways (AP) and at electrophysiological study (EPS), refractory period (RP) ≤250ms and shortest RR interval during atrial fibrillation (AF) ≤250ms are signs of risk of AE.

Methods AE occurred in 83 among a population of 970 patients consecutively recruited for a PS (8.5%) (resuscitated sudden death (n=8), or documented AF conducted with a rapid rate over AP (≥300 bpm), cause of syncope and requiring cardioversion (17) or drug (58). ECG, Holter monitoring and EPS in control state (CS) and after isoproterenol were performed.

Results Patients with AE were older than remaining patients (40±8.5 vs 33±17) (p 0.0002). Male gender did not differ significantly (71 vs 61%)(p 0.06). ECG in sinus rhythm was normal or near normal in 20 patients with AE (24%) more frequently than in patients without AE (9%)(p 0.0001). Intermittent PS was seen only in patients without AE. At EPS atrioventricular reentrant tachycardia (AVRT) was induced as frequently in patients with AE as in patients without AE (60% vs 53.5%)(0.22). All other electrophysiological data differ significantly (p 0.0001): maximal rate conducted over AP was more rapid in patients with AE (262±50 bpm vs 183±65 in CS, 302±39 vs 228.5±69 after isoproterenol); AP effective refractory period was shorter in patients with AE (232±34 vs 292±73 in CS, 197±29 vs 232±50ms after isoproterenol); AF was induced more frequently in patients with AE (72 vs 19.5%). Signs of malignancy at EPS were noted in all but 4 patients (sensitivity 95%).

Conclusion If electrophysiological data evaluated in CS and after isoproterenol have high sensitivity (95%) to predict PS-related adverse event, the detection of PS can be difficult. In 20% of patients who presented with an adverse event, the diagnosis of PS was not made because ECG in sinus rhythm was normal.

The author hereby declares no conflict of interest

0163

Management of long-term anticoagulant therapy after atrial flutter radiofrequency ablation according to associated atrial fibrillation and CHA2DS2-VASc score

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Background Radiofrequency ablation (RFA) is the only curative treatment for typical atrial flutter (AFL) and allows stopping antiarrhythmic drugs. However, management of long-term anticoagulant therapy (LT ACT) remains unclear, especially in lone AFL successfully treated and CHA2DS2-VASc score ≥2.

Abstract 0340 – Figure: Ultra high density left atrial macro reentry map
Abstract 0163 – Table: Table Long-term anticoagulation therapy management

<table>
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<tr>
<th>AF</th>
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<th>B GROUP (N=63)</th>
<th>C GROUP (N=17)</th>
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<td>2 (11.8)</td>
</tr>
</tbody>
</table>

AF: Atrial fibrillation. ACT: anticoagulant therapy. LTFUP: lost to follow up patient.

Aims Assessment of long-term ACT after AFL RFA according to associated atrial fibrillation (AF) and CHA2DS2-VASc score.

Methods From January 2012 to December 2013, patients who underwent RFA of cavotricuspid isthmus for typical atrial flutter in our centre were retrospectively included.

Results Of 166 patients (137 men, mean age: 66.7±10 years, 61 (36.7%) had a history of AF. The mean CHA2DS2-VASc score was 2.49. The patients were classified according to theoretical indication of LT ACT (patients with a non-pace ACT indication excluded – N=12; 7.2%): group A (LT ACT indicated), inclusive patients with CHA2DS2-VASc score ≥1, successful RF ablation and without AF history (N=74); group B (LT ACT indicated) inclusive patients with CHA2DS2-VASc score ≥1, AF history and/or failed AFL RFA (N=63); group C (LT ACT not indicated) inclusive patient with CHA2DS2-VASc score=0 (N=17). During a mean follow up of 48±24 days, 45 (60.8%), 10 (15.9%) and 11 (64.7%) patients stopped ACT respectively in group A, B and C differently according to AF onset (table). There were 8 (4.8%) hemorrhagic and 2 (1.2%) ischemic complications, all in patients with correct ACT management. The prevalence of AF during follow-up was 38%.

Conclusion After successful AFL RF ablation, ACT was frequently stopped in the absence of associated AF. However, AF was frequent even in patients with no AF history. Ischemic and hemorrhagic complications were rare. ACT should be regularly evaluated during follow-up especially according to CHA2DS2-VASc score and new onset of AF.

The author hereby declares no conflict of interest

0081 Percutaneous left appendage closure: real life outcomes and mid-term results during initial experience in a dedicated electrophysiology team

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Purpose Percutaneous left atrial appendage closure (LAAC) is accepted as a valuable solution for patients (pts) with atrial fibrillation (AF) and high thromboembolic risk in case of contra-indication to oral anticoagulation (OAC). Little is known about mid-term results in the real-life setting.

Methods We analyzed mid-term results in a dedicated EP team (2 experienced electrophysiologists [AF ablation >200 per yr], 1 echographist, 1 anesthesiologist). All indications were discussed before the procedure in a multidisciplinary approach.

Procedures were done under general anesthesia in a dedicated EP room with in-hospital cardiac surgery facilities. All LAAC procedures were performed with Watchman devices (Boston Scientific).

Results 50 pts were enrolled (male 76%, 77±6 years, paroxysmal AF 44%, permanent 54%). The CHA2DS2-VASc average score was 4.6±1.3; ≥4: 76%, HASBLED score was 3.7±1.2; ≥6: 64%. All indications were definitive contra-indications for OAC due to hemorrhagic events (neurological 7%, gastrointestinal 13%, ENT 3%, other 4%). The CT-scan ruled out any thrombus before the procedure for all pts with a perioperative TEE confirmation. Success rate of implantation was 100% (time of procedure 50±10 min, scopy time 8±5 min).

There were no periprocedure complications.

Postoperative therapy was: antithrombosis 31%, double antithrombosis 37%, anticoagulation 18%, none 3%. After 2 months, and TEE control, the initial treatment was switched to: antithrombosis 50%, double antithrombosis 10%, anticoagulation 10%, none 30%. Mid-term complications were: non severe hemorrhagic events: N=1, TIA due to carotid stenosis N=1. There were no other adverse events during 7.4±5 months follow-up.

Conclusion In a single center with large experience in EP, LAAC was performed with a very low rate of complications and excellent mid-term results regarding recurrences of thromboembolic and hemorrhagic events.

The author hereby declares no conflict of interest

0338 Computed tomography evaluation of the anatomical variation of the pulmonary veins in atrial fibrillation

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Introduction The electrophysiological and anatomical properties of the pulmonary veins (PVs) have been focused on since their crucial role in triggering or generating atrial fibrillation (AF) was first revealed. The presence of four distinct pulmonary veins (two left PVs and two right PVs) has been described as the normal variant.

Aim The purpose of our study was to describe the anatomy of the pulmonary veins in a cohort of patients of our county followed for AF.

Methods and results Our study is a prospective study which has included 38 patients followed for AF in the cardiology’s department of our Hospital. All patients underwent a CT scan of PVs in order to characterize their anatomy. PVs’ size was represented by the largest diameter.

Our patients had a mean age of 50.5±13 years. The majority of our patients had paroxysmal AF (65.8%), 4 had persistent AF (10.5%), 9 had prolonged persistent AF (24%), AF occurred in 63.6% of cases in healthy heart and 36.4% in pathological heart, 13 patients had an anatomical variant which represent 34.2% of the population. We had 3.9 PVs in average with a minimum of 3 and a maximum of 5 PVs. The average diameter of different VP was 23.4±9.31 mm for the left PVs and 19.75±7 mm for the right PVs. 7 patients (18.4%) had anatomical variants: N=1, recurrent non severe hemorrhagic stroke N=1, TIA due to carotid stenosis N=1. There were no other adverse events during 7.4±5 months follow-up.

Conclusion Cardiac CT is a non invasive procedure which can provide a detailed evaluation of the anatomy of the pulmonary veins. The presence of anatomical variations is common in patients with AF. This assessment is recommended to ensure success of the ablation procedure.

The author hereby declares no conflict of interest