A05-5 SIGNIFICANCE OF PAROXYSMAL JUNCTIONAL TACHYCARDIA IN STROKE

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Some strokes are related to atrial tachycardia or fibrillation (AT/AF). The significance of other arrhythmias remains debatable. The purpose of the study was to assess the significance of paroxysmal junctional tachycardia (PJT) in stroke. Population of study consisted of 129 patients (pts), aged 32 to 82 years, who had presented an unexplained stroke, unrelated to an overt AT/AF or to a vascular disease.

Methods: 24 Hour Holter monitoring, carotid echography, 2D and/or transesophageal echocardiogram were systematic; transesophageal or intracardiac electrophysiologic study was performed, using atrial pacing up to 2 nd d AV block and programmed atrial stimulation using 1 and 2 extrastimuli delivered on 2 cycle lengths (600, 400 ms) and if necessary was repeated after infusion of 20- 30 μg of isoproterenol.

Results: 1) salvos of atrial premature beats (APB) were noted on Holter monitoring in 39 pts (30%); 2) there was no thrombi in left atrium, but heart disease was present in 18 pts (hypertrophic cardiomyopathy 3, aortic valvular disease 2, aneurysm of atrial septum 2, ischemic heart disease 6, dilated cardiomyopathy 5); 3) electrophysiologic study was negative in 74 pts (57%); sustained (>1 min) AF/AT was induced in 27 pts (21%); 12 of them had an heart disease and 7 had salvos of APB's on Holter monitoring; PJT was induced in 17 pts (13%) (atrioventricular nodal reentrant tachycardia 15, reentrant tachycardia in a concealed accessory pathway 2); in 2 pts PJT degenerated into AF; all, but 2 were older than 65 years; they had no heart disease, but 5 of them had salvos of APB's on Holter monitoring. During the follow-up, 4 pts with induced AT/AF developed spontaneous AF; 1 pt without induced arrhythmias had repeated strokes, but remained sinusal; among pts with induced PJT, 4 of them developed PJT's, requiring RF ablation of the circuit, 1 of them died from a new stroke after anticoagulation was stopped and 3 pts developed AF.

Conclusion: in 13% of patients with unexplained stroke, paroxysmal junctional tachycardia was the only possible cause for the embolic event; the relationships between PJT and AF were previously reported; these patients required anticoagulation even after the curative treatment of PJT by catheter ablation of the reentrant circuit, because they remained at risk of other atrial tachyarrhythmias occurrence.

A05-6 ONE-TO-TWO ATRIOVENTRICULAR CONDUCTION: CLINICAL PRESENTATIONS, ELECTROPHYSIOLOGICAL BEHAVIOUR AND ABLATION RESULTS

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Aim: One-to-two atrioventricular conduction (AV cond.), ie, the double response to a single sinus beat resulting in two QRS complexes, is a rare presentation of dual AV nodal pathways. We evaluated the clinical and electrophysiological behaviour and ablation results in this group of patients.

Methods: Nine patients (pts), 5 males and 4 females with mean age 46±16 yrs, symptomatic for palpitations, were referred for EP study and ablation.

Results: Ventriculoatrial conduction was absent in all but patient #9 (Table 1). One-to-two AV cond. appeared spontaneously in pts #1, 2, 4 and during atrial stimulation only at a critical interval in all pts mimicking the AV nodal dual curve. In the pts with AVNRT the 1:2 AV cond. was critical for arrhythmia induction.

Table 1

Pts	Ineffective Drugs	Clinical Presentation
1	βBlocker, Verapamil	1:2 AV Cond. + SF AVNRT
2	βBlocker, Verapamil, IC, Amiodarone	1:2 AV Cond.
3	Sotalol, IC	1:2 AV Cond. + FS, SS AVNRT
4	βBlocker	1:2 AV Cond.
5	βBlocker, Verapamil, Sotalol	1:2 AV Cond. + SS, SF, FS AVNRT
6	IC, Verapamil	1:2 AV Cond. + SS AVNRT
7	βBlocker, Verapamil	1:2 AV Cond. + SF AVNRT
8	βBlocker, Verapamil	1:2 AV Cond. + SF AVNRT
9	βBlocker, Verapamil	1:2 AV Cond*. + SF AVNRT

AVNRT: atrioventricular nodal reentrant tachycardia; SF: slow-fast; FS: fast-slow; SS: slow-slow, * phenomenon appeared after slow pathway ablation.

The ablation procedure was performed using the slow potential to guide the RF delivery obtaining the abolition of the slow pathway conduction in all pts with a median of 1 application. In one case we had to apply RF in the left posteroseptal area to eliminate the slow pathway. In one pt the phenomenon appeared after a previous slow pathway ablation. No acute or late complications were seen. During a mean follow up of 20,3±12,4 months we observed one recurrence, that underwent a second successful ablation.

Conclusion: One-to-two AV Cond. may be considered a non reentrant type of AVNRT. Sometimes the phenomenon may be associated with traditional forms of AVNRT, implying a complex AV node structure with multiple pathways. The slow pathway ablation has an high rate of success in curing this arrhytmia.

A06. PACEMAKERS FOR ARRHYTHMIA MONITORING

A06-1 DIAGNOSIS OF SLEEP-DISORDERED BREATHING BY A CARDIAC PACEMAKER

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Sleep Disordered-Breathing (SDB) prevalence has been rated at 30% in pacemaker patients and is associated with a significant co-morbidity. Minute-ventilation sensors have proven their efficacy in rate-response and rest-rate applications. They may also by used for sleep detection and to monitor SDB. We investigated the ability of this new pacemaker function to estimate Sleep Apnea – Hypopnea (SAH) index, defined as the number of Apnea + Hypopnea per hour of sleep.

Methods: Forty-four patients (32M, 70.6±7.8 years) implanted with a Talent™ pacemaker (ELA Medical, France) for conventional pacing indication, experienced a one-night polysomnography (PSG) in a sleep laboratory. SDB monitoring function (SMF) was previously downloaded by telemetry in the RAM of the pacemakers. SAH index obtained using PSG (SAH_{PSG}) was compared with the index retrieved from the SMF (SAH_{SMF}). The diagnosis provided by the SMF function was considered as satisfactory if $|SAH_{PSG} - SAH_{SMF}| / SAH_{PSG} < 0.3$ or $|SAH_{PSG} - SAH_{SMF}| < 15$.

Results: The SAH index calculated from the pacemaker data was satisfactory in 29/44 patients (66%). Among the 15 tests which failed, 10 were false negatives (SAH index underestimated by the pacemaker): PSG included a nasal pressure in 8/10 cases, and 9/10 patients mainly presented hypopnea. Defining a SAH_{PSG} cutoff value of 30 to identify severe SDB patients, SAH_{SMF} yielded a positive predictive value of 45%, a negative predictive value of 85%, a sensitivity of 50% and a specificity of 82%.

Conclusions: (1) Detection of SDB using SMF is feasible. (2) The sensitivity of this monitoring function to hypopnea may be improved. (3) Combination of SDB monitoring and permanent tachy-arrhythmia follow-up provided by the pacemaker may significantly help identification and management of paced patients suffering from severe SDB.

A06-2 DECREASE IN RECURRENCE OF EPISODES AND BURDEN OF ATRIAL FIBRILLATION USING PACEMAKER DIAGNOSTICS TOOLS

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Background: The efficacy of prevention pacing therapies of atrial fibrillation (AF) is being evaluated in several studies but the programming of the device is usually predefined, without considering the individual onset triggers for AF. A strategy of management of paroxysmal AF with diagnostic tools has still not demonstrate its benefit. This study assessed the clinical benefits of the diagnostic functions (AF1.0) of the Selection® pacemaker in the management of AF in terms of recurrence of AF after the therapeutic adjustments performed using AF 1.0.

Methods: In a multicenter prospective study, 48 patients, 72±9 y, with documented AF and conventional pacing indications, received a Selection® DDDR (Vitatron, NL). Antiarrhythmic agents were prescribed in 90% of the patients. AF1.0 was programmed to document AT burden, onset daily distribution, duration, premature atrial beats before onset and the onset of the last 12 AT episodes exceeding 180 min^{-1}. After follow-up (FU) at 3 months using AF 1.0, therapeutic adjustments were performed in 53% of the patients (pacing