

Conclusions: The risk of stroke in WPW syndrome is very low (0.7 %). Only one clinical factor differs significantly from remaining population, the relatively old age (mean 62 ± 9 years). All other clinical factors as sex, associated heart disease, spontaneous symptoms and all electrophysiological data did not differ from remaining population.

181

Identification of electrophysiological substrate for ventricular arrhythmias in patients with repaired tetralogy of Fallot.

Maxime De Guillebon (1), Frederic Sacher (2), Nicolas Derval (2), Pierre Bordachar (2), Xavier Iriart (1), Philippe Ritter (2), Meleze Hocini (2), Pierre Jais (2), Michel Haissaguerre (2), Jean-Benoît Thambo (1) (1) *Hôpital Cardiologique Haut Lévêque, Service du Pr Thambo, Pessac, France* - (2) *Hôpital Haut Lévêque, Rythmologie, Pessac, France*

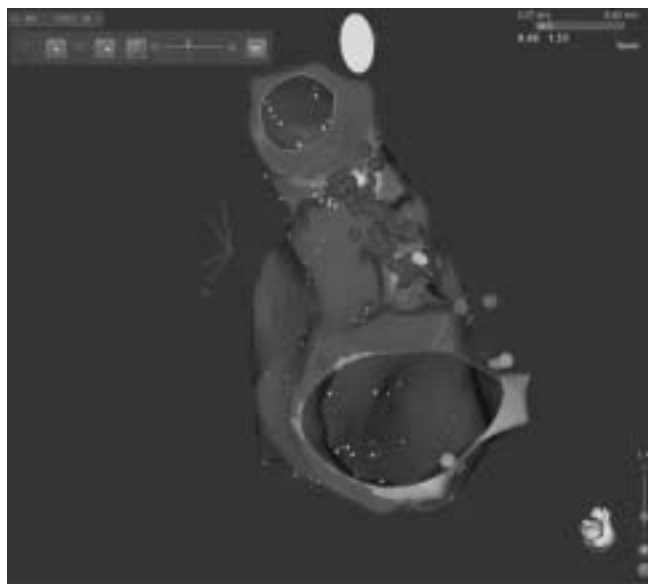
Introduction: Patients with repaired tetralogy of Fallot (TOF) represent a new category of patients referred to electrophysiology laboratory for ventricular arrhythmia (VA) mapping and ablation. Different anatomical regions have been identified as potentially responsible for reentry: ventricular septal defect (VSD) patch, surgical incisions, right ventricular outflow tract (RVOT) patch. We aimed to investigate electrophysiological substrate responsible for potential VA in patients with repaired TOF.

Methods: All patients with repaired TOF referred to the CHU de Bordeaux for VA evaluation from January 2008 to april 2010 underwent right ventricular (RV) 3D mapping. Sinus activation and voltage mapping was then performed before VA induction \pm ablation.

Results: 7 patients (4 male, 42.5 ± 12 years old) underwent RV mapping during VA evaluation. Surgical repair of TOF had been realized 36 ± 11 years before the procedure. All patients displayed a right bundle branch block on 12 lead electrocardiogram.

Sinus rhythm RV activation begins in all patients in the septum and then activates the RV centrifugally with a zone of slow conduction with a double potential (100 ± 30 ms) going from the tricuspid annulus (TA) to the RVOT. Voltage maps (figure) show systematically the same pattern of a zone of low voltage (< 1.5 mV) due to the VSD repair close to the RVOT scar area. This area fits with the slow conduction area. In the 2 patients with sustained ventricular tachycardia (VT), critical isthmus was located in this area.

Conclusions: Specific activation and voltage pattern was found in these Fallot patients. In the 2 patients with sustained VT, the critical isthmus was found between VSD repair patch and RVOT scar.



Right ventricular voltage map, view from the TA

182

Is the measurement of accessory pathway refractory period reproducible?

Céline Olivier Kazmierczak, Béatrice Brembilla-Perrot
CHU of Brabois, Cardiology, Vandoeuvre Les Nancy, France

Short accessory pathway (AP) refractory period (RP), atrial fibrillation (AF), were reported as risk factors of sudden death in Wolff-Parkinson White syndrome (WPW). A short AP RP is defined as < 240 ms in control state (CS) and < 200 ms after isoproterenol (iso). The purpose of study was to evaluate the reproducibility of the measurement of AP RP during a same electrophysiological study (EPS).

Methods: 76 patients (pts) aged from 8 to 68 years (mean 30 ± 16.5) were studied prospectively for a preexcitation syndrome. EPS consisted of programmed atrial stimulation in CS at a basic cycle length of 400 ms with the introduction of one extrastimulus and the decrease of coupling until the effective AP RP or atrial RP. The measurement was repeated twice. Then, iso (0.02 to $1 \mu\text{g}\cdot\text{min}^{-1}$) was infused to increase the sinus rate to at least 130 beats/min and the programmed atrial stimulation was repeated twice in 56 pts.

Results: We noted important variations of AP RPs with generally a shortening at the second measurement. Mean variations were 34 ± 51 ms in CS and 32 ± 24 after iso. The mean values in CS were 280 ± 50 ms and then 253.5 ± 59 ms ($p < 0.003$). The mean values after iso were 239 ± 45 ms and then 209 ± 39 ms ($p < 0.0001$). In CS 55 pts had initially an AP RP > 240 ms (mean 304 ± 36); at other study, mean values were 278 ± 44 ; 14 of them had an AP RP < 240 ms at the other measurement. Most of changes ($n=9$) occurred in pts with AP RP < 280 ms. 21 pts had a short AP RP (< 250 ms) (mean 220 ± 18). All of them had still a short AP RP at other measurement (mean 204 ± 24). After iso 49 pts had an AP RP longer than 190 ms (mean 248 ± 41). At the other study mean value was 215 ± 35 ms; 15 pts had an AP RP < 200 ms at the other study; all of them had an initial value < 250 ms. Among 7 pts with initial AP RP < 200 ms all of them but one had an AP RP < 200 ms.

Conclusion: There are important variations of AP refractory periods during electrophysiological study except in patients with very short AP refractory periods. Therefore the values of AP RP's should be interpreted carefully in association with the other data of electrophysiological study as the induction of tachycardias.

183

Changes in T wave morphology prior to onset of ventricular arrhythmias in ICDs

Philippe Maury (1), Frank Raczka (2), Jean Luc Pasquié (2), Lionel Beck (3), Jerome Taieb (4), Alexandre Duparc (5), Benoit Hallier (6), Pierre Mondoly (1), Anne Rollin (1), Fujian Qu (6), Riddhi Shah (6), Taraneh G Farazi (6), Marc Delay (1), Claude Barnay (4), Jean-Marc Davy (2) (1) *CHU Rangueil, Cardiologie, Toulouse, France* - (2) *Hôpital Universitaire Arnaud de Villeneuve, Montpellier, France* - (3) *Hôpital Universitaire Carremeau, Nimes, France* - (4) *CHG Aix en Provence, Aix en Provence, France* - (5) *CHU Rangueil, Toulouse, France* - (6) *St Jude Medical, Sunnyvale, Etats-Unis*

Introduction: T wave morphological changes before onset of ventricular arrhythmia are poorly known. ICD-stored intracardiac electrograms (EGM) present a unique opportunity for detecting temporal changes in repolarisation before initiation of VT/VF.

Methods: 57 implanted patients with St Jude Medical ICDs (45 men, 64 ± 12 yo, mean EF 34 ± 15 %) were prospectively enrolled. Eleven different T wave parameters were extracted from EGM (T amplitude, T peak time, T end time, T duration between baseline crossing and between points of maximal slopes, T peak to T end, maximal ascending and descending slopes, timing of points of maximal slopes and T wave area). Values of each parameter in recordings prior to VT/VF were compared to control recordings sharing comparable QRS and T wave morphology and similar heart rate in the same pts.

Results: 23 VT/VF episodes (24 ± 13 beats) and 13 baseline (25 ± 9 beats) (ns) were analyzed in 12 pts (1,9 episode/ pt). Mean heart rate was 71 ± 17 bpm for episodes and 66 ± 16 bpm for baseline recordings (ns). Significant differences were found in T wave amplitude, T wave maximal slopes, T peak