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Incidence of Gastroparesia After Pulmonary Vein Isolation With Cryoballoon Catheter in 25 Consecutive Patients Presenting Paroxysmic or Permanent Atrial Fibrillation

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Background: Various types of gastro-intestinal complications have already been reported after atrial fibrillation (AF) radiofrequency ablation. The objective of this prospective study was to assess the incidence of esogastric injuries after pulmonary vein isolation (PVI) with the cryoballoon catheter (Arctic Front, CryoCath, Quebec, Canada).

Methods: Between December 2007 and April 2009, 25 patients (15 males, mean age 55 years old) with symptomatic, drug refractory, paroxysmal (n= 24) or persistent (n= 1) AF underwent circumferential anterolateral PVI using a cryoballoon catheter. Post-procedural upper gastro-intestinal endoscopy was systematically performed on the following day.

Results: All procedures were performed in patients using a double lumen 23 or 28 mm cryoballoon catheter, with a mean maximal temperature of ~45.5 ± 19.7°C. Out of the 100 veins treated by the cryoballoon technique, 93 were completely isolated (93%). The number of balloon applications per vein was 2.2 ± 0.7 and the mean procedure time was 158.5 ± 28.7 minutes. Endoscopy found gastroparesis in 4 patients (16%, 2 gastric bezoar and 2 severe gastric stasis) which were considered as likely related to the ablation and due to vagal injury. All patients were asymptomatic. In 13 cases (52%), endoscopic abnormalities were considered as fortuitous (peptic gastritis and esophagitis, n=8; gastric ulcer, n=1; hiatal hernia, n=5; esophageal lipoma, n=1). In one case, the endoscopy revealed a Mallory Weiss syndrome, presumably connected to pre-operative trans-esophageal echocardiography. Esogastroscopic endoscopy was normal in only 8 cases (32%).

Conclusion: Cryoballoon catheter ablation for AF is associated with an unusual high incidence of gastroparesia (16%) which could be related to procedural periesophageal vagal nerve damage.

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Epicardial VT Ablation: A Multicenter Safety Study

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Introduction: Although most ventricular tachycardia (VT) originates from the endocardium, epicardial substrate requiring epicardial mapping/ablation is increasingly recognized. There is, however, limited information about its safety and midterm complications.

Methods: All patients undergoing VT ablation in 3 tertiary care centers between 2001 and 2007 were included in this study. Of 913 VT ablations, 156 procedures (17%) involved epicardial mapping and/or ablation. These were performed in 134 patients (109 male, 56 ±53yo), after a previous VT ablation in 119 (76%). The underlying substrate was ischemic cardiomyopathy (CMP) in 51, non ischemic CMP in 39, Arhythmogenic Right Ventricular Cardiomyopathy in 13, and others types of CMPs in 31.

Results: Epicardial access was obtained via percutaneous subxyphoid puncture in 136 procedures, by a surgical subxyphoid approach in 14 and during open heart surgery in 6. Epicardial ablation (13±12min; median: 10min) was performed in 121/156 procedures (78%). Nineteen patients subsequently required repeat procedure(s) and the epicardium could be re-accessed in all but one patient.

A total of 8/156 (5 %) major complications related to pericardial access were observed acutely: 7 epicardial bleeding (>100cc) [all bleeding stopped spontaneously] and 1 coronary stenosis.

After a mean follow-up of 23 ±21 months, 3 delayed complications related to pericardial access, were noted (1 major pericardial inflammatory reaction, 1 delayed tamponade and 1 coronary occlusion 2 weeks after the procedure).

Conclusion: VT ablation requires epicardial mapping and ablation in 121/913 (13%) procedures with a risk of 5% and 2% of acute and delayed major complications related to epicardial access.

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Unexpected low prevalence of atrial fibrillation in cryptogenic ischaemic stroke: a prospective continuous monitoring study

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Introduction: Ischemic stroke (IS) is a frequent pathology, burdened by high rate of recurrence and significant morbidity and mortality. There are several causes of IS, affecting prognosis, outcomes and management, but in many cases the etiology remains undetermined despite comprehensive research. We hypothesized that atrial fibrillation (AF) was largely involved in this pathology but was underdiagnosed by standard methods. The aim of this study was to determine the incidence of AF in cryptogenic IS, by using continuous monitoring of the heart rate over several months. The secondary objective was to test the predictive value of atrial vulnerability study towards spontaneous AF.

Methods and results: We prospectively enrolled 24 patients under 75 years: 15 men and 9 women of mean age 48.8±13.6 years who experienced cryptogenic IS presumed of cardioembolic mechanism within the last 4 months. Any cause of IS was excluded by normal 12-lead ECG, 24-hour Holter monitoring, echocardiography, cervical Doppler, haematological and inflammatory tests. All patients underwent electrophysiological study. 7 patients (29.2%) had inducible arrhythmia during programmed atrial stimulation and 9 (37.5%) had a latent vulnerability index (LVI) <2.5. Patients were secondarily implanted with an implantable loop recorder (ILR) (Medtronic®) for up to 9526 (30s) to look for spontaneous AF over a mean follow-up interval of 14.5 months. No sustained arrhythmia was found. Only one patient had no significant AF access (<30 s). In this patient, it was not triggered sustained arrhythmia but the LVI was low.

Conclusion: This study shows that contrary to what was expected, AF does not appear to be a common pathology in patients under 75 years with unexplained IS. The use of ILR should not be generalized in the systematic assessment of these patients because of its unprofitability. Finally this study attests the poor value of atrial vulnerability study for predicting spontaneous AF in such patients.

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Circumferential pulmonary vein isolation with a cryoballoon: safety, efficacy and follow-up (experience of the rythmology Unit, CHU Grenoble)