**ASYMPTOMATIC ACUTE COMPLICATIONS OF ATRIAL FIBRILLATION ABLATION USING IRRIGATED RADIOFREQUENCY TECHNOLOGY**

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Complications after atrial fibrillation (AF) ablation are rare and therefore consequent analysis of risk factors is often hard. Although, in asymptomatic patients silent cerebral events (SCE) in magnetic resonance imaging (MRI) and endoscopically detected esophageal thermal lesions (EDEL) have been documented in a much higher percentage of these patients. These asymptomatic complications may serve as surrogate indicators for the potential for severe complications (periprocedural stroke and atrio-esophageal fistula) of a specific ablation technology. We evaluated the incidence of SCE and EDEL in patients undergoing AF ablation using irrigated radiofrequency ablation technologies.

*Methods*: Overall 365 pts undergoing either single-tip contact-force irrigated RF ablation (N=221) or multipolar irrigated RF (nMARQ, N= 170). EDEL using post-ablation endoscopy (days 1 – 4) and SCE using diffusion-weighted brain MRI (days 1 – 3) were documented and related to procedural and patient-specific parameters. No symptomatic complications occurred in this patient cohort.

*Results*: 317 pts. underwent post-ablation endoscopic evaluation for EDEL and 333 post-ablation MRI to detect SCE. Overall incidence of EDEL was 17% (53) including 5% (15) esophageal ulcers and 25% (72) had SCE. In the single-tip RF ablations 13% had EDEL and 26% SCE whereas in the nMARQ ablations 21% had EDEL and 23% SCE. The incidence of EDEL was higher in patients undergoing esophageal temperature monitoring using a thermal esophagus probe with non-insulated large metal electrodes (30% versus 6% in single tip and 31% versus 6% in nMARQ ablations). The use of this specific probe was the only independent predictor of EDEL. The incidence of SCE was relevantly higher in patients ablated under continuous oral anticoagulation (37% versus 12% for single tip and 31% versus 15% for nMARQ ablations). Interrupted oral anticoagulation, persistent AF and left atrial low voltage areas were independent predictors of SCE.

*Conclusions*: AF ablation using irrigated RF involves a risk of asymptomatic complications to the esophagus and brain relevantly higher than symptomatic complications. The incidence of EDEL in irrigated RF is relevantly influenced by using a specific esophagus temperature probe with large non-covered metal electrodes. The incidence of SCE is modified by mode of periprocedural anticoagulation management and patient-specific factors. Reduction of asymptomatic complications may warrant beneficial effects on the most severe complications of AF ablation like periprocedural stroke and atrio-esophageal fistula.