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PULMONARY VEIN SPONTANEOUS ACTIVITIES: INFLUENCE FACTORS AND IMPACT ON PULMONARY VEIN RECONNECTION

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Songwen Chen, Gang chen, Weidong Meng, Feng Zhang, Yiwu Yan, Shaowen Liu.
Department of Cardiology, Shanghai First People's Hospital, School of Medicine,
Shanghai Jiao Tong University, Shanghai, China

Objectives In this study, we sought to evaluate the influence factors of pulmonary vein (PV) spontaneous activities (SAs) and the impact of SAs on the PV reconnection (PVR) in atrial fibrillation (AF) patients.

Methods Circumferential PV isolation as a first ablation procedure was performed in 689 consecutive patients with AF (460 males, mean age 58.9 ± 10.5 years).

Results The acute PV isolation was achieved in 680 (98.7%) patients. A total of 342 ipsilateral PVs (25.1%, 342/1360) with SAs were documented in 295 patients (43.3%, 295/680). Patients were classified as SAs Group and Control Group. Univariate analysis revealed that gender ($p=0.002$), type of AF ($p=0.006$), rheumatic heart disease ($p=0.002$) and a history of cardiac surgery ($p=0.008$) had significant difference between the two groups. The multivariate analysis revealed that male (Exp [B] 1.717, 95% CI 1.216 to 2.425, $p=0.002$) and paroxysmal AF (Exp (B) 1.595, 95% CI 1.145 to 2.221, $p=0.006$) were independently associated with the presence of SAs. The incidence of acute and intraoperative PVR of SAs Group was higher than that of Control Group (27.0% vs 19.0%, $p=0.026$; 38.6% vs 29.9%, $p=0.042$).

Conclusions The male and paroxysmal AF were the two independently influence factors of SAs in patients under went circumferential PV isolation. The SAs had significant impact on the acute and intraoperative PVR during AF ablation.