Dissociated pulmonary vein activity after pulmonary vein isolation for paroxysmal atrial fibrillation: a predictor for recurrence?

The role of dissociated pulmonary vein (DPV) activity after pulmonary vein isolation (PVI) is still poorly defined. We evaluated electrophysiological features and clinical impact on long-term outcome of DPV activity. A total of 243 patients (mean age 63 ± 11 years; 63% males) undergoing PVI for paroxysmal atrial fibrillation (AF) were included. DPV activity was defined as a residual low frequency irregular PV rhythm. Patients were divided into Group 1 (presence of DPV activity; n = 65) or Group 2 (absence of DPV activity; n = 178). Of 936 isolated PVs, 112 PVs (12%) showed DPV activity. DPV activity was observed more frequently in PVs identified as AF triggers (P = 0.026). During follow-up (mean 12 ± 7 months), 15 of 65 patients of Group 1 (23%) and 57 of 178 patients of Group 2 (32%) had an arrhythmia recurrence (P = 0.23). At linear regression analysis, no independent predictor for clinical recurrence was identified. During the repeat ablation, 62 of 72 patients (86%) showed a recovered PV conduction without difference between the 2 groups. Clinically, all patients of Group 1 with PV reconnection (n = 13/15) had a recurrence of paroxysmal AF. In Group 2, 5 of 52 patients with
reconnected PV developed non-PV related arrhythmias. DPV activity occurred in 12% of PVs after PVI and was observed more frequently in PVs identified as AF triggers. DPV activity was not predictive for AF recurrence during follow-up. PV-left atrium reconnection involving PVs with DPV activity leads to AF.