REVERSE PULMONARY VEIN REMODELING AFTER CATHETER ABLATION FOR ATRIAL FIBRILLATION

ACC Moderated Poster Contributions
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Background: The objective of this study was aimed to assess PV and left atrial (LA) reverse remodeling using chest computed tomography (CT) after catheter ablation for atrial fibrillation (AF).

Methods: Catheter-based wide area PV isolation was performed in a prospective study including 63 subjects (68% male, mean age 56±10 years) with symptomatic AF (49% paroxysmal, 51% persistent). Patients were followed at 3 and 12 months after ablation with repeat chest CT at 3 months. Pulmonary vein cross-sectional areas were measured using multi-planar reformations of orthogonal planes for en-face dimensions at the vein ostia.

Results: After a mean follow-up of 12±2 months, 48 patients (76%) were AF free on or off antiarrhythmic drugs. Significant reduction in LA volume (77±31 cm³ to 70±28 cm³, Δ9%, p<0.001) and mean PV ostial area (224±48 mm² to 182±43 mm², Δ19%, p<0.001) was observed after AF ablation. None of PV ostial narrowing >50% was observed. Patients with persistent AF had more reduction in LA volume (∆11.8±12.8 cm³ vs. ∆4.0±11.2 cm³, p=0.04) and in PV ostial area (∆62 mm² vs. ∆34 mm², p=0.04) as compared to the patients with PAF. The reduction of PV ostial area was significantly correlated with the reduction of LA volume (r=0.38, p=0.03, Figure 1).

Conclusions: Although the possibility of PV ostial narrowing may be present, catheter ablation of AF conveys a parallel reverse remodeling in PV ostia and LA volume suggested by the correlation between the two. This finding is more apparent in patients with persistent AF.