IMPACT OF PULMONARY VEIN ISOLATION TO PAROXISMAL ATRIAL FIBRILLATION FOR ATRIAL ASYNCHRONY AND GLOBAL STRAIN ASSESSED BY 3D STRAIN ECHOCARDIOGRAPHY

Poster Contributions
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Background: Asynchrony of left atrium (LA) assessed by two-dimensional strain is known to be observed in atrial fibrillation. This study sought to evaluate the impact of pulmonary vein isolation (PVI) for diastolic asynchrony of LA and global strain assessed by three-dimensional (3D) strain in paroxysmal atrial fibrillation (PAF).

Methods: Consecutive thirty PAF patients treated by PVI were enrolled. They underwent 3D echocardiography before and 3-months after PVI, compared with twenty healthy controls. Asynchrony quantification was performed according to the standard deviation of time-to-peak (TP-SD) of area tracking of sixteen segments in LA. And we also assessed global strain of LA.

Results: Patients background was identical between two groups. Before PVI TP-SD of PAF group was significantly higher than control group (10.0 ± 5.2% vs. 4.8 ± 2.3%, P<0.002) and global strain was significantly smaller (48.2 ± 32.9% vs. 84.4 ± 32.9%, P<0.001). Significant improvement of TP-SD and global strain was detected 3-months after PVI (10.0 ± 5.2% to 6.8 ± 3.0%, P=0.012 for TP-SD and 48.2 ± 20.2% to 58.1 ± 21.2%, P=0.018 for global strain, respectively). There still remained significant difference between PAF group 3-months after PVI and control group (6.8 ± 3.0% vs. 4.8 ± 2.3%, P=0.049 for TP-SD, 58.1 ± 21.2% vs. 84.4 ± 32.9%, P=0.014 for global strain)

Conclusion: Although diastolic synchrony and global strain of LA were impaired in PAF patients, PVI improved both of them which possibly led to reverse remodeling of LA.