Device detected subclinical atrial fibrillation and left atrial remodeling

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Introduction: Long term intracardiac monitoring in patients with permanent pacemakers (PPM) and implantable defibrillators detects subclinical atrial fibrillation (SCAF) in 28% to 68% of these patients within the first 1 to 3 years after implantation. Atrial fibrillation (AF) is known to be associated with left atrial (LA) remodeling. However, the association of SCAF with LA remodeling has not been investigated.

Methods: This study is a single center retrospective study. In patients with bradyarrhythmia, underwent implantation of PPM were enrolled. Patients with preexisting AF, atrial lead malfunction, didn't perform baseline or follow up transthoracic echocardiography (TTE). LA diameter, LA volume index (LAVI), tricuspid regurgitation (TR) grade, mitral regurgitation (MR) grade were evaluated using TTE. We subdivided group of patients depending on SCAF burden: no SCAF, low burden of SCAF, high burden of SCAF. The changes in TTE parameters according to the burden of SCAF were investigated.

Result: A total of 228 patients were enrolled. 117(51.3%) were male, and the mean age was 68.2 years. During the median follow up 5.4 years at least one SCAF episodes were detected in 161 patients (70.6%). Baseline LA diameter and LAVI were 41(39.1), 42(39.4), 43(44.8) mm, (ml/m2) according to the burden of SCAF. Delta LAVI was -2.0, 2.4, 13.9 (ml/m2) according to the burden of SCAF. Progression of TR was 0.1, 0.8, 1.4 according to the burden of SCAF.

Conclusion: High burden of SCAF was associated with LA remodeling and progression of TR.