Cardiac Arrhythmias

**LEFT ATRIAL APPENDAGE FAR FIELD POTENTIALS MIMICKING LEFT SUPERIOR PULMONARY VEIN POTENTIALS: DOES PROXIMITY MATTER?**

ACC Poster Contributions
Georgia World Congress Center, Hall B5
Sunday, March 14, 2010, 3:30 p.m.-4:30 p.m.

**Session Title:** Clinical Electrophysiology--Supraventricular Arrhythmias  
**Abstract Category:** Clinical Electrophysiology--Supraventricular Arrhythmias  
**Presentation Number:** 1080-142

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**Background:** Far field potentials (FFPs) originating from the left atrial appendage (LAA) often mimic left superior pulmonary vein (LSPV) potentials, thereby suggesting inadequate PV isolation (PVI). It is unknown if the proximity between LAA and LSPV can predict the presence of FFP.

**Methods:** FFPs in patients undergoing PVI (n=108) were identified by differential pacing from the LAA and distal coronary sinus. From preablation cardiac CT, the shortest distances between LAA and LSPV in at least 3 segments of LAA were measured in a blinded fashion (Fig).

**Results:** Clinical and demographic variables were similar in patients with (group 1, n=58, 54%) and without (group 2, n=50) FFP. The shortest distances (mm) at proximal, middle and distal segments of LAA to the corresponding sites on LSPV in patients with and without FFP were 4.8±1.4 vs 6.8±1.5 (P=0.00002), 2.4±0.9 vs 5.7±0.9 (P<0.00001), and 3.3±2.8 vs 7.2±3.0 (P<0.00001), respectively. The area under ROC curve, drawn to evaluate the discriminatory power of the shortest distance on CT scan to predict FFP, was 0.95 (95% CI: 0.915 - 0.985) (Fig). A distance of 3.5 mm in any segment predicted FFP with sensitivity and specificity of 91% and 85%, respectively.

**Conclusions:** A distance of < 3.5 mm between LAA and LSPV in preablation cardiac CT allows a priori prediction of FFPs from LAA after PVI. Knowledge of the presence of these FFPs and the ability to differentiate them from true LSPV potentials can avoid unwarranted excessive PV ostial ablation and related complications.