

POSTER PRESENTATION

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Post ablation timing to best visualize left-atrial Lesions: a feasibility study

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Background

Catheter-based atrial fibrillation (AF) therapy often uses cryo-balloon ablation of pulmonary vein (PV) ostia to achieve rhythm control. Prior studies suggest the ability of late gadolinium enhancement cardiac MRI (LGE-MRI) to visualize radiofrequency-induced scar. The optimal time after therapy to visualize cryo-ablation lesions is unknown. This study evaluates the relationship between the time of LGE-MRI acquisition after ablation and visualization of cryoballoon-induced scar.

Methods

Eleven consecutive patients (9 M, age 61 ± 6 y) undergoing cryoablation for AF were prospectively enrolled. All patients had pre-procedural left atrial angiography with LGE-MRI (1.5T Signa HDx, General Electric,) to define left atrial and pulmonary vein (PV) anatomy. All patients underwent repeat LGE-MRI between 7-28 days post-ablation. Images were visually assessed for scar (estimated as percent circumferential enhancement) detected in the PV antrum and placed in quartiles of definite LGE, likely LGE, unlikely LGE, and no LGE.

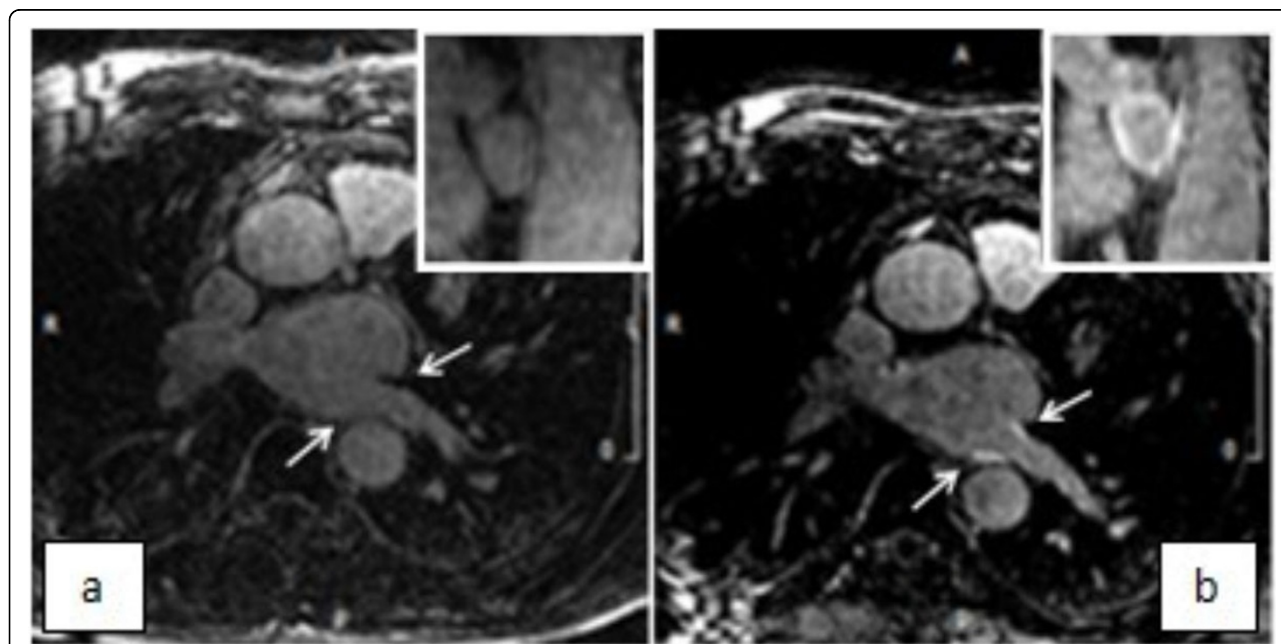
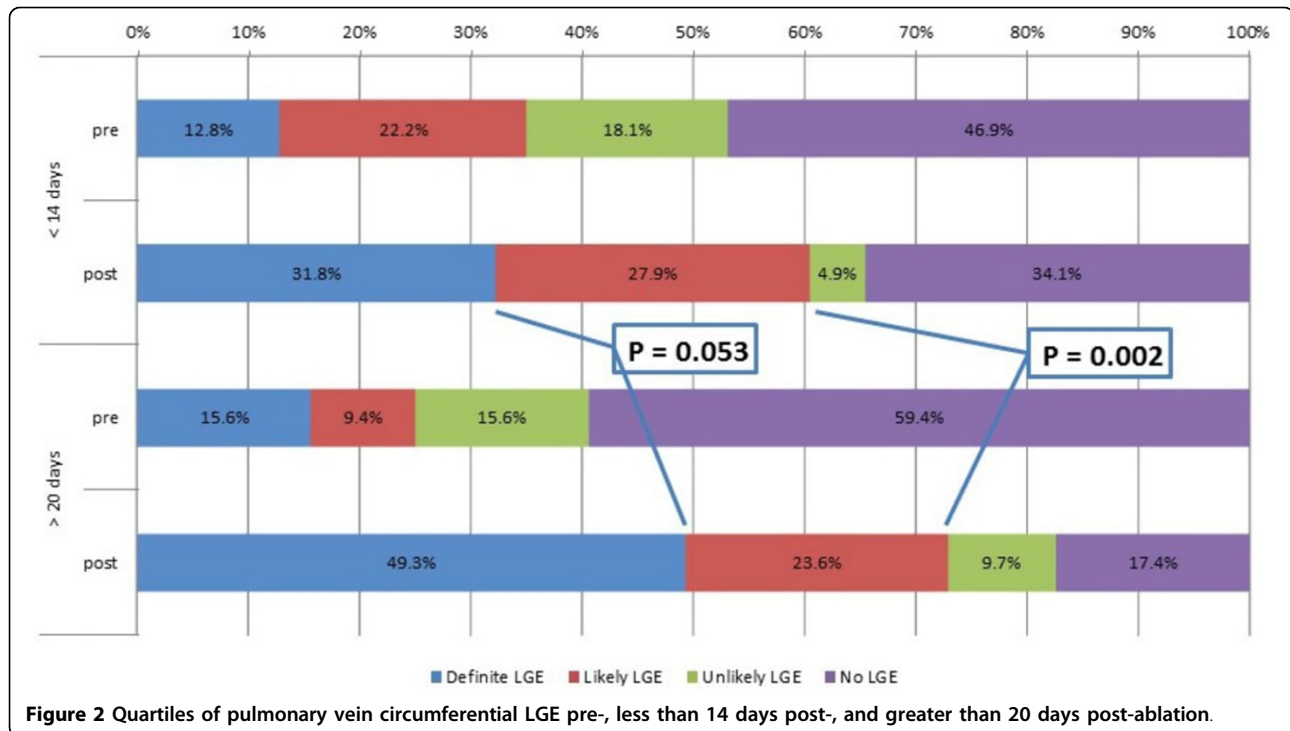


Figure 1 Typical acquisition showing pre ablation (a) and 20 days post ablation (b) LGE.

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Results

44 PVs were assessed both pre- and post-procedure, and all but 6 pre-procedural were characterizable. At < 14 days post-procedure, there was 31.8% definitely LGE circumferentially vs. 49.3% LGE > 20 days ($p = 0.053$); and a combined definite and likely LGE of 59.7% circumferential LGE vs 72.9% > 20 days ($p = 0.002$), despite achieving electrical PV isolation in all 44 patients.

Conclusions

This study demonstrates the feasibility of observing cryoablation induced PV scar on LGE-MRI by delaying imaging until 20 days post-ablation.

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