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Letter to the Editor

## Atrial fibrillation recurrence post pulmonary vein isolation: The complex secrets of left atrial geometry



### ABSTRACT

Buffle et al are to be congratulated for shedding more light on the electrophysiologic links regarding atrial fibrillation recurrence post radiofrequency catheter ablation. The different approaches of left atrium volume and left atrium diameter assessment employed in this study, is a limitation that should not go unnoticed, since angiographically calculated left atrium volume overestimates volume as compared to 3D echo measurements. Further, the timing of change has been reported to have prognostic significance; namely left atrium diameter reduction within the 3 month blanking period has been reported to independently predict prolonged arrhythmia free survival. Hence, we firmly believe that future studies should examine any potential correlations between left atrium diameter and recurrence mechanisms.

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Dear Editor,

Buffle et al.<sup>1</sup> are to be congratulated for shedding more light on the electrophysiologic links regarding atrial fibrillation (AF) recurrence post radiofrequency catheter ablation (RFCA). Authors suggested that late recurrences (LR) are associated with a pattern of increasing left atrium (LA) volume or diameter. They reported that smaller LA volume (assessed angiographically), is associated with pulmonary vein (PV) reconnection, while larger LA diameter (LAD; echocardiographically assessed) is associated with non-PV foci. The different approaches of LA volume and LAD assessment employed in this study, is a limitation that should not go unnoticed. Indeed, LA volume was not predictive of non-PV foci, and in turn, LAD was not predictive of PV reconnection. More, it should be underlined that angiographically calculated LA volume overestimates volume as compared to 3D echo measurements.<sup>2</sup>

Undeniably, implementation of optimal imaging modalities for LA volume measurement (cardiac magnetic resonance and/or multi-detector computed tomography) could have been cumbersome. Still, echocardiography is readily available in most centers and should echocardiographic indices succeed in clarifying the role of LA geometry in arrhythmia recurrence, this could have more practical clinical implications.

The above-mentioned findings imply a progressive atrial myopathic substrate that contributes in the AF pathophysiological interplay. Indeed, in a study by our group, PV isolation resulted in a beneficial effect in left atrial function.<sup>3</sup> Further, the timing of LAD change has been reported to have prognostic significance; namely LAD reduction within the 3 month blanking period (BP) has been reported to independently predict prolonged arrhythmia free survival after RFCA (as compared to no change or LAD

reduction after BP).<sup>4</sup> Finally, a recently published meta-analysis indicates the association of early recurrence (ER) within BP and LR post AF-ablation.<sup>5</sup> Hence, we firmly support that future studies should examine any potential correlations between LAD changes, ER and LR mechanisms.

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### Declaration of competing interest

None declared.

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