

Atrial fibrillation ablation: Limitations of pulmonary vein ablation catheter technology

We read with interest the paper by Koźluk et al. [1], which brings several points about multielectrode duty-cycled radiofrequency ablation:

- The outcome in patients with paroxysmal atrial fibrillation (AF) was lower when compared to 1- and 5-year follow-up after single cryoballoon ablation procedure performed with higher follow-up regime (7- and not 1-day Holter ECG) [2]. Most triggers originate in left atrium (LA)-pulmonary vein (PV) junction [3]. Pulmonary vein isolation (PVI)-focused ablation, which eliminates triggers, and partially eliminates substrate located near LA-PVs junction, results in high success rate in such patients. Failure of PVI in this group is rather a result of incomplete isolation of LA-PVs triggers or existing non-LA-PVs triggers. Therefore, it would be interesting to know the percentage and PV anatomy pattern of reconnections in these patients. Was AF recurrence more often observed in atypical PVs?
- Pulmonary vein ablation catheter (PVAC) [1] focuses on PVs only. Unfavorable results in patients with persistent AF are not surprising. AF has tendency to become more persistent over time [4]. The progression of electrical and structural remodeling of atria promotes both reentry and ectopic activity which can serve both as substrate and trigger for AF [4]. Sole PVs isolation has low effectiveness in such not-PV-trigger-dependent AF.

- Recently, safety precautions for PVAC-procedures have been reported [5], which makes trans-septal puncture with uninterrupted warfarin more demanding and the PVAC-procedure more dependent on operator's experience.
- Consequently, PVAC ablation, with a tantalizing "single-shot" approach, should be rather reserved for carefully selected population of patients with PV-trigger-dependent AF and performed by an experienced operator.

Conflict of interest: None declared

References

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