TWO-STAGE HYBRID TREATMENT OF PERSISTENT ATRIAL FIBRILLATION: SHORT-TERM SINGLE-CENTRE RESULTS

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Objectives: The persistent form of atrial fibrillation has unsatisfactory results with medical therapy or with catheter-based treatment, where incomplete ablation lines remain a problem. This study evaluates the efficacy of the sequential, two-stage hybrid treatment combining thoracoscopic surgical and transvenous catheter atrial fibrillation ablation.

Methods: Thirty patients with persistent atrial fibrillation underwent a surgical thoracoscopic radiofrequency ablation procedure under settled protocol (pulmonary veins isolation, box lesion, isthmus line lesion, left atrial appendage occlusion with epicardial clip) followed by transcatheter evaluation three months later. In this session, electrical mapping of the left atrium was performed and incomplete isolation lines were finished. The isolation line to the mitral annulus as well as the line to the cavo-tricuspid isthmus were simultaneously performed at this session.

Results: Preoperative mean duration of atrial fibrillation was 33 months (4-96 months) with 17% persistent and 83% long-standing persistent atrial fibrillation. Mean left atrium size was 44 mm (37 ± 56 mm). The complete surgical ablation protocol was achieved in 97% of patients, with no death, early stroke or pacemaker implantation in the postoperative period. In 63% of patients, the left atrial appendage was occluded with an epicardial clip. During the transcatheter electrophysiological evaluation, 13% of left pulmonary vein ablation lines, 10% of right pulmonary vein ablation lines and 53% of upper and/or lower box ablation lines were classified as not transmural, and endocardial touch-up was necessary. Freedom from atrial fibrillation was 83% after surgical ablation and 97% after the completed hybrid procedure.

Conclusions: The sequential, two-stage hybrid strategy (surgical thoracoscopic and cathether ablation) is feasible and safe with high post-procedural success and probably represents the optimal treatment with low risk load and potentially long-term economic benefit for patients with persistent atrial fibrillation.