Clipping to sinus rhythm: cardioversion of atrial fibrillation by a thoracoscopic left atrial appendage occlusion

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A 52-year-old male patient underwent a hybrid procedure for the treatment of a long-standing persistent atrial fibrillation (second ablation).

A thoracoscopic video-assisted approach was used for the epicardial, radiofrequency pulmonary vein isolation, and the ’box lesion’ set creation. Epicardial electrograms at the different sites in the left atrium were recorded, before and after the completion of the ablation. The cycle length of the left atrium appendage activation decreased after the ablation, and electrograms became fractionated (Figure A). Afterwards, the epicardial appendage clipping was performed during which patient converted to sinus rhythm. There was no more electrical activity in the appendage, entry and exit blocks were confirmed (Figure B). Endocardially, the pulmonary vein isolation was confirmed and no further ablation was performed.

We hypothesize that, by isolating pulmonary veins and posterior wall of the left atrium, the appendage became the main atrial fibrillation driver, marked by a new fractionation of the local electrograms. Consequently, the effective electrical isolation of the appendage stopped the arrhythmia and patient returned to sinus rhythm. It is important to note that the epicardial appendage clipping might provide not only the functional occlusion but also the electrical isolation, unlike the percutaneous devices that leave the arrhythmogenic potential of the appendage untouched.

The full-length version of this report can be viewed at: http://www.escardio.org/Guidelines-&-Education/EE2%80%93learning/Clincases/Electrophysiology/EP-Case-Reports.