

## **The One Step Electrophysiological and Surgical Approach for Treatment of Atrial Fibrillation**

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**Background:** The treatment of longstanding paroxysmal or persistent atrial fibrillation (AF) on the beating heart is still challenging, whether it is performed endocardially by the electrophysiologist or epicardially by the surgeon. Shortcomings of both techniques has lower success-rates due to the inconsistent transmuralty of the lesions for the endocardial approach and the lack of electrophysiologic (EP) endpoints for the surgical approach. We therefore combined a thoracoscopic surgical approach with a percutaneous transseptal EP procedure to overcome each procedure limitations.

**Methods:** Sixteen patients with AF refractory to medical therapy had a single step hybrid procedure (11 patients persistent AF and 5 patients paroxysmal AF). A right-sided thoracoscopic box-lesion was obtained with a monopolar radiofrequency catheter, Cobra Adhere, Estech. Immediately after the surgical procedure, a percutaneous endocardial ablation was performed to complete the box-lesion and/or to isolate the pulmonary veins (PV). Procedural endpoints were PV isolation and conduction delay > 200 msec while pacing in the box.

**Results:** There was no mortality. One patient had a late tamponade treated by pericardiocentesis and one patient had a endotracheal bleeding due to intubation. At 3 and 6 months follow-up, 13/16 (81%) and 11/16 (68%), respectively, were in sinus rhythm with 6 days Holter monitoring..

**Conclusion:** In patients with AF, a combined thoracoscopic surgical and percutaneous electrophysiological approach is feasible and could overcome their respective limitations if performed as a single procedure. It has the potential to correct the ablation strategy towards a patient tailored approach, increase success-rate and reduce complication rates.