

# **Initial experience of video-assisted epicardial pulmonary vein isolation off-pump and ablation of ganglionic plexi in patients with atrial fibrillation**

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The objective of this study is to assess the feasibility and safety of our initial experience of video-assisted thoracoscopic epicardial pulmonary vein isolation in patients with atrial fibrillation, who failed previous attempts of transvenous pulmonary vein isolation.

Method: Since Nov -05, 10 pats (4 women, 6 men, 44-61 years) with persistent or permanent AF underwent video-assisted thoracoscopic epicardial pulmonary vein isolation. All pats had experienced two unsuccessful endocardial catheter pulmonary vein (PV) isolations.

The epicardial approach included two intercostally 10 mm ports and one working port on each side of the thorax and a video-assisted epicardial PV isolation was performed “off pump” bilaterally on a beating heart. A bipolar radiofrequency device (Atricure) was used to achieve transmural linear lesions and isolation of the PVs. The left atrial appendage (LAA) was excised using a surgical stapler. Vagal ganglionic plexi (GP) were identified using high frequency stimulation 800 bpm, pulse width 9,9 msec, in specific predetermined sites around the PVs. During stimulation, a decrease exceeding 50% of the ventricular rate identified a GP with predominantly vagal innervation which then was ablated using RF-energy. Vagal denervation was confirmed by repeating the GP stimulation after the RF application(s).

Results: PV isolation confirmed by pacing, identification and ablation of vagal GP, and excision of the LAA were successful in each patient. The average post op stay was 7 days. There were no major post op complications. During the first three post op days, 8 pats had an episode of AF which was terminated by pharmacological or electric conversion. During a follow-up of 2 weeks to 5 months no pat has had AF recurrence or any late complications.

Conclusions: Video-assisted thoracoscopic epicardial pulmonary vein isolation with ablation of vagal GP and excision of LAA is feasible and well tolerated in AF patients. Our initial experience with the method offers promising results in AF patients which cannot be cured with endocardial catheter ablative technique. Continuing study evaluation the long term safety and efficacy of the method is indicated, especially regarding the necessity and efficacy of vagal denervation.