ELECTRICAL ISOLATION OF THE LAA OCCURS FOLLOWING EPICARDIAL LAA LIGATION

Poster Contributions
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Background: The left atrial appendage (LAA) has been implicated as a potential trigger for atrial fibrillation (AF). Catheter ablation to isolate the LAA with catheter ablation has been successful, but is limited by the risk of tamponade and the potential for mechanical standstill & thrombus formation. We tested the hypothesis that LAA isolation with pericardial ligation acutely alters LAA electrical activity.

Methods: A subxiphoid puncture for an epicardial sheath and a transseptal puncture for an SL1 sheath were performed. An epicardial magnet-tip guidewire was connected to an endocardial magnet-tip guidewire placed in the LAA apex. The LARIAT snare device was placed over the epicardial guidewire to the LAA base. LAA closure was confirmed with TEE. 30 patients were tested for LAA electrical isolation using intracardiac unipolar recordings from the endocardial guidewire. Electrograms were recorded at baseline and after ligation.

Results: Mean baseline unipolar voltage was 10.6 mV (SD: 5.33) versus the mean post ligation voltage of 3.1 mV (SD: 4.11, p < 0.001 See figure). 10 (33%) patients had complete abolition of LAA electrical activity after ligation; 27 (90%) patients had a decreased LAA voltage after ligation.

Conclusions: LAA ligation acutely alters electrical conduction into the LAA. As ischemic necrosis progresses, this may translate into long-term LAA electrical isolation.

These results support future studies testing whether LAA ligation and electrical isolation improves AF ablation.