Objective: To assess rates of durable pulmonary vein (PV) and left atrial posterior wall (LAPW) isolation during repeat left atrial procedures following a hybrid convergent ablation procedure.

Methods: We conducted a retrospective analysis of all patients with LSPAF that underwent hybrid convergent ablation (surgical PV ablation plus endocardial catheter ablation) and left atrial appendage (LAA) clipping at our institution. Patients who presented for repeat left atrial ablation procedures for recurrent atrial arrhythmias after undergoing a hybrid ablation were included in the analysis. PV and LAPW isolation were assessed using standard techniques evaluating for entrance and exit block.

Results: A total of 43 patients with long standing persistent AF underwent hybrid ablation with LAA occlusion from 2019-2020. Mean age of the cohort was 64.9 ± 8.9 years and 62.8% were males. Over a 12 month follow up period, 5 out of 43 patients (11.6%) patients required repeat catheter ablation. Mean duration between hybrid convergent procedure and repeat ablation was 6.2 ± 4.3 months. Presenting rhythm for all patients was recurrent AF. During repeat left atrial mapping, PV reconnection was seen in 2 patients (LIPV & RSPV). There was evidence of LAPW reconnection in 4 out of 5 patients. 3 patients had evidence of a residual LAA stump which was active electrically and required additional ablation for electrical isolation.

Conclusion: LAPW reconnection is seen commonly in patients presenting with recurrent AF following hybrid convergent AF ablation. Additional strategies to achieve durable LAPW isolation need to be evaluated. Residual LAA stump may also be an important contributor to recurrent AF and needs further evaluation.

PO-636-02

UTILITY OF HIGH OUTPUT PACING TO IDENTIFY CRITICAL COMPONENTS OF VENTRICULAR TACHYCARDIA CIRCUITS IN PATIENTS WITH ISCHEMIC AND NONISCHEMIC CARDIOMYOPATHY

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Background: Entrainment and pace mapping are used to identify critical components (CC) of ventricular tachycardia (VT) circuits. In patients with dense myocardial scar, VT circuits can be located deep and may elude capture at standard pacing outputs (SO; up to 10 mA at 2 ms).

Objective: The purpose of this study was to assess utility of high output pacing (HOP; 50 mA at 2 ms pulse width) for identifying CC of VT circuits after SO failed to elicit capture in densely scarred myocardial tissue.

Methods: Our standard VT ablation approach included electroanatomic mapping for substrate characterization and entrainment and/or pace-mapping to identify CC of VT circuits. Patients that required HOP comprised the study cohort. Ablation end-points were VT termination and additional substrate modification to achieve complete non-inducibility.

Results: Nine patients (age 69 ± 9 years; all males) met inclusion criteria. 0.9% patients required HOP during VT ablation. Mean left ventricular ejection fraction was 34 ± 14% and majority (78%) had ischemic cardiomyopathy. The location of scar was LV apex in 3 patients, inferior wall in 4, septum in 1 and RVOT in 1. HOP was used to successfully entrain VT in 5 patients yielding isthmus sites in 4 and entrance/exit sites in 2 (Figure). VT terminated with radiofrequency ablation at these sites identified with HOP. In the remaining 3 patients, HOP identified scar locations with delayed exit (long stimulus to QRS). Acute procedural success (VT non-inducibility) was achieved in all without any adverse events. Over a mean follow up period of 1.2 ± 1.2 years, only one patient experienced VT recurrence requiring repeat ablation during which the same location (RVOT) was targeted.

Conclusion: In patients with dense scar which is unexcitable with SO, HOP can provide valuable localizing information and facilitate successful VT ablation by identifying critical components of the reentrant circuit.

PO-636-03

ELECTROPHYSIOLOGICAL FINDINGS DURING ENDOCARDIAL LEFT ATRIAL MAPPING FOLLOWING SURGICAL EPICARDIAL AF ABlation

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Background: Hybrid surgical ablation of AF using bipolar ablation clamps offers the advantage of targeting epicardial aspects of the left atrial posterior wall (LAPW) and pulmonary vein (PV) antrum.

Objective: We sought to assess the durability of surgical epicardial ablation of PV and LAPW in patients with long standing persistent AF (LSPAF).

Methods: We conducted a retrospective analysis of all patients with LSPAF that underwent hybrid convergent ablation (surgical PV ablation plus endocardial catheter ablation) and LAA clipping at our institution. Patients were divided in group 1 (surgical PV isolation + LAPW isolation) and group 2 (surgical LAPW isolation only). Durability of the surgical ablation lesion sets were examined during the endocardial catheter ablation using standing electrophysiological criteria.

Results: A total of 43 patients were included in the cohort. Mean age was 64.9 ± 8.9 years and 62.8% were males. Endocardial LA mapping was performed within 2.6 ± 1.7 months of the epicardial ablation procedure. Group 1 (PV+LAPW) included 36 (83.7%) patients and group 2 (PV only) included 7 (16.3%). 37.3% of patients that underwent surgical PVI had evidence of PV reconnection with majority (68.8%) having right pulmonary vein (RPV) reconnection. LAPW reconnection was noted in a total of 14 (32.5%) of patients. Additional endocardial ablation let to
ABLATION OF ATRIAL FIBRILLATION BEYOND PULMONARY VEIN ISOLATION: DO ADDITIONAL ABLATION LESIONS IMPACT LEFT ATRIAL FUNCTION?
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Background: Electrical isolation of pulmonary veins (PVI) is a cornerstone for Atrial Fibrillation (AF) ablation therapy; Elimination of non-pulmonary vein (NPV) triggers in addition to PVI was shown to decrease long-term AF recurrence. The overall effect of AF ablation on left atrial (LA) function is poorly understood and it is unknown if additional ablation lesions can affect it.

Objective: Our aim was to determine if LA function is different in patients after extensive LA ablation compared to PVI only. We hypothesized that addition of NPV ablation lesions in LA do not further deteriorate LA function compared to PVI alone.

Methods: Out of consecutive 994 patients who underwent AF ablation at our center in years 2018-2019, we included 68 patients in our retrospective analysis who had echocardiograms (TTE) performed within 12 months prior to AF ablation and 1-12 months after. Redo ablations, history of mitral valve interventions were excluded. Patients were stratified into 2 groups: PVI only and PVI with additional LA ablation lesions (PVI+). Primary outcome was LA reservoir strain (LASF). We applied non-inferiority analysis with 90% CI for an overall alpha level of 0.05. Mean LASF in patients after AF ablation is reported ±9%. We used a conservative 6% to define non-inferiority as a change in LASF.

Results: Patients in our study cohort had higher rates of history of HTN, HFrEF, DM, HLD, ESRD compared to all patients after extensive LA ablation. A higher rate of paroxysmal AF in the PVI only group was noted (70% vs 30%). The PVI+ group was observed to have a slightly higher increase in LASF compared to PVI alone (5.0% vs 4.3%), with 90% CI (-4.2 to 2.9). The upper bound for the true difference of 2.9% did not cross the pre-set margin of 6% (p<0.01 for test of non-inferiority). These findings were consistent when the LASr was adjusted for age, sex, hx of CAD, HLD, paroxysmal vs persistent AF, rhythm at pre-procedure TTE in a multivariable linear regression model, 90% CI (-5.46; 2.04), p<0.01.

Conclusion: LA functional improvement evaluated by LASr is statistically non-inferior after PVI with additional LA ablation lesions compared to PVI alone. These findings were confirmed when adjusted for confounding clinical variables.

DOES RENAL ARTERY DENERVATION IN ADDITION TO PVI REDUCE AF BURDEN? RESULTS OF THE MULTICENTER ERADICATE-AF RANDOMIZED CLINICAL TRIAL
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