ablated for AFL (65.5yrs, 67.3% male). 81.4% (35/43) of the maps generated were late activation timing (LAT) and 16.3% (7/43) were peak-to-peak voltage maps. Median total mapping points collected and used were 7008 (IQR 3374-16811) and 1654 (IQR 900-2286), respectively, in a median of 11 (IQR 6-17) min per map. HD Grid identified substrates such as, low voltage (82.4%; 42/51) and fibrosis/scar (66.7%; 34/51) and detected signals of interest not identified by the ablation catheter in 90.2% (37/41) of subjects. Ablation strategies included targeting the mitral isthmus (38.8%; 19/49), roof line (36.7%; 18/49), and cavotricuspid isthmus (26.5%; 13/49). The mean procedure time was 171.4 ± 60.3 min with a fluoroscopy time of 13.7 ± 10.6 min and RF time of 36.1 ± 37.3 min. AFL was terminated in 93.9% (46/49) and non-inducible in 94.1% (16/17) of subjects. 84% (21/25) were free from recurrent AF/AT/AFL at 12 months. 2 SAEs, 7 SADEs, and 1 ADE were experienced in 17.6% (9/51) of subjects with none related to HD Grid.

Conclusion: The results of this study support the utility of the Advisor™ HD Grid mapping catheter in generating LAT and voltage maps based on high-quality EGMs and for guiding efficient and effective ablation strategies to treat AFL.

**PO-635-04**

**“FREEZE THE MOVING TARGET” - CRYOABLATION FOR ARRHYTHMIAS ARISING FROM THE RIGHT VENTRICULAR MODERATOR BAND AND PAPILLARY MUSCLE**

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Background: The right ventricular moderator band and papillary muscles (RV MB-PM) are an uncommon source of ventricular arrhythmias (VA) and may present with hemodynamically unstable VA. Given its anatomy, sometimes it is challenging to achieve catheter stability.

Objective: To study procedural success using cryoablation for VA arising from RV MB-PM.

Methods: We reviewed our institutional VA ablation database during last 3 years to identify those in whom cryoablation was used to treat VAs arising from the RV MB-PM.

Results: Of 521 VA ablations during this period, 5 patients underwent cryoablation of VA arising from the RV PM-MB. Three patients had structural heart disease with mean left ventricular ejection fraction (LVEF) of 44%. Two patients presented with VT storm, and others presented with increasing VA burden. Three patients had prior failed radiofrequency ventricular ablations. RF delivery was attempted in 2 cases but was limited due to either catheter instability or hemodynamically unstable VA. Purkinje potentials were seen pre-QRS in 2 patients who had activation mapping, and at the best pace map in others. A median of 3 cryoablation lesions were delivered for 240 to 360 ms duration with a target temperature of -80°C. Acute VA suppression was achieved in all patients with no recurrence with post procedure provocation. No major complication occurred. Patients were followed up for median of 396 days, 3 had no VT or PVC recurrence, 1 was lost follow up, and 1 had only non-sustained VT recorded via ICD, with no sustained VT, which was the original presenting rhythm.

Conclusion: Cryoablation is safe and efficacious to treat VA arising from RV MB-PM.

**PO-635-05**

**VENTRICULAR ARRHYTHMIA ABLATION WITHOUT FLUOROSCOPIC UTILIZATION - A SINGLE CENTER EXPERIENCE**

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Background: Utilization of fluoroscopy is common practice for ventricular arrhythmia (VA) ablation, but its use can be associated with radiation induced morbidities to both the patient and providers. Intracardiac Echocardiogram (ICE) can be helpful to minimize radiation exposure while not compromising procedural safety.

Objective: To study feasibility of fluoroscopy free (FF) VA ablation using ICE.

Methods: We performed a retrospective analysis of our institutional data on VA ablation performed by three providers between August 2019 to October 2021 to analyze procedural success and safety on FF VA ablation.

Results: Among total 70 patients who underwent intended FF VA ablation, 60 were FF (VT = 29, PVC = 31). Intracardiac echocardiography (ICE) and 3-dimensional mapping were utilized for all cases. For left sided mapping and ablation, transseptal approach was utilized in 27 (45%) and retrograde aortic approach was used in 25 (41.6%). Radiofrequency ablation was used in all patients, and concomitant cryoablation was used in 2 (6.4%) patients who underwent PVC ablation. Acute procedural success (defined as elimination of the clinical VA) was 96.5% in VT group and 90.3% in PVC group. Among remaining 10 VA ablation patients, 5 patients converted to fluoroscopy use due to coronary angiography (VT = 2, PVC = 3) and three patients due to cryoablation (VT = 1, PVC = 2) due to ablation site in close proximity to conduction system or coronary artery. Among patients who had VT ablation, 3 had repeat VT ablation during follow up (271 days +/- 250) and zero patient among PVC ablation group needed repeat ablation during follow up (328 days +/- 235). Importantly, there were no procedure related complication in all FF VA ablation patients.
Conclusion: Utilizing ICE and 3-dimensional mapping in the absence of fluoroscopy is an effective and safe technique for VA ablation.

PO-635-06

IMPACT OF PRIOR ABLATION STRATEGIES ON PROCEDURE EFFICIENCY AND ABLATION STRATEGY IN REPEAT PROCEDURES FOR ATRIAL FIBRILLATION

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Background: Many ablation strategies, such as box isolation and linear ablation, have been proposed to improve outcomes in atrial fibrillation (AF) ablation. While the ablation of non-pulmonary vein (PV) targets has gained considerable traction, whether these strategies should be incorporated at the index procedure remain to be addressed.

Objective: To examine the correlation between ablation strategies at index procedure and the need for creation of non-PV lesion sets at repeat procedure.

Methods: Data from patients who underwent a first repeat procedure for AF were prospectively collected between February to September of 2021. Where the history of index procedure was available, procedure characteristics and ablation strategies at repeat procedure were grouped and compared based on ablation strategy at index procedure.

Results: A total of 343 patients [Paroxysmal (PAF): 209, Persistent (PersAF): 134] were included in this analysis. Patients were grouped into PV, PV+linear (including posterior wall isolation), and PV+other (including focal, rotor, alcohol ablation, and hybrid procedure) based on ablation strategy at index procedure. Non-PV lesion sets were delivered in 52.6% (n = 110) and 76.9% (n = 103) of the PAF and PersAF cases at repeat procedure. For PAF, elimination of non-PV triggers at the redo procedure was documented in 47.6%, 94.4%, and 83.3% of the PV, PV+linear, and PV+other group, respectively (P < 0.05). For PersAF, 73.1%, 83.3%, and 90.9% of the PV, PV+linear, and PV+other group received lesion sets beyond PV isolation at redo (Table 1). More non-PV lesions were delivered per patient at the repeat procedure in the index PV+linear group. At the end of the redo procedure, sinus rhythm was achieved in a similar (p = 0.05) proportion of patients across groups in both PAF and PersAF (Table 1).

Conclusion: Incorporation of non-PV lesions at index procedure was associated with a more extensive ablation strategy at subsequent repeat procedures. Although a higher percentage of the patients in the index PV+linear and PV+other groups achieved sinus rhythm at the end of the repeat procedure, it did not appear to correlate with the number of non-PV lesion sets created. A larger randomized study may be warranted to investigate long-term clinical outcomes following extensive ablation at index and repeat ablation.

PO-635-07

EVALUATION OF A 3-DIMENSIONAL SUBSTRATE WITH WIDE BIPOLAR ELECTRODE SPACING IN ISCHEMIC SCARS

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Background: Wide bipolar interelectrode spacing can aid in estimating a 3-dimension substrate due to far-field potential sensing.

Objective: This study investigated the relationship between electrograms and myocardial wall thickness collected by wide bipolar interelectrode spacing and identified a heterogeneous scar within a dense scar.

Methods: Three of twenty-four consecutive cases of ventricular tachycardia ablation that met the following criteria were analyzed: (1) old myocardial infarction patients with a dense scar with wall thickness >2 mm and (2) patients with voltage maps created using HD Grid Mapping Catheter (Abbott Laboratories, Abbott Park, IL) during sinus rhythm. Along with the usual 3 mm interelectrode bipolar spacing, voltage maps were made with 6 mm interelectrode spacing. Computed tomography images imported into the EnSite mapping system were merged with voltage maps (Figure 1A). Wall thickness was measured manually at each corresponding point in scar areas with wall thickness of 4 mm or less.

Results: Voltage amplitudes collected by 6 mm interelectrode spacing were more strongly correlated with wall thickness than those collected by 3 mm interelectrode spacing (r = 0.708, p < 0.01; vs r = 0.247, p < 0.01). The regression line is shown in Figure 1B. Four of the five induced ventricular tachycardias in the

Table 1: Frequency of ablation of non-PV target at repeat procedure based on ablation strategy at index procedure. *one-way ANOVA P<0.05