ablation. We propose the following stepwise algorithm for SP modification: 1) Lower TOK and near floor of CS ostium, if still inducible 2) Inside CS ostium (near roof), is still inducible 3) APD to confirm right vs. left sided SP - high up ablation vs. trans-septal left sided ablation.

A: LAO 40 degree  B: RAO 30 degree

PO-634-03

RIPPLE MAPPING: A PRACTICAL APPROACH TO DIFFERENTIATE VENTRICULAR SCAR FROM BORDER-ZONE SLOW CONDUCTION USING CARTO RIPPLE MAPPING DURING VENTRICULAR TACHYCARDIA ABLATION

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Background: Areas of ventricular scar and border-zone slow conduction are often highlighted on a bipolar voltage map with generalized values 0.5mV-1.5mV. The true voltage that differentiates regions of conducting tissue from non-conducting scar is unknown. Ripple mapping (RM) is a core feature within CARTO3 that displays the bipolar electrogram amplitude from each point as a white moving bar. Conducting scar is seen as areas supporting Ripple activation, and electrical scar as areas devoid of Ripple activation.

Objective: We describe how CARTO RM were used to differentiate areas of putative ventricular scar from conducting tissue during VT ablation.

Methods: Dense bipolar voltage maps were created (Pentaray catheter, pacing 80-100bpm) and presented as a single value (e.g. 0.5mV-0.5mV) to binarize the color display (red and purple). RM were superimposed on the voltage map and played above a pre-set noise threshold (>0.05mV) to minimize artifact. The voltage map mV limit was sequentially reduced until only those areas devoid of Ripple bars appeared red to define scar threshold (Figure). The surrounding border-zone supporting ripple activation thus appeared purple. We performed a retrospective analysis of scar thresholds from a series of RM guided VT ablations.

Results: 11 consecutive pts (LVEF 34.5±7.6%, 9 endocardial post-infarct, 2 epicardial non-ischemic) underwent VT ablation (median 20 days since last VT (IQR 12-37)). Bipolar voltage mapping (6334±2817 points, median shell area 247cm²), revealed voltages <0.5mV covered a median 10% (IQR 6-16%) of the shell. The scar threshold, defined using RM, was median 0.2mV (range 0.12mV - 0.3mV) and covered only median 3% (IQR 2.5-6%) of the entire shell. VT was mappable in 4 patients, and the isthmus was bordered by tissue below the same scar threshold as found in normal rhythm. The border-zone was homogenized with ablation (40-50W, median 30 mins (IQR 23-27), and clinical VT was non-inducible in all, and 10 patients (91%) remain VT-free at median 90-day follow-up (IQR 23-139).

Conclusion: The bipolar voltage that differentiates putative scar from bordering conducting tissue is unique to each patient, and far lower than 0.5mV-1.5mV. RM presents a practical approach to individualize scar delineation and visualize the border-zone activation to guide ablation.

PO-634-04

FLUOROLESS CRYOBALLOON ABLATION FOR PULMONARY VEIN AND LEFT ATRIAL POSTERIOR WALL ISOLATION IN PATIENTS WITH PERSISTENT ATRIAL FIBRILLATION: A SINGLE CENTER EXPERIENCE

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Background: Fluoroless electrophysiology procedure techniques have gained popularity for safely minimizing radiation exposure to patients and operators. While cryoablation for concomitant pulmonary vein isolation (PVI) and left atrial posterior wall isolation (PWI) have shown long-term efficacy in patients with persistent atrial fibrillation (AF), no studies have assessed the efficacy of the cryoablation utilizing a fluoroless technique.

Objective: To assess outcomes of fluoroless cryoablation for concomitant PVI and PWI in patients with persistent AF.

Methods: From March 2019 to September 2021, 28 consecutive patients with persistent AF with no prior AF ablations who underwent concomitant fluoroless PVI and PWI were included. Patient demographics, procedural details including the procedural time, and follow-ups were retrospectively analyzed (Tables 1 and 2).

Results: Fluoroless cryoablation for concomitant PVI and PWI was successfully achieved in 24 subjects (85.7%). Radiofrequency ablation was required in four patients (14.3%) to achieve PVI/PWI or avoid phrenic nerve injury. The average procedural time was 285 days, 3 patients (10.7%) had recurrence of AF after 2 patients (7.1%) had new onset of atrial flutter.

Conclusion: Fluoroless cryoballoon ablation for PVI and PWI is a safe and effective technique for first time ablation in patients with persistent AF.