We sought to determine mortality and in-hospital outcomes. The effect of catheter ablation (CA) on mortality in CS is associated with poor outcomes. Cardiac sarcoidosis (CS) is associated with poor outcomes. The effect of catheter ablation (CA) on mortality in CS has not been well studied.

**Conclusion:** The novel PVC detection algorithm was able to achieve 99.7% specificity while detecting 75.8% of true PVCs in the ICM sensed signal. Prospective evaluation during continuous monitoring is needed to confirm these findings.

**Performance Measures**

<table>
<thead>
<tr>
<th></th>
<th>Training</th>
<th>Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>78.6%</td>
<td>75.8%</td>
</tr>
<tr>
<td>Specificity</td>
<td>99.5%</td>
<td>99.7%</td>
</tr>
<tr>
<td>PPV</td>
<td>70.8%</td>
<td>82.7%</td>
</tr>
<tr>
<td>NPV</td>
<td>99.7%</td>
<td>99.5%</td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td>0.81</td>
<td>0.83</td>
</tr>
</tbody>
</table>

**POSTER PO-634:**

**Posters: Catheter Ablation at Pod 6**

Friday, April 29, 2022

3:00 PM - 5:00 PM

**PO-634-01**

OUTCOMES OF CATHETER ABLATION FOR VENTRICULAR TACHYCARDIA IN PATIENTS WITH SARCOIDOSIS: INSIGHTS FROM THE NATIONAL INPATIENT SAMPLE DATABASE (2002-2018)

Jian Liang Tan MD; Chengyue Jin MD; Justin Z. Lee MD; john gaughan MS, PhD, MBA; Sei Iwai MD, FHRS and Andrea M. Russo MD, FHRS

**Background:** Cardiac sarcoidosis (CS) is associated with poor outcomes. The effect of catheter ablation (CA) on mortality in CS has not been well studied.

**Objective:** We sought to determine mortality and in-hospital outcomes of sarcoidosis-related ventricular tachycardia (VT), and incidence and predictors of peri-procedural complications associated with the CA procedure.

**Methods:** We queried the 2002 - 2018 National Inpatient Sample (NIS) database to identify patients age ≥18 with a primary diagnosis of VT and who also had a secondary diagnosis of prior history of sarcoidosis using ICD-9 and ICD-10-CM diagnosis codes. Patients with sarcoidosis-related VT treated with CA were identified using ICD-9 and ICD-10-PCS codes. 1:3 propensity score matching (PSM) was used to compare patient characteristics, mortality, in-hospital outcomes, and hospital costs between CA and medically managed groups.

**Results:** Of 2331 sarcoidosis patients with VT, 92 (3.9%) underwent CA. Patients who underwent CA were male predominant (70.7%). After PSM, we identified 77 CA cases and 231 medically managed cases. Compared with patients who were medically managed, there was a lower in-hospital mortality rate (8.7% vs. 13.3%, p=0.03) and higher mean hospital cost ($18,709 ± 29,447 vs. $40,824 ± 17,053, p<0.001) in patients who underwent CA. There were no significant differences in acute heart failure (34.6% vs 23.4%, P=0.07) and mean length of hospital stay (7.0 ± 8.9 vs 6.4 ± 6.2, P=0.48) between the two groups. The most common complications were pericardial drainage (5.4%), followed by postoperative hemorrhage (4.4%), cardiac tamponade (3.3%), and accidental puncture peri-procedure (3.3%). Independent predictors of in-hospital mortality or procedural complications among patients who received CA included congestive heart failure (odds ratio [OR], 11.2; 95% CI, 1.4-91.7) and mild to moderate renal disease (OR, 4.3; 95% CI, 1.1-16.5).

**Conclusion:** Our study suggests that the use of CA as an adjunct therapy for sarcoidosis-related VT may be associated with lower in-hospital mortality but higher mean hospital costs compared to medical management. As with all retrospective analyses, selection bias cannot be excluded, and prospective investigation is recommended to better evaluate the benefits and risks of VT ablation in patients with CS.

**PO-634-02**

SLOW PATHWAY MODIFICATION FOR ATRIOVENTRICULAR NODAL RE-ENTRANT TACHYCARDIA INSIDE CORONARY SINUS OSTIUM UNDER CONVENTIONAL FLUOROSCOPY: A PILOT STUDY

Debabrata Bera MD

**Background:** Anatomical slow pathway (SP) modification in the lower triangle of Koch (TOK,M2-P1 region) is the conventional mode of radiofrequency ablation (RFA) for atrioventricular nodal re-entrant tachycardia (AVNRT). Sometimes, AVNRT can still remain inducible.

**Objective:** To see whether ablation inside CS ostium is safe and feasible

**Methods:** We retrospectively analyzed AVNRT cases where ablation under fluoroscopy in lower TOK was unsuccessful. A maneuver with timed atrial premature depolarisation (APD) from 2-3 cm inside coronary sinus (CS) was performed to prove/exclude left sided SP inputs. Then, RFA was attempted just inside CS ostium near roof (within 1 cm).

**Results:** Among 130 AVNRT cases, ablation in TOK was initially unsuccessful in 11. After excluding 3 cases with anatomic variability, 8 cases (including 2 with left sided SP input) were subjected to ablation just inside CS ostium near the roof. Among the 8 cases - Age: 33±17 years, Male = 4. With this novel approach 7/8 cases (including 2 left sided extensions) had acute success with a median of 3 RF lesions. In 1 case (right sided SP), this approach was unsuccessful and high up (M1-A2) ablation was required.

**Conclusion:** SP modification just inside CS ostium appears to be a safe and effective strategy for cases where conventional ablation in lower TOK fails. Need for high up ablation can be avoided minimizing the chance of AV nodal injury. This can also obviate the need for left sided
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.

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

Dibbendhu Khanra MD, CCDS; Peter Calvert MBChB; Susan Hughes; Paul Wright CVT; Saagar N. Mahida MBChB, PhD; Mark Hall MBBS; Derick Todd; Dhiraj Gupta MBBS, MD and Vishal Luther MBBS

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 devoid of 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 presents a practical approach to individualize scar delineation and visualize the border-zone activation to guide ablation.

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

David Chang MD; Gary Peng; Uyanga Batnyam MD; Esseim Sharma MD; Sunil Kapur MD; Bruce A. Koplan MD, MPH, FHRS; David T. Martin MD, FHRS, CCDS; William H. Sauer MD, FHRS, CCDS; Usha B. Tedrow MD, MS, FHRS; Paul C. Zei MD, PhD, FHRS and Thomas M. Tadros MD, MPH

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 4 patients (14.3%) to achieve PVI/PWI or avoid phrenic nerve injury. The average procedural time was 150±49 minutes and there were no procedural complications. After 357±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.