the lesions matured over time (Fig. 2). No significant difference in mean PFA lesion depth between 1 week and 6 weeks suggests lesion stabilization.

**Conclusion:** MRI demonstrates significantly different tissue responses to PFA when compared to RFA, with implications for PFA protocol and associated MRI monitoring optimization.

**References:**

**CA-534-04**

**UNDERSTANDING THE RISK OF CORONARY ARTERY SPASM DURING PULSED FIELD ABLATION**

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**Background:** Pulsed Field Ablation (PFA) has gained prominence by virtue of its proclivity to preferentially ablate myocardial tissue. Based on its safety, efficacy and efficiency, after regulatory approval of one multielectrode PFA catheter, there has been rapid uptake into clinical practice in various European centers. In addition, multiple other PFA catheters are under investigation. While the overall safety profile of PFA is quite favorable compared to conventional thermal ablation, it is possible that PFA may yet result in unusual complications. Indeed, a recent case of coronary spasm during off-label ablation along the mitral isthmus was recently reported.

**Objective:** To study the potential for coronary spasm during focal endo- or epi-cardial PFA in swine ventricles.

**Methods:** During a series of endocardial and epicardial dose-finding evaluations, 2 kV bipolar/biphasic PFA pulses were delivered using an 8 Fr focal catheter (Farapoint, Boston Scientific). To evaluate vasospasm, we performed coronary angiography (CAG) after purposefully delivering PF in close proximity to epicardial coronary arteries. After sub-xiphoid pericardial access, the catheter was positioned immediately adjacent to the left anterior descending artery (LAD) in one swine. In two other swine, the catheter was positioned endocardially, immediately above the right coronary artery (RCA) at the proximal cavo-tricuspid isthmus in one swine and in the pulmonary artery trunk near the LAD in the other swine.

**Results:** In the swine with epicardial PFA, immediately after the ablation pulses, ST-elevation in the precordial leads was observed. Repeat CAG revealed spasm along the length of the catheter-tip. The spasm gradually recovered over 50 minutes and the animal was successfully survived. In the other 2 swine with endocardial PFA, no ST-changes were observed for either applications. However, CAG demonstrated coronary spasm of the RCA, but not in the LAD. Resolution of RCA spasm was not documented by repeat CAG. These swine was also successfully survived.

**Conclusion:** Coronary spasm can occur when PFA is performed in close proximity to large epicardial vessels in swine. Further detailed assessments in different animal models are needed to understand its incidence, dependence on proximity and location as well as therapeutic approaches.

**ABSTRACT BS-526:**

**Extrinsic factors and mechanisms contributing to cardiac arrhythmias**

**Sunday, May 1, 2022**

**8:00 AM - 9:00 AM**

**BS-526-01**

**THE EFFECT OF CHRONIC NICOTINE EXPOSURE ON CARDIAC ELECTROPHYSIOLOGY IN THE RABBIT HEART**