

**Study Title:** Advanced Cardiovascular Magnetic Resonance Imaging in Boxer Dogs with Arrhythmogenic Right Ventricular Cardiomyopathy

**Purpose of Study/Background/Objectives:**

Arrhythmogenic right ventricular cardiomyopathy (ARVC) is a myocardial disease in Boxer dogs characterized by myocardial fibrofatty replacement, creating an arrhythmic substrate for ventricular arrhythmias that can lead to sudden death. Diagnosis of ARVC in Boxers is challenging, and presumptive based on the identification of >300 ventricular premature complexes (VPCs) in 24 hours, the absence of other arrhythmogenic disease, and familial and clinical history. Cardiac magnetic resonance imaging (CMR) is the preferred imaging technique in humans with ARVC for evaluation of ventricular structure and function and noninvasive tissue characterization. CMR findings guide risk stratification and management decisions in humans. The goal of this study is to describe CMR findings in healthy Boxers and Boxers with ARVC, which may help guide prognostication and management of this disease in the future.

**Inclusion Criteria:**

- Healthy adult Boxer dog controls > 1 year of age
- Boxer dogs with diagnosis of ARVC based on detection of > 300 VPCs per day in the absence of other cardiac or systemic disease

**Exclusion Criteria:**

- Echocardiographic evidence of LV dilation or systolic dysfunction (based on breed reference ranges)
- Treatment with any cardiac medications (exception anti-arrhythmic drugs)
- Any systemic illness that may limit survival

**Eligibility Diagnostics:**

- Physical exam including blood pressure measurement
- Sample collection (complete blood count, chemistry panel)
- Echocardiogram
- 24-hour ambulatory electrocardiogram (Holter monitor)

**Treatment/Protocol:**

- Once enrolled, the participant will be scheduled for a drop-off appointment to undergo general anesthesia for a CMR. The participant will be recovered from anesthesia and discharged as an outpatient after recovery.

**Owner Commitments:**

- If eligibility diagnostics have already been performed, visit clinical site once for CMR
- If eligibility diagnostics have not yet been performed, visit clinical site twice for diagnostics and again for CMR

**Compensation:** No direct compensation. Cost of study diagnostics are covered by the project. All examination, imaging, and bloodwork results are provided to the owner and the dog's primary care veterinarian.

**Contact Information:** [VTHCardiology@vetmed.illinois.edu](mailto:VTHCardiology@vetmed.illinois.edu)

