

Arrhythmogenic Right Ventricular Cardiomyopathy (ARVC)



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General Information

Arrhythmogenic right ventricular cardiomyopathy (ARVC), formerly known as Boxer cardiomyopathy, runs in families of Boxers, and has been reported in humans and cats as well. It has been shown to be genetic, so affected animals should not be bred. Affected animals suffer from ventricular arrhythmias, or abnormal heart beats which originate from the right ventricle (one of the bottom chambers of the heart). In addition, affected animals may also have enlargement of the right side of the heart, systolic dysfunction (decreased ability to pump blood forward to the body), and congestive heart failure. Often the first sign that is seen is sudden death during exercise or even while sleeping.

Diagnosis

The diagnosis of ARVC is made by electrocardiography (ECG) and echocardiography (ultrasound of the heart). The initial ECG often documents the presence of the abnormal beats, and an additional 24 hour ECG (Holter monitor) helps to evaluate the frequency and severity of the abnormal heart beats over 24 hours at home. An echocardiogram is performed to evaluate for other concurrent heart diseases and to evaluate heart function.

Complications and Sequelae

Single abnormal beats rarely cause any clinical problems. However, if multiples of these beats occur in a row at a fast rate, the heart does not have sufficient time to fill with blood or pump enough blood to the body. This leads to signs of syncope (collapse), weakness, exercise intolerance, and even sudden death. In addition, these patients can develop signs of right-sided heart failure (abdominal distension from fluid build-up) or left-sided heart failure (coughing, increased respiratory rate and effort, or difficulty breathing).

Treatment

The cornerstone of treatment for ARVC is anti-arrhythmic therapy. Sotalol, a beta blocker and anti-arrhythmic, is the most common drug used. Common side effects include fatigue, dizziness, and loss of appetite or nausea. Other anti-arrhythmics which may be used include mexiletine or amiodarone. If signs of systolic dysfunction and heart failure are present, additional medications, such as angiotensin converting enzyme (ACE) inhibitors and diuretics may be used.

Prognosis

ARVC is a life long disease that will eventually lead to the death of your pet. Life expectancies are extremely variable, but with medication and monitoring, many pets enjoy years of quality life. Unfortunately, the disease can also be so severe that sudden death occurs even with treatment. Periodic echocardiograms and holter monitors help to monitor for disease progression and to assess medications.

