



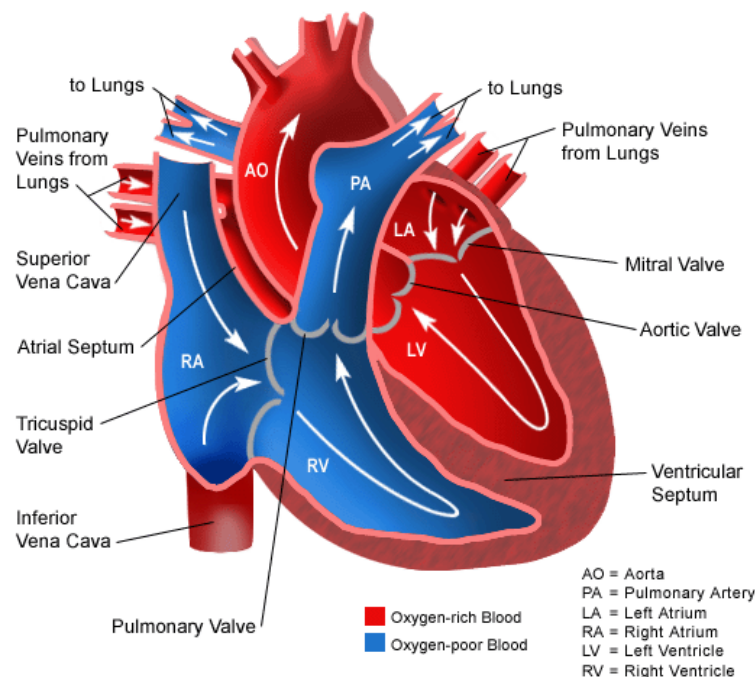
Arrhythmogenic Right Ventricular Cardiomyopathy

BRIEFLY, HOW DOES THE HEART WORK?

The heart has four chambers. The upper chambers are called atria. One chamber is called an atrium, and the lower chambers are called ventricles. In addition to the upper and lower chambers, the heart is also considered to have a right and left side.

Blood flows from the body into the right atrium. It is stored there briefly, then pumped into the right ventricle. The right ventricle pumps blood into the lungs, where it receives oxygen. It flows from the lungs into the left atrium; it is held here briefly before going into the left ventricle. The left ventricle contains the largest muscle of the heart so the blood can be pumped out to all parts of the body.

Movement of blood results from electrical impulses that are transmitted from the brain to the heart. The impulses not only direct the heart to beat but also to maintain a steady, regular rhythm.





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WHAT IS ARRHYTHMOGENIC RIGHT VENTRICULAR CARDIOMYOPATHY?

In ARVC, the electrical impulses are disturbed, and the heart beats erratically, which is called an arrhythmia.

Although there are several kinds of arrhythmias, the most common in ARVC is called a ventricular premature contraction (VPC). Instead of being in a steady, regular rhythm, the ventricle contracts earlier than it should. The result is a heartbeat that does not have a corresponding pulse, unlike the normally functioning heart, where there is a pulse for every beat.

A boxer with only occasional VPCs probably will not show any symptoms of heart disease. But if multiple, successive VPCs occur – what experts call a ‘run’ of VPCs – the heart cannot produce a normal, effective contraction, which results in a stoppage of blood flow to the brain and other vital organs, causing collapse. A prolonged run of VPCs can lead to complete cardiac arrest and death, unless the heart resumes a normal pattern of contractions.

WHAT ARE THE CLINICAL SIGNS OF ARVC?

Clinical signs are variable and often animals will not show any abnormalities until their condition is severe.

Clinical signs may include;

- Collapse
- Change in heart rhythm
- Cardiac arrest

And signs of congestive heart failure (rarely associated with ARVC) being;

- Change in heart rate or rhythm (heart murmur)
- Increased or laboured respiration at rest (normal respiratory rate is <30 breaths per minute when sleeping)
- Increased coughing
- Decreased appetite
- Lethargy/weakness or fainting spells
- Distended/bloated abdomen





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HOW IS ARVC DIAGNOSED?

The best way to diagnose ARVC is to perform a 24 hour ECG (electrocardiogram).

A 24 hour ECG (Holter monitor examination) records the electrical activity of the animal's heart over an extended time and is the most sensitive tool for screening for VPCs. The monitor is strapped to the animal and electrodes are placed on the chest while the animal goes about its normal activities. The total number of beats, including the abnormal VPCs are recorded. Single VPCs are far less dangerous than runs of VPCs.

Occasionally an echocardiogram (heart ultrasound) may be recommended. This will show clearly the size of each heart chamber, the thickness of heart walls, a visual on valves and a look at the direction and velocity of blood flow through the chambers.

The combination of all of these tests gives us our best evaluation of the animal's heart function, however if cost considerations prohibit us performing all of them, two or three will provide much valuable information.

IS THERE TREATMENT FOR ARVC?

Medications for ARVC consist of antiarrhythmics to control the abnormal electrical activity (i.e. sotalol) if this is causing clinical signs and hopefully prevent any fatal arrhythmogenic episodes.

If congestive heart failure is present then diuretics (frusemide) to help reabsorb fluid from the lungs would be prescribed. Other medications that improve the ability of the heart to contract (i.e. pimobendin) may also be recommended. Some patients will need to have fluid physically removed from the abdomen or chest cavity depending on the type of heart failure.

It is helpful to keep a record of your pet's respiratory rate (one breath = in and out) when they are sleeping so that your veterinarian can identify any changes in your pet's normal breathing pattern (normal respiratory rate when sleeping is less than 30 breaths in a minute).

