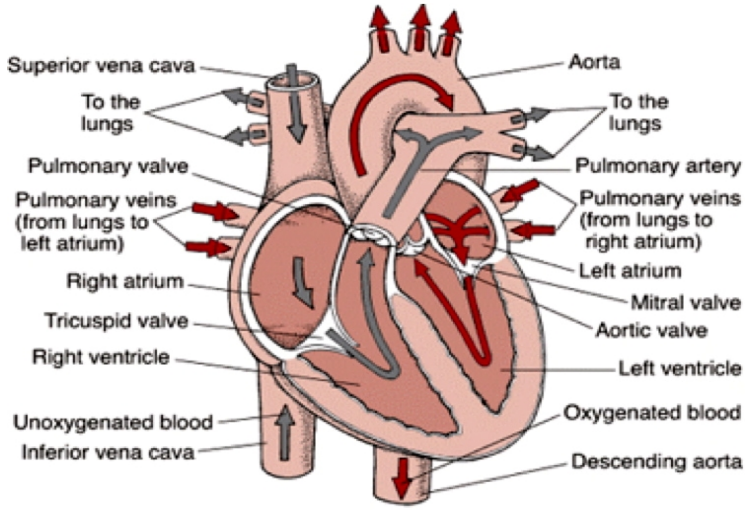
ROCKY MOUNTAIN
VETERINARY CARDIOLOGY, P.C.

DILATED CARDIOMYOPATHY

OUTLINE OF A NORMAL HEART



Your dog has been diagnosed with dilated cardiomyopathy (DCM). This disease is caused by a disease of the heart muscle that has led to diminished contractile function. There are many potential causes of the disease but the vast majority of clinical cases are "idiopathic" meaning that the cause is unknown. The only clinically significant cause we can identify is taurine deficiency. Taurine is an amino acid (building block of protein) that is metabolized aberrantly in some dogs. It is very rare but when identified, is partially treatable. Unfortunately, most other cases of DCM slowly progress to congestive heart failure despite treatment.

In order to understand how this disease may affect your dog, it is important to understand normal circulation in the heart. Blood drains from the body into the right atrium where it passes through the tricuspid valve and into the right ventricle. From here, blood is pumped into the pulmonary artery and subsequently to the lungs where it picks up oxygen. The oxygenated blood then drains passively into the left atrium, through the mitral valve, and into the left ventricle. The left ventricle then pumps the blood through the aorta and back to the body.

In dogs with DCM, the myocardial (heart muscle function) progressively worsens which leads to heart enlargement and increased intra-cardiac pressures. The disease often affects the left ventricle primarily although the right ventricle is often concurrently diseased. As the left ventricular pressure increases, the left atrial pressure increases. As the pressure in this chamber rises, it is transmitted back to the blood vessels in the lungs and, if the pressure is high enough, fluid can exude into the alveoli (air sacs) in the lungs. This is called pulmonary edema or congestive heart failure. In many dogs this causes a cough. However, some dogs don't cough when this occurs. Instead, they breathe faster (more than 40 breaths per minute) or with too much effort.

Dogs with DCM should be monitored at home for a cough or an increase in respiratory rate (greater than 40 breaths per minute) or effort. If any of these occur, a chest x-ray should be taken to evaluate for the presence of pulmonary edema.

Depending on the stage of disease your dog is at, medications may be prescribed. Most cardiac medications can adversely affect the kidneys. For this reason, it is important to monitor kidney function with blood tests as new medications are introduced or dosage changes are made.

An echocardiogram (ultrasound of the heart) is necessary for definitive diagnosis of dilated cardiomyopathy. An echo allows us to look on the inside of the heart and assess the heart's function. It will be repeated periodically over the course of your dog's disease to monitor for significant changes in heart function. Chest x-rays are often taken to evaluate for the presence of pulmonary edema. Some dogs develop rhythm disturbances secondary to their enlarged hearts. In these cases, an electrocardiogram (ECG) is done.

Thankfully, most dogs with DCM feel good as long as their congestive heart failure is controlled. I will work closely with your veterinarian to ensure that your dog gets the best care possible.

Rocky Mountain Veterinary Cardiology, PC