

Myxomatous Mitral Valve Degeneration

Myxomatous mitral valve degeneration (MMVD) is the most common acquired heart disease in small breed dogs, but can sometimes affect large breed dogs. MMVD is the primary cause of a new murmur in an older dog.

The mitral valve is located between the left atrium (upper chamber) and the left ventricle (lower chamber) of the heart. Blood passes from the left atrium through the mitral valve into the left ventricle. The mitral valve closes when the left ventricle contracts preventing blood from flowing backwards into the left atrium. A normal mitral valve is thin and supple and is anchored in place by strands of tissue called chordae tendinae.

Myxomatous degeneration occurs when the valve becomes thickened. This prevents complete closure of the valve allowing blood to flow backward into the left atrium. This backward flow is called mitral regurgitation. The leak progressively worsens over time causing increased pressure within the heart and also causing the atrium and ventricle to enlarge. Eventually the heart is no longer able to pump blood efficiently. The increased pressure in the heart causes fluid to leak from the blood vessels allowing fluid accumulation within the lungs (pulmonary edema). This stage of heart disease is called congestive heart failure (CHF) and requires immediate medical attention.

Symptoms

Most dogs with mild to moderate MMVD do not demonstrate any signs of disease. Congestive heart failure occurs when the disease becomes severe. Symptoms include lethargy, decreased appetite, labored breathing, coughing, collapse and fainting. Patients can cough for two reasons, enlargement of the heart compressing on the airway or fluid accumulation in the lungs from CHF.

Diagnosis

Once the pet has been diagnosed with a heart murmur the next step is cardiac ultrasound (echocardiogram or echo). The ultrasound will allow the cardiologist to assess the structure and function of the heart, determine where the heart murmur is coming from, the severity of the heart disease, and if medications or additional testing such as chest x-rays are needed.

Treatment

Pets with moderate to severe MMVD will often be started on an ACE Inhibitor and pimobendan (Vetmedin). In June 2016, a drug trial showed that prescribing pimobendan to dogs with moderate to severe MMVD can delay the development of congestive heart failure by a median time frame of 15 months.

Rechecks are recommended every 6 to 12 months in the earlier stages to assess the progression of disease and to determine when medications should be started. Once the pet is starting to show symptoms of congestive heart failure, diuretics will be added and rechecks should be done every 3 to 6 months. Serial recheck examinations will allow the cardiologist make adjustment to medications hopefully keeping the pet out of CHF and out of the hospital for as long as possible.

ACE inhibitors and diuretics both act on the kidneys and can increase kidney values. It is important to check kidney values before and after starting these medications to ensure the kidneys are functioning properly and can handle the medication appropriately.

In an effort to catch congestive heart failure in its early stages, is important to become familiar with the pet's normal sleeping breathing rate and breathing effort at home. A sleeping pet should have a respiratory rate of 30 breaths per minute or less. If you notice this number increasing consistently, or notice an increase in the effort it takes to breathe, contact your cardiologist or family veterinarian right away. An increase in breathing rate or effort is a signal that fluid is accumulating in the lungs, and the pet is going into congestive heart failure. It may be helpful to keep a daily log of the pet's breathing rate so that you will notice increases or changes from normal breathing.