

MITRAL VALVE DISEASE

Endocardiosis of the canine mitral valve is a chronic degenerative disease of the valve between the left atrium and the left ventricle of the heart. This condition is more commonly referred to as Mitral Valve Disease, or MVD. Deposition of mucopolysaccharide in the valve and its attached cords causes the valve to become distorted, allowing blood to leak back into the atrium during contraction of the ventricle. Most of the time, the mitral valve is the only valve affected by endocardiosis, but in approximately one-third of the affected dogs, the tricuspid valve (between the right atrium and right ventricle) will be affected as well.

Prevalence of canine MVD is typically highest in small breeds, and is most common in Cavalier King Charles Spaniels. Other breeds with a known predisposition are the Chihuahua, miniature poodle, miniature pinscher, dachshund, Pekinese, and the whippet. In the latter breeds, it is thought that the incidence is about 5% in middle-aged (5-7 year-old) dogs and about 35% in dogs over the age of 12. But in the Cavalier King Charles Spaniel, over 50% of the dogs in England and the United States have evidence of disease by the age of 5.

Diagnosis is most typically made by auscultation. The murmur of MVD is typically heard best at the left fifth intercostal (between-the-rib) space. Murmurs are generally rated as grade I through grade VI, (one through six) depending on the loudness of the murmur. As disease progresses, the murmur typically becomes louder. In a very young dog with a very soft murmur, further studies may be necessary to determine the source of the murmur. All murmurs are not indicative of MVD; innocent flow murmurs sometimes appear in young, healthy dogs. A Doppler study will document regurgitation into the left atrium, and may be recommended in a young-breeding animal with a murmur. Doppler studies are also being used in some areas, since regurgitation of blood will most likely be seen on Doppler before it is heard as a murmur.

A dog with MVD may remain symptom-less for years (the average longevity of a cavalier is about 11 years). However, when the regurgitation of blood back through the valve gets to the point that it interferes with oxygenation, the dog may begin to cough and have shortness of breath with exercise. This point is termed "Congestive Heart Failure", and is usually rated as mild, moderate or severe. When the heart becomes very inefficient, other organ systems may also be affected. Poor blood flow to the kidneys may lead to renal disease; liver congestion may also occur. Long-term prognosis depends on the response to treatment and the stage of heart failure, but heart failure secondary to MVD is the most common cause of death in the Cavalier.

One other complication of endocardiosis is endocarditis. Endocarditis is a bacterial colonization of the diseased valve that may cause fever and sepsis. For this reason, dogs with MVD should receive antibiotic prophylaxis prior to surgical or dental procedures. There is some controversy about the best time to begin treatment. Most commonly,

treatment is deferred until there is cardiac enlargement on xray. The most common treatments include the vasodilator such as enalapril (brand name Enacard), a diuretic such as furosemide (brand name Lasix), and digoxin, a drug that may help the heart to beat slower and stronger. A few surgical mitral valve replacements have been successful, but it is not considered standard treatment at this time.

The veterinary and genetic communities agree that there is a genetic basis for MVD, and therefore the key to decreasing the incidence of MVD lies in selective breeding. To this end, a yearly heart exam is recommended, preferably by a cardiologist, and breeders have been encouraged to use older stud dogs (over age 5) with healthy hearts. Another recently proposed protocol suggests that all cavaliers used for breeding be at least 2 and 1/2 years of age and free of murmur by a cardiologist's auscultation. There are also ongoing studies utilizing selection by Doppler examination. Hopefully, with these efforts, the incidence of MVD will be decreased, or at least the prolong the age of onset, to the point that MVD is no longer the limiting factor in cavalier longevity.