Specialist Veterinary Cardiology Consultancy

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Chronic Degenerative Valvular Disease

What is Chronic Degenerative Valvular Disease?

Chronic Degenerative Valvular Disease, is also known as endocardiosis, myxomatous valvular degeneration, myxomatous mitral valve disease or mitral valve disease, and it is the most common acquired heart disease in dogs. This disease is most commonly seen in middle-aged and older dogs. It is also more common in small-breed dogs (e.g. Cavalier King Charles spaniels, chihuahuas, dachshunds and Yorkshire Terriers), although large breeds may also be affected. There is a wide variation of disease progression. Some dogs live entire lives with a heart murmur and don't develop any clinical signs. Others present only when they have severe clinical signs.

This chronic degenerative disease affects primarily the mitral and tricuspid valves of the heart. These valves are important in preventing the back flow of blood from the ventricles into the atria during the heart contractions. The degeneration of the valve leaflets causes ineffective closure of the valves and allows blood to leak from the ventricles back into the atria (regurgitation). As a consequence of this regurgitation, the heart needs to accommodate a larger amount of blood, which eventually leads to atrial and ventricular enlargement. There is also a requirement of stronger heart contractions. Initially the heart muscle is able to cope, but as the disease progresses, the heart muscle starts to fail (systolic dysfunction). When there is an inability to provide adequate blood flow to the organs, there is an activation of compensatory mechanisms that increase the blood volume. With excessive blood volume and increased atrial pressure, fluid will eventually leak out of the vessels flooding the lungs (pulmonary oedema or "wet lungs") causing increased respiratory rate and respiratory distress (laboured breathing) because the fluid hinders oxygen exchange in the lungs. This condition is often referred to as "congestive heart failure" (CHF). The disease can also progress into "right-sided" CHF, which is characterised by fluid accumulation in the abdomen (ascites) or in the space outside the lungs (pleural space). Other clinical signs can develop with the onset of congestive heart failure, such as exercise intolerance, fainting, restlessness at night, inappetence and weight loss.

Cough is often reported as a sign of CHF. However, this is not correct and most dogs cough because of the presence of concomitant respiratory disease. Cough can also be exacerbated by the enlarged heart, rather than fluid in the lungs.

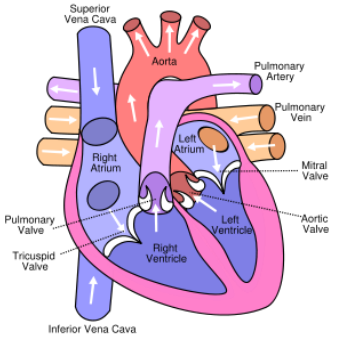
The diagnosis of this condition can be made using chest radiographs and/or echocardiography (ultrasound of the heart).

In 2019, a group of cardiologists have produced a consensus statement that classifies dogs into 4 stages of this disease (see table below). Different stages will have different therapeutic approaches that will be advised by your cardiologist together with recommendations for monitor the progression of the disease.

Stage A	Patients at high risk for developing heart disease but that currently have no identifiable structural disorder of the heart (e.g. every Cavalier King Charles spaniel without a heart murmur).
Stage B	Dogs presented with a heart murmur but have never developed clinical signs caused by heart failure. B1 if they still have a normal looking heart on echocardiography or radiography, or only mild changes which do not meet the criteria for B2. B2 if there is remodeling detected on echocardiography or radiography which meets certain criteria.
Stage C	Dogs that developed signs of heart failure.
Stage D	Dogs with end-stage disease with clinical signs of heart failure and that are refractory to "standard therapy".

What should be expected now?

There is no therapy to stop the progression of this disease, except for open-heart surgery and valve repair. Currently, these procedures are being performed in a few specialist centres worldwide at a cost of approximately £20,000. The short-term results of these new procedures are very promising. If surgery is not an option, medical management can delay the onset of heart failure and, once CHF develops, provide symptomatic relief . Even if presented in heart failure, many dogs can be maintained for months to years with appropriate therapy. However, frequent evaluations and medication adjustments become necessary as CHF progresses.



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This handout provides a general overview on this topic and may not apply to all patients.
Please do not hesitate to contact us if you require any additional information (www.cardiospecialist.co.uk)