



Dilated cardiomyopathy (DCM) is a disease affecting the heart muscle. It is the second most common heart disease in dogs (after mitral valve disease). In DCM the heart is unable to contract normally and as the heart muscle stretches the heart gets larger. DCM affects mainly middle-aged large and giant breed dogs and some spaniels. Cats and small breeds of dog are occasionally affected. Male dogs are more likely to be affected than females. Animals with DCM usually develop signs of heart failure and abnormal heart rhythms.

What causes dilated cardiomyopathy?

Cardiomyopathy literally means disease of the heart muscle (cardio = heart and myopathy = muscle disease). In DCM the heart muscle becomes thin and weakened. The heart muscle can be damaged in a number of ways including viral infections. Dietary deficiencies of taurine (an essential amino acid only found in meat protein) and carnitine have been reported as causes of DCM in some groups of dogs. Low levels of carnitine in the blood has been detected in some Boxers and Springer Spaniels with DCM, and some Cocker Spaniels with DCM may have low blood taurine levels. Since the disease is much more common in some breeds than others genetic factors are probably important. In most cases of DCM there is no apparent cause of the damage to the heart and this is termed idiopathic cardiomyopathy.

Once the heart muscle is damaged it becomes weak and so does not contract well. Because heart contractions are weak the heart does not empty with each contraction and the blood supply to the body is reduced. Pulses are weak and the paws may feel cold. With time the heart muscle stretches and heart becomes a flabby sac. DCM eventually results in heart failure with fluid build-up in the lungs (pulmonary oedema), the chest (pleural effusion) and belly (ascites).

What are the signs of cardiomyopathy?

Signs of heart disease are often not noticed by owners until their pet develops heart failure. Your vet may hear an irregular heart beat on a routine examination and this may be the first sign that your dog has heart disease. Owners most commonly recognise exercise intolerance and breathlessness in their pet but anorexia, depression and excessive drinking are also common. The first sign in many dogs is coughing and collapse. You may notice that your dog has recently lost weight - this may be due to cardiac cachexia. If ascites develops the abdomen may be distended and you must be careful not to misinterpret this swelling as weight gain. Some animals with DCM die suddenly.

How do vets diagnose cardiomyopathy?

From the changes that you describe and by examining your dog your vet may suspect that your pet has a heart problem. Other tests will be needed to confirm this; x-rays and ultrasound are the most common. Chest x-rays may show that the heart outline is enlarged and there may be other changes (such as fluid in the chest) caused by heart failure. Your vet will need to examine your dog's heart with ultrasound to make the diagnosis. With ultrasound it is possible to measure the thickness of the heart muscle and the size of the heart chambers. Ultrasound also allows us to see the heart beating and we can measure how much contractility it has.

Abnormal heart rhythms are common in DCM so an electrocardiogram (ECG) is useful in patients with DCM. A special type of rhythm (atrial fibrillation) is present in most giant breeds with DCM and other disturbances to the heart rhythm are particularly common in Dobermanns and Boxers.

Blood changes in DCM are not specific, but may indicate poor kidney function due to reduced blood supply to the kidneys. There is now a blood test (proANP) that can be used for early detection of heart disease in dogs and this may be useful in some cases if other diagnostic methods are not available.

Can dilated cardiomyopathy be treated?

In almost all cases there is no treatment for the underlying muscle disease. Signs of heart failure can be managed according to its severity. Patients in acute heart failure (collapsed and with breathing difficulties) should be taken into hospital for strict rest and immediately started on diuretics and a vasodilator (nitroglycerine cream rubbed onto the ear pinna). Intravenous diuretics are given to remove fluid on the lungs.

Dilated cardiomyopathy



Long-term treatment includes controlling exercise and administering oral diuretics and ACE inhibitors to reduce lung fluid. If the heart rate is fast then dogs may benefit from drugs that slow the rate. Pimobendan has been shown to improve quality of life in some dogs with DCM.

If your vet thinks that a dietary deficiency is a possibility then supplementation with carnitine or taurine may be beneficial. However, these treatments can be expensive in giant breeds and are unlikely to be beneficial in these breeds. If you can afford it, it is probably wise to try supplementation with L-carnitine in Boxers and Springer Spaniels and taurine in Cocker Spaniels and dogs on vegetarian diets.

If heart rhythm is abnormal drugs may be given to control this. It is very unusual to be able to convert the heart back to a normal rhythm if DCM is present but if the heart rate is slowed the heart may contract better with each beat and therefore give a better output of blood to the body. Kidney function, and other blood tests should be performed regularly in patients receiving treatment.

Will my dog get better?

The outlook for most dogs with DCM is not very good. Most animals with DCM develop heart failure and some die, as fluid builds up in the lungs, or are put to sleep as a result of poor quality of life. Many dogs with DCM die suddenly (probably as a result of developing severe cardiac rhythm disturbances).

How long will my dog live?

The outlook for dogs with DCM is extremely variable depending on the severity of the disease and the breed of dog. Most dogs survive around 6 months and around one-third of dogs will be alive one year after diagnosis. Cocker Spaniels and giant breed dogs appear to survive better than other breeds. Some, with appropriate management, may live relatively normal lives for years after diagnosis. Dogs with fluid in their chest at the time of diagnosis tend not to survive so long. The outlook for most Dobermanns is unfortunately extremely poor (with many only living a few weeks and most only living a few months after diagnosis).

If you want any other information on health issues concerning your dog please contact your local Veterinary Surgeon.