



Dilated Cardiomyopathy (DCM)

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Dilated Cardiomyopathy (DCM) is a disease of the heart muscle in which it becomes weak and is no longer able to contract properly. As a result, the heart becomes enlarged, hence the name dilated cardiomyopathy.

What causes DCM?

There are several reasons why the heart muscle may become weak, such as infectious disease and low thyroid hormone levels among others. If the heart is forced to work harder for a long time due to another cardiac disease or faster (arrhythmias), the heart muscle may also become weak and lead to dilation. All of these conditions look like DCM and have to be excluded before a definite diagnosis of DCM may be issued. Complete understanding of the cause or causes of DCM is still not within the grasp of the veterinary profession. A genetic cause has been identified or is strongly suspected for a few breeds.

Grain free diets and DCM.

Recently a great deal of concern was felt by dog owners following publicity surrounding the possible association of some grain free diets and DCM. The diets concerned had legumes such as peas or lentils, other legume seeds, or potatoes listed as primary ingredients and also exotic meats, other vegetables and fruits. The suspicion of a possible higher prevalence of DCM in dogs that consumed these foods led to an investigation by the FDA (US food and drug administration) which is still ongoing. However, it is important to state that at present there is no proof that the ingredients in these diets truly cause DCM. At the moment, the best thing to do is to consult your veterinarian on the quality of your dog's diet and, if necessary, monitor your dog for signs of DCM. Further information can be obtained via the following link.

<https://avmajournals.avma.org/doi/full/10.2460/javma.253.11.1390>

Affected breeds

DCM is more common in large breed dogs with a few exceptions such as Cocker Spaniels and Dalmatians.

- Doberman
- Great Dane
- Irish Wolfhound
- Newfoundland
- Portuguese Water Dogs

Onset and natural progression

DCM is an adult onset disease – often around 5-7 years – except in the Portuguese Water Dog. Most of the information available refers to the Doberman breed and the disease may be roughly divided into 3 stages:

Stage 1 – Dogs with the disease but without any signs of heart disease

Stage 2 (Occult Disease) – Evidence of disease (heart dilation and/or irregular heartbeats) but no clinical signs (lasts 2-4 years)

Stage 3 (Overt Disease) – Clinical signs of heart failure.

Diagnosis

Overt stage

Heart muscle “weakness” and enlargement of the heart may be easily identified on an ultrasound scan of the heart – echocardiographic examination. Other diseases are also excluded with this exam. A 24 – 48 hour continuous electrocardiogram (Holter examination) allows proper assessment of the heart rate and rhythm to diagnose and manage the arrhythmias which are common in this disease. Chest radiographs allow identification of signs of congestive heart failure, such as fluid in the lungs or chest cavity. Blood pressure measurement and blood tests to assess kidney function and electrolytes complete the necessary information to appropriately manage this disease.

Occult stage

Diagnosis of DCM in the occult stage constitutes a challenge. Yearly examinations with echocardiography and Holter monitoring are advised in predisposed breeds in order to identify affected dogs at a very early stage. Any signs of arrhythmia, heart murmur or heart enlargement should prompt a cardiovascular examination in any dog. Unfortunately, identification of affected dogs that are still normal but go on to develop the disease later in life is still not possible. Blood tests (NT-proBNP and cardiac troponins) may signal the presence of the disease but may not be used as the only test to diagnose DCM. An abnormal result should always prompt for further investigations. Unfortunately, a normal result does not guarantee that the disease is not present either.

Treatment

Unfortunately, a cure does not exist for this condition. A combination of drugs is used to control signs of congestive heart failure, improve heart muscle strength and lessen the load on the heart. If necessary anti-arrhythmic drugs are prescribed to treat abnormal heart rhythms. Treatment regimens are monitored closely in order to provide the best quality of life possible.

Monitoring

Overt stage

Regular cardiology examinations will be necessary to appropriately manage DCM at this stage and assess how the dog is coping with treatment. After a physical examination, blood pressure will be measured and an echocardiographic examination and thoracic radiographs will normally be repeated. Some blood tests will be essential to assess how the kidneys are coping with treatment and disease, and also provide further important information needed for treatment adjustments. Regular Holter examinations will probably also be necessary.

Monitoring at home

An easy and reliable way to monitor for signs of heart failure (fluid in the lungs or chest) is to monitor the breathing rate at home during sleep. Count the number of breaths in 15 seconds and multiply by 4. Values above 30 suggest the presence of heart failure.

Treatment adjustments

After any treatment adjustments a brief re-check at your vet may be necessary. The same blood tests will be repeated to assess the kidneys’ response to therapy, blood pressure and possibly further chest x-rays if there has been previous congestive heart failure. Usually this is performed 5-10 days after the initial examination.

Occult stage

Yearly examinations with an echocardiographic examination and Holter examination.

Prognosis

Overt stage

Depending on response to therapy, some dogs may cope well with the disease for a fair amount of time, whereas others unfortunately do not. This varies with each case and is very difficult to predict. Sudden death is possible, especially in the Doberman.

Occult stage

This stage may last for up to 4 years or more in which no external signs of disease are perceived. Some dogs will die suddenly during this stage without ever showing clinical signs up to that point.

Further information and fact sheets relating to cardiac conditions can be viewed using the following link: <https://vetspecialists.co.uk/services/cardiology/>