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FELINE CARDIOMYOPATHY

What is cardiomyopathy?

Cardiomyopathy is a term used to describe diseases of the heart muscle. In cats, three classes of cardiomyopathy have been described: hypertrophic, dilated and intermediate or restrictive cardiomyopathy. In all classes, the heart disease usually results in clinical signs of heart failure. Cardiomyopathy may be seen as a primary condition or secondary to other diseases.

What are the clinical signs seen with cardiomyopathy?

In the early stages of disease, the cat may be able to cope and will not show any signs of disease. This is referred to as compensated heart disease. Often the cats will alter their activity levels to those that they can cope with which makes it difficult to diagnose cardiomyopathy until it is quite advanced.

The major long term concerns with all types of cardiomyopathy are:

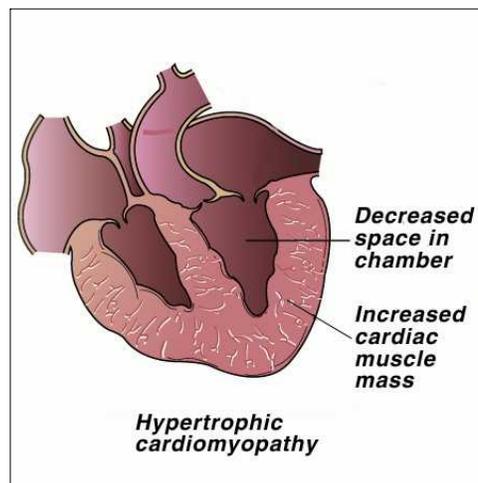
Development of congestive heart failure – Breathlessness and lethargy are the most frequently noticed signs of congestive heart failure and result from failure of the heart to efficiently pump blood.

Thromboembolic disease – Altered flow of blood in enlarged heart chambers increases the risk of blood clot formation within the heart called a *thrombus*. If parts of the thrombus become dislodged, they can travel in the bloodstream and block smaller blood vessels. These travelling blood clots are called *emboli* and the most common place for them to lodge is at the bottom of the aorta, which is the largest artery in the body. This results in obstruction of the blood supply to the back legs, which is very painful and leads to paralysis. This blockage is commonly referred to as a *saddle thrombosis*. Although some cats may recover with appropriate treatment, this is a potentially fatal complication of any cardiomyopathy.

Hypertension – High blood pressure or hypertension is a possible complication seen in many cases of hypertrophic cardiomyopathy. This may result in spontaneous bleeding, such as nosebleeds or hemorrhage within the eye and may also cause retinal detachment and blindness. This may be noticed as a sudden loss of vision and widely dilated pupils. This is an emergency situation since the blindness will be permanent unless the retina is reattached within a couple of days. Drugs that lower the blood pressure may be used to treat cats with this problem. Measuring blood pressure in cats is challenging due to their small size and the rise in blood pressure with stress, which makes interpretation of results difficult. For these reasons, hypertension may be detected only after a problem has occurred. Examination of the eyes may give early indications of hypertension since the blood vessels of the retina may show changes and small hemorrhages may be seen.

How is cardiomyopathy diagnosed?

Diagnosis of heart disease can be suspected on the basis of clinical signs, chest x-rays, electrocardiography (ECG) and cardiac ultrasound scans or echocardiography.



In cases where hypertension is a possibility, blood pressure can be evaluated if suitable equipment is available. Retinal examination may provide evidence of hypertension where blood pressure measurements cannot be made.

Specific tests may be done in order to check that the cardiomyopathy is not secondary to some other disease.

What causes cardiomyopathy?

There are many causes of cardiomyopathy; however, in older cats hyperthyroidism commonly causes cardiomyopathy. Other causes include kidney failure and a rare cause is dietary deficiency of taurine, an essential nutrient. This is not seen in cats fed a commercial cat food.

How is cardiomyopathy treated?

In cases where an underlying cause of the heart disease is found, then treatment of this condition may result in improvement or reversal of the heart disease. Hyperthyroidism is the



most treatable cause of cardiomyopathy since complete resolution of the heart disease is possible if diagnosed and treated early. In cases where no cause is identified or *idiopathic cardiomyopathy* and in cases where disease remains following treatment for an underlying cause then medication may be needed.

Treatment varies according to each case but may include:

1. **Diuretics** if congestive heart failure is present.
2. **Beta-blockers** to reduce the heart rate where this is excessive.

Calcium channel-blockers to help the heart muscle relax and hence help more effective filling of the heart.

Aspirin may be used for its effects at reducing the risk of thrombus formation and thrombo-embolic disease. Dosing of aspirin should always be as advised by a veterinarian since aspirin may be toxic to cats. Aspirin poisoning, which occurs if the dose or frequency of aspirin administration is too high, may cause vomiting and internal bleeding. If your cat shows these signs, stops eating or appears sick, aspirin therapy should be stopped and you should consult your veterinarian immediately.

3. **ACE-inhibitors** - these drugs also help to control congestive heart failure.

Drugs to lower blood pressure – additional medications may be needed to treat hypertension.

The long term outlook for a cat with cardiomyopathy is extremely variable depending on the cause of this disease. Cats with idiopathic cardiomyopathy may remain stable for several years.

Does a cat with cardiomyopathy need a special diet?

Low sodium diets are recommended for cats with cardiomyopathy. This may decrease the risk of developing congestive heart failure and hypertension. Cat treats are often quite salty and should be avoided. We will make specific dietary recommendations for your pet's condition.

*This client information sheet is based on material written by Ernest Ward, DVM
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