O A K B A Y A N I M A L H O S P I T A L

975 OAK BAY ROAD, PORT HADLOCK, WASHINGTON 98339 • PHONE: 360.385.7297 • FAX: 360.379.8124

FELINE CARDIOMYOPATHY

What is cardiomyopathy?

Literally, the term "cardiomyopathy" means disease of the heart muscle. More specifically, cardiomyopathy (CM) is a disease of the heart muscle in which either the heart walls thicken greatly (hypertrophic and restrictive forms) or stretch greatly (dilated form). In either form, the heart's function is significantly compromised and leads to an eventual state of heart failure.

What causes cardiomyopathy?

Several causes of feline cardiomyopathy have been identified. A deficiency of taurine, an essential amino acid, will cause dilated CM in the cat. Taurine was deficient in many commercial cat foods until its deficiency was identified; commercial cat foods are now properly supplemented. Hyperthyroidism, a non-cancerous growth of the thyroid gland, can cause a variation of the hypertrophic form of CM. The restrictive form is associated with an unidentified inflammatory process within the heart muscle. However, many cases of CM are not caused by any of these processes, and we do not understand their origin.

What does a cat with cardiomyopathy look like?

Cardiomyopathy is a disease that usually takes several weeks to months to progress to a serious stage. During the early weeks of the disease, the cat will probably look normal. Cats have the ability to hide serious illness until it reaches a crisis stage. Therefore, most cats that develop clinical signs of cardiomyopathy will appear to have been ill for only a few days. A few days of inactivity and poor appetite occur first. Just prior to the state of heart failure and death, the cat may become very inactive and exhibit labored breathing. Both may be due to insufficient oxygen transport to the body's tissues; the latter may also be due to a collection of fluid in or around the lungs.

How is this disease diagnosed?

Diagnosis is generally made with a chest radiograph (X-ray). The heart will have an abnormal shape and fluid in or around the lungs may be detected. If a large amount of fluid is present around the lungs, it may be necessary to remove it and take more X-rays because the presence of this fluid interferes with evaluation of the heart. Many cases also require better visualization of the heart with an echocardiogram, or sonogram. This is a non-invasive method for looking at the heart while it is pumping. Sound waves are used to make this dynamic study of the heart. The x-ray can tell us about the size and shape of the heart but nothing about heart function. The ultrasound can provide this information. The ultrasound will also allow measurement of the heart muscle to determine if it is too thick (hypertrophic CM) or too thin (dilated CM). Finally, an electrocardiogram (EKG) is useful to evaluate the rhythm of the heart.

Determination of the level of thyroid hormone in the blood (T_4) is often indicated in evaluating cats with hypertrophic CM. This simple blood test can help identify an overactive thyroid gland as the underlying cause of heart disease.

What is involved with treatment?

Treatment is based on the type of CM present. Different drugs are used for the two different forms. Therefore, if at all possible, tests necessary to define the specific form of CM are performed before treatment begins. Fortunately, most of these cats can be stabilized with the correct drug; however, continual medication may be necessary since the disease cannot usually be cured. The exception to this is the cat with hyperthyroidism. If hyperthyroidism is identified in a cat with hypertrophic CM, the heart disease is potentially reversible if the cat receives appropriate and timely treatment for the thyroid disease.

Are there complications that may occur?

Most of the cats with cardiomyopathy develop signs of heart failure, as previously described. However, cats with CM are prone to producing blood clots within their hearts. When these clots escape the heart, they travel through various arteries leading from the heart. They eventually lodge in a narrow part of the artery when their continued travel becomes impaired by the artery's diameter. The most common site for clots to lodge is the point at which the aorta splits before going into the rear legs. Thus, these cats often become paralyzed in the rear legs very suddenly and are in significant pain. In many cases, it is paralysis and pain that first becomes noticeable and is the reason that medical treatment is sought. Some owners mistake this event for an uncomplicated lameness, or even a broken leg. When these cats are examined, there are no pulses to one or both rear legs, the legs are cold, and the footpads appear blue (cyanotic) due to the lack oxygen.

Treatment of the paralyzed cat concentrates on drugs to relieve pain and to hasten the return of circulation to the legs. Since these cats also have severe heart disease, they make poor surgical candidates. Therefore, surgery to remove the clot is not advisable due to the high incidence of death during surgery.

The prognosis for the paralyzed cat is variable, but is improved if the cat receives immediate attention. Within 3-10 days, circulation is restored and leg function returns in most cats. However, the heart disease must be controlled quickly or they will die.

What is the prognosis for cats with cardiomyopathy?

The prognosis for CM is quite variable, depending on the form of the disease and the severity at the time of diagnosis. Many cats will live up to three years if properly medicated, but the survival rate averages about six months. Again, the exception is when CM is caused by hyperthyroidism. If hyperthyroidism is successfully treated, the heart function will generally return to normal and the cat will no longer require treatment for heart disease.