

Hypertrophic Cardiomyopathy in Cats

What is hypertrophic cardiomyopathy?

Hypertrophic cardiomyopathy (HCM) is characterized by unexplained thickening of the muscular walls of the heart. The word “unexplained” implies that other conditions that can cause thickening of the heart walls, such as high blood pressure, hyperthyroidism, and aortic stenosis (another type of heart disease), have been ruled out. HCM can lead to congestive heart failure due to an inability of the abnormally thick heart walls to relax. That is, the chambers of the heart are unable to adequately open, accept blood from the blood vessels “behind” them, and pass blood along in the forward direction. HCM is an acquired heart disease (as opposed to congenital diseases, which are present at birth). It is diagnosed most frequently in young adult and middle aged cats, although first detection at either younger or older ages can also occur.

How is HCM diagnosed?

Heart disease may first be suspected prior to heart failure during routine **physical examination**, based on detection of a heart *murmur* (an abnormal “whooshing” sound associated with the normally crisp heart sounds). However, some cats with HCM do not have a heart murmur. If congestive heart failure is present at the time of diagnosis, other physical exam findings may be present, such as rapid and labored breathing. Breath sounds heard with a stethoscope may be either extremely quiet or unusually loud, depending on where fluid has accumulated.

Definitive diagnosis requires an **echocardiogram** (ultrasound examination of the heart). Echocardiographic findings in cats with HCM are extremely variable. Certain abnormalities, however, are commonly noted. The walls of the heart’s strongest chamber, the left ventricle, are abnormally thick. Most cats with HCM, particularly those with concurrent congestive heart failure, also have an enlarged left atrium, the chamber located “behind” the left ventricle. Other abnormalities, such as the presence of valvular insufficiencies (e.g. mitral valvular regurgitation), are sometimes noted.

Several other diagnostic tests may be important during initial and followup evaluation. **Chest x-rays** provide a “big picture” view of the heart within the chest cavity alongside the lungs. Prior to the onset of congestive heart failure, chest x-rays yield a baseline for future comparison. Once congestive heart failure develops, they comprise the most important imaging test by which medical therapy is monitored.

An **electrocardiogram** (often called an EKG or ECG) is used to identify and characterize arrhythmias. The relative severity of an arrhythmia dictates whether or not it warrants specific therapy. Followup EKGs are instrumental in assessing progression of previously noted arrhythmias and their response to antiarrhythmic therapy.

As mentioned above, **blood pressure measurement** is necessary to rule out hypertension (high blood pressure) as a cause of thickened heart walls. A **thyroid hormone level** is used to screen for the common feline endocrine disease, hyperthyroidism, which is another potential cause of this echocardiographic abnormality. Other blood work may be necessary to assess kidney function and electrolyte concentrations. These values be affected by some of the commonly used medications in the treatment of heart disease and heart failure. It is important to monitor them so that undesirable side effects can be avoided or minimized.

How is HCM treated?

Unfortunately, as is the case for many types of heart disease in animals and people, no medication has been shown to reliably delay progression of this disease. Therefore, controversy exists over which medication, if any, is most appropriate to use. Some classes of agents which are sometimes prescribed include “beta adrenergic antagonists” (typically called beta blockers), calcium channel blockers, and inhibitors of an enzyme called “angiotensin converting enzyme” (these are called ACE inhibitors). If congestive heart failure is present, a drug called “furosemide” (often referred to by one of its brand names, Lasix) is used together with an ACE inhibitor, sometimes along with a beta blocker or calcium channel blocker as well.

What is the prognosis? What should I watch for?

Just as the echocardiographic appearance of HCM varies between affected cats, so does the long-term prognosis. The presence of congestive heart failure does worsen overall prognosis, although many cats respond very well to medical therapy for some period of time. In the absence of heart failure at the time of diagnosis, some cats remain asymptomatic for very long periods, with one study reporting an average survival time of approximately 5 years in such cats. Again, this is variable and, therefore, impossible to accurately predict.

Once the diagnosis of HCM has been made, it is important to watch for signs of heart failure (the buildup of excessive fluid in the body due to heart disease). Symptoms of heart failure include **lethargy**, **weakness**, **intolerance to activity or exercise**, and **rapid or labored breathing**. Some cats may only show mild and nonspecific behavioral changes such as hiding or **loss of appetite**. Finally, a subset of cats with heart disease form blood clots inside their heart, which can then be released and become lodged in an artery downstream. This can result in a sudden onset of **difficulty walking**, atypical **vocalization**, and even **sudden death**. Observation of even the milder of these symptoms warrants a phone call to either your regular veterinarian or Dr. Marshall at Veterinary Specialty Services. More severe symptoms, such as difficulty breathing or walking, require immediate attention on an emergency basis.