Hypertrophic Cardiomyopathy In Cats

What is hypertrophic cardiomyopathy?

Hypertrophic cardiomyopathy (HCM) is a type of heart disease commonly diagnosed in cats whereby the muscular walls of the heart thicken. The thickened heart muscle walls contract forcefully but fail to relax normally, such that the pump function of the heart is compromised. The thickened walls also pose risk for dangerous alterations in the heart's rhythm.

Some cats will live with HCM their entire lives without it creating any problems. For others, life-limiting congestive heart failure will develop where fluid accumulates in the lungs (pulmonary oedema) or around the lungs (pleural effusion). Cats with HCM are also at risk for development of blood clots which create an abrupt onset of painful paralysis if a clot lodges in the blood vessels of the legs. Less common outcomes of HCM include fainting and sudden death.

Causes of hypertrophic cardiomyopathy

In humans, HCM is caused by an inherited mutation in the genes that encode for the contractile proteins in heart muscle cells. Similar genetic mutations have been identified in some breeds of cats and their heritability has been demonstrated. The domestic short-hair cat is one of the most commonly affected breeds and for domestic short-hair cats the heritability is unknown.

However, it is probable that for cats, like humans, there are hundreds of different heritable genetic mutations that all produce HCM. While the genetic mutation is likely inherited from one both of the parents, the disease itself is not present at birth and doesn't usually develop until adulthood when the heart muscle walls spontaneously begin to thicken. Conditions that are known to mimic HCM include chronic hypertension, hyperthyroidism, moderate-severe dehydration, mitral valve anomalies creating outflow obstruction and myocarditis. These conditions require different treatment approaches and confer different risks to HCM.

Signs of HCM in cats

Cats are masters of disguising illness, so often they'll appear completely normal until the disease has progressed and is severe. Signs of congestive heart failure (fluid in the chest) include an increased respiratory rate or altered breathing effort. For some cats this will be accompanied with a reduction in appetite and behavioural changes. For cats that form a blood clot, an abrupt and painful onset of paralysis of the back legs is the most common result. An abnormal stethoscope examination (heart murmur or irregularity) at a routine check-up may be the first sign of heart disease.
Should your veterinarian identify a heart murmur or irregularity, referral to a specialist cardiologist is advised. Early diagnosis of HCM can reduce or prevent the risk of an adverse outcome.

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Diagnosis of HCM

At your VCA consultation, your cardiologist will listen to the concerns you have about your cat's health. During this consultation, we'll ask questions about any signs of heart disease you may have seen, examine your cat and talk you through the process of diagnosing heart disease.

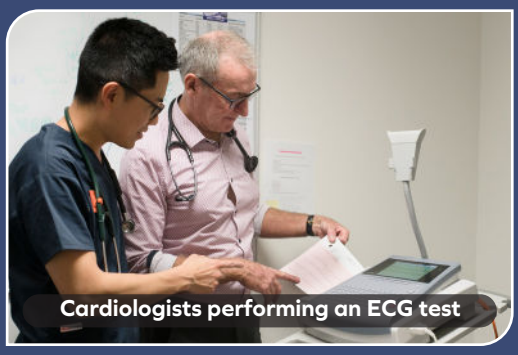
Most patients will require an ultrasound of the heart (echocardiogram) to obtain an accurate diagnosis. Your pet will lie comfortably on a custom-made cushioned examination table while our cardiologists perform the ultrasound. Often our patients are given a mild sedative to reduce anxiety. The ultrasound allows us to accurately assess the structure and mechanical function of the heart.

Your cardiologist may also perform x-rays of the chest to identify any fluid present in or around the lungs.

An ECG allows the cardiologist to assess the electrical function of the heart and will be necessary for some patients to identify irregular heart beats.

Additional tests to rule out disease that can mimic or exacerbate HCM, such hypertension or hyperthyroidism may also be advised.

Initial consultation with your cardiologist


Cardiologists performing an ECG test

Cardiologist performing echocardiogram

Cardiologists discussing xray results

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Treatment of HCM

At your discharge appointment, your cardiologist will make treatment recommendations. Within the diagnosis of HCM there can be significant variability and what medication may be valuable for one cat with HCM may be detrimental for another. Your cardiologist will advise which medications are specifically beneficial for your cat with their individual form of HCM.

Life-style or nutritional adjustments may be important for some patients. Risk reduction measures for future anesthesia will also be discussed when relevant and relayed to your regular veterinarian.

Prognosis

HCM confers a spectrum of outcomes. For cats that are diagnosed with mild HCM, some will progress slowly and HCM may remain in the background of their lives without ever resulting in adverse outcome or abbreviating life-expectancy.

Unfortunately, paralysis as a result of blood clots confers a high mortality rate. However, early identification of at-risk patients with HCM allows commencement of medication that effectively reduces clot risk. For cats that have survived a clot, this medication reduces the risk for recurrence.

For cats that develop congestive heart failure (fluid in or around the lungs) as a result of HCM, appropriate fluid management will rapidly restore and preserve quality of life. However, congestive heart failure with HCM is a terminal disease and life-expectancy is typically 3-12 months.

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