

## Hypertrophic Cardiomyopathy in Cats

Hypertrophic cardiomyopathy (HCM) is common in cats. The disease is inherited in some breeds (Maine Coon and Ragdoll) and is believed to have a genetic basis in others. Many gene mutations have been found to contribute to HCM in people and the same is likely to be true in cats.

The left ventricle heart muscle is excessively thickened in cats with HCM. In the early stages, the thickening is usually mild and doesn't cause clinical signs. Problems develop when the thickening becomes moderately severe. The muscle tends to expand 'inwards' and so reduces the size of the cardiac chamber and reduces the volume of blood that can be pumped with each stroke. The thickened heart muscle is unable to completely relax between contractions, which further exacerbates the hearts poor pumping abilities. Sometimes the heart valves can become distorted and this can create leaks. Blood leaking through a distorted valve can contribute to enlargement of the left atrium (chamber on top of the heart). With severe disease, the left atrium can become so stretched that blood flow around the periphery becomes sluggish and this predisposes to blood clot formation. If a piece of the clot breaks off, it can travel through the arteries and lodge where the vessels narrow (thromboembolism). Typically the thromboembolism lodges where the arteries supply the hind limbs, and this results in paralysis.

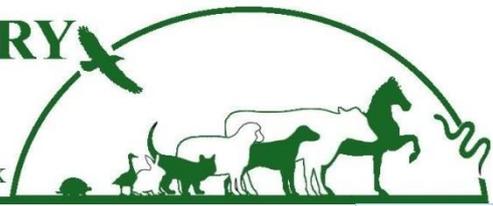
HCM can present in a variety of ways

- Detection of a heart murmur or rhythm disturbance at a routine check up
- Development of heart failure – laboured breathing. This is sometimes preceded by vomiting and anorexia for a few days.
- Fainting
- Development of a thromboembolism with sudden onset paralysis

Cats that have HCM but no clinical signs are categorised as having sub-clinical disease. Some cats have relatively benign disease that progresses slowly over several years. Others have more malignant disease that progresses rapidly. Once HCM is suspected, an echocardiogram (heart scan), ECG, radiographs or blood tests may be recommended to further evaluate the heart. The cardiologist will use this information to determine the risk of an adverse event and to determine if medical intervention will be of benefit. Sometimes, monitoring may be all that is required.

Drugs that are commonly used to treat cats with HCM include:





- ACE inhibitors – benazepril. These drugs regulate blood pressure and help counteract some of the deleterious changes that occur within the heart and blood vessel walls
- Beta-blockers – are sometimes used to control heart rate and treat abnormal rhythms
- Calcium channel blockers – may be used to improve relaxation of the heart muscle and control heart rate
- Diuretics – frusemide. These drugs cause the kidneys to excrete salt and water (which are retained during heart failure) and used to treat pulmonary oedema.
- Aspirin and clopidogrel – used to thin the blood if there is a risk of thrombosis
- Pimobendan – used to help the heart contract if it is weak

The prognosis for HCM varies between individuals. Some cats have benign, slowly progressive disease and may succumb to old age or another disease before the HCM becomes severe. Others have rapidly progressing disease that results in heart failure within months to a few years. Frequent monitoring is the best way to determine how rapidly the disease is progressing. Once heart failure has developed, cats can often do well for 9 -24 months with appropriate treatment.

Mr Dan R Andrews BVetMed CertVC Cert SAM MRCVS

