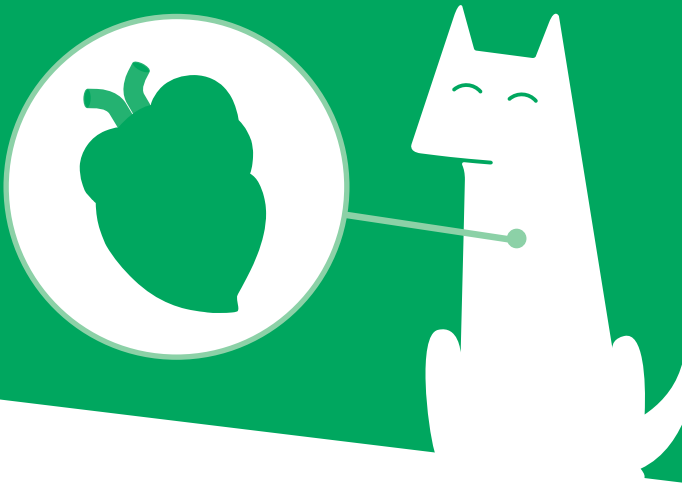
Heart murmurs and heart disease



CATS PROTECTION
VETERINARY GUIDE 11

The heart is a muscle that pumps blood around the body, providing it with oxygen and nutrients. It is made up of four separate chambers – an atrium and ventricle on the right and the same on the left. Each chamber is separated from the next by valves which prevent the backflow of blood. The normal pumping and shutting of valves in the heart causes the 'lub-dub' heart sounds that a vet listens for with a stethoscope.

Heart murmurs

A heart murmur means that in addition to normal 'lub-dub' heart sounds, the vet can also hear extra sounds when listening with a stethoscope. Heart murmurs are very common in cats – one study shows around one third of cats have a heart murmur. Although a murmur may signify a problem with the heart or its blood vessels, approximately fifty per cent of healthy cats with a heart murmur don't have any underlying disease – and of those that do, many live quite normally without ever developing any signs of disease. Conversely a number of cats without a murmur do have significant heart disease.

The problem with heart murmurs is finding out what causes them. It could be a problem affecting the function of the heart, or stem from another disease unrelated to the heart, or be an insignificant, 'innocent murmur.'

To further complicate matters, heart murmurs in cats can come and go – being heard on one day, but not the next. Murmurs may be noticed when a cat is stressed and the heart rate has increased, but be gone a few minutes later when a cat has calmed down. They are graded according to their intensity – usually grade one to six – but the grade can also change on a daily basis.

The grade of murmur heard does not necessarily mean heart disease is more or less severe, or even present. A murmur can also occur because of other disease which is not related to the heart – such as hyperthyroidism, high blood pressure or anaemia. On its own, a heart murmur is not a reliable indicator of heart disease or function and is commonly found in healthy cats.

If the cause of the murmur affects the heart's function then the underlying problem or disease will need to be treated. If the murmur does not appear to be due to a functional problem, treatment is unlikely to be necessary. In this case, regular follow-up examinations may be recommended to monitor the murmur and check for any clinical signs of heart disease.

What does the future hold?

Many healthy cats with a heart murmur never develop any problems with the heart's function and go on to lead long and healthy lives. The prognosis depends on the cause of the heart murmur.

Heart disease

Cats can be affected by a range of heart disorders. Congenital disorders are problems that they are born with and in some cases surgical correction may be possible. Cats can also suffer from acquired diseases of the heart muscle which are known as cardiomyopathies.

Of the different types of cardiomyopathy, the most common to affect cats is hypertrophic cardiomyopathy. Sadly, it can be a cause of sudden death in young cats that may not have shown any prior signs of disease.

Hypertrophic cardiomyopathy (HCM)

HCM is a disease that mainly affects young to middle-aged cats, although it can also be detected in elderly cats. There is an inherited predisposition to the disease, identified in some Maine Coons, British Shorthairs, Ragdolls, Rex and Persian cats, but the disease can also affect other breeds and is just as common in cross-bred cats.

Cats with HCM develop a thickened left ventricle. Over time, this thickening can make it harder for the left atrium to empty into the ventricle, leading to enlargement – or dilation – of the left atrium. Many cats affected with mild HCM live normal lives and never develop symptoms. A minority of cats develop severe HCM and show signs of heart disease.

What are the signs and treatment of HCM?

In cats severely affected with HCM, back-pressure of the blood can lead to fluid pooling in the lungs and signs can include:

- weakness
- pale gums
- a reduced appetite
- breathing difficulties – particularly on exertion

Treatment with diuretic injections or tablets to clear the fluid is required and sometimes other heart drugs to dilate the blood vessels and control the rhythm of the heart can be helpful. The condition cannot be cured, but often the signs can be controlled for a significant length of time.

Alternatively, in severe cases, enlargement of the atrium can lead to a blood clot forming in the heart. If this dislodges it can become stuck at the narrow end of the body's largest artery, the aorta – just where the artery divides to supply blood to the cat's hind

legs. Signs of this lodged clot – called aortic thromboembolism – are severe with cats showing signs of extreme pain and paralysis of the hind legs. Owners often think their cat has been involved in a road traffic accident, the onset of the symptoms are that sudden and severe.Treatment can be difficult and sadly, affected cats may need to be euthanased. Many owners are unaware their cat has any underlying heart disease until the cat shows severe clinical signs, or dies suddenly. For those cats which do survive, drugs may be recommended to try to prevent the recurrence of clot formation. Sometimes, cats may show no signs of significant underlying heart disease until something else triggers problems, such as general anaesthesia or the administration of intravenous fluids because of another illness.

How is heart disease diagnosed?

There are a number of different tests available to diagnose heart disease and often several tests may be used in conjunction:

- clinical examination – after asking an owner some questions about their cat's history, behaviour and lifestyle, the vet will assess the cat's breathing, gum colour and pulse quality and look for clinical signs of heart disease
- using a stethoscope – the vet will listen to the rate and rhythm of the heart beat and the cat's breathing and lung sounds
- blood tests – some heart protein levels may be raised in cats with significant heart disease
- x-rays – can help the vet to assess the size, shape and position of the heart outline within the chest
- ECG or electrocardiogram – the vet will measure the electrical activity of the heart, which can vary dependent on heart rate, rhythm, orientation and chamber size
- ultrasound scan – echocardiography – is the optimum test to check the heart structure and assess blood flow but this examination may require referral to a specialist veterinary cardiologist or

veterinary surgeon with additional training. The scan measures the heart muscle thickness and chamber size and assesses the valve function. Cats with both a thickened left ventricle **and** an enlarged left atrium are thought to have a higher risk of developing signs of heart disease
- other tests – the vet may wish to rule out other disorders by performing other tests such as measuring the cat's blood pressure, testing for anaemia and checking for hyperthyroidism
- in cats which have died suddenly, post-mortem examination may reveal HCM

What can I do for my cat?

Unfortunately, little is known about the progression of HCM in cats which do not show any clinical signs of disease, although large scale studies are ongoing. It is currently unknown whether treatment with heart drugs can help reduce the risk of signs developing.

For those cats with signs of HCM, oral medication and regular reviews can be helpful. Owners of affected cats are advised to monitor their cats closely at home by counting their cat's respiratory rate while the cat is sleeping and consult their vet if the rate starts to increase, as this may indicate progression of the disease.

What does the future hold?

Many cats affected with mild HCM live normal lives, never developing any symptoms of their heart disease. Only a minority of cats develop severe HCM and signs of heart disease.

If significant disease is present, treatment may help your cat but his heart function may deteriorate over time and treatment become less effective. Unfortunately, if his quality of life becomes poor then he may need to be euthanased.

My vet has heard a heart murmur in my cat – should my cat have further tests performed?

We recommend that you speak to your vet about whether to investigate the cause of a heart murmur in an otherwise healthy adult cat.

The majority of cats diagnosed with a heart murmur will either have an innocent murmur, or only mild structural heart disease, in which case the outlook is generally good. For those with no signs of heart disease there is currently little evidence to indicate that treatment will delay development of HCM, or extend a cat's life expectancy.

A small number of cats will be found to have significant heart disease. If your cat has severe underlying heart disease, it can be helpful to know this in advance of him being given a general anaesthetic or fluid therapy. It also allows you to be aware of the signs of the disease as it progresses, so you can keep an eye on your cat at home.

Heart tests can help to give owners peace of mind and may be useful for monitoring cats which have developed signs of heart disease. They also help to diagnose other heart disorders, such as congenital issues.

As murmurs can be caused by different medical issues unrelated to the heart, further tests for other diseases may also be recommended.

Learn more about your cat online!

Take a look at our free interactive tool to help you understand cats' origins and their behaviour within our homes. http://learnonline.cats.org.uk/content/ufo

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