



HEART FAILURE

Dogs

There are two common types of heart disease in dogs:

1. Mitral valve disease – Common in small breed dogs especially in Cavalier King Charles Spaniels. This is due to a chronic degeneration of the valve in-between the heart chambers of the left side of the heart.
2. Dilated Cardiomyopathy – This occurs more commonly in middle to larger breed dogs and involves a progressive dilation and weakening of the chambers of the heart.

Both conditions lead to left sided congestive heart failure. This is when the heart can no longer pump blood around the body effectively causing blood to back up in the system and fluid to build up in the lungs.

Clinical signs of heart failure secondary to mitral valve disease or dilated cardiomyopathy:

- Coughing
- Increased breathing rate and effort
- Reduced exercise tolerance.
- Weakness
- Collapse or episodes of collapse
- Cold nose, feet and tail.

Diagnosis

Heart failure may be suspected from the clinical examination. The heart rate is usually high, often with a heart murmur present and crackles may be heard when we listen to the chest. In more advanced stages breathing rate at rest may be affected and the gums may be pale. In order to diagnose the disease x-rays are required either under general anaesthesia or sedation. Sometimes ultrasound of the heart and chest is also required along with blood tests or an ECG.

Treatment

- *Furosemide* (water tablets) – This is a diuretic which helps to draw fluid out of the lungs and prevent the build up of fluid on the chest. You may notice your dog drinking more on this medication which is normal. This helps very quickly to clear the lungs and reduce the coughing, increasing energy levels.
- Pimobendan (vetmedin) – This is used to increase the strength and quality of the heart beat and also opens up the blood vessels to aid blood flow around the body.



- Ace inhibitors (benazecare) – This drug helps to improve blood flow around the body and correct the electrolyte changes caused by furosemide.

We usually start by giving these three drugs in combination.

- Spiranolactone – Is occasionally used for additional diuretic properties.
- Digoxin – Used occasionally to slow the heart rate down and help the heart beat regularly if the rhythm is very fast and irregular.

Cats:

The disease most commonly affecting cats is called Hypertrophic cardiomyopathy. This is hereditary in some breeds e.g. Main Coons but can develop in most breeds and affects 15% of healthy cats. It can also occur secondary to hyperthyroidism (*see hyperthyroidism advice sheet.*) It causes a thickening of the heart ventricles, and stiffening of the heart walls, reducing the space inside the heart chambers and the effectiveness of the hearts contraction.

Clinical signs of heart failure secondary to hypertrophic cardiomyopathy:

- Hiding away
- Increased breathing rate
- Breathing with their mouth open
- Reduced appetite
- Lethargy
- Occasionally coughing
- Becoming suddenly unable to use both hind legs or one of their front legs

Diagnosis

We will be suspicious of heart failure after examining your cat. They often have a very high heart rate, but they can sometimes have a low heart rate, they sometimes but not always have a heart murmur and sometimes the heart can beat in an irregular rhythm. Some normal cats also have a heart murmur!

Cats are very good at hiding signs of illness so can go from being slightly off colour to really struggling to breathe very quickly. Unlike dogs that tend to have fluid build-up inside their lungs, cats usually have fluid build-up around their lungs between their lungs and their ribs preventing the lungs from expanding. This is best diagnosed with an ultrasound machine so we will ultrasound their chest and heart and possibly take some x-rays. If we are concerned about hypertrophic cardiomyopathy we will do an ultrasound scan of the heart to measure wall thickness.



A blood sample is taken to check if they have an overactive thyroid gland. The fluid from around the lungs is often sent away for analysis to check there are no other complicating factors. Some cats present to us with a thromboembolism. This is when a blood clot, formed in the heart, lodges in the aorta stopping blood flow to both hind limbs, or in the large vessels to either forelimb. This is very painful and will be diagnosed by feeling the temperature of the limbs and feeling pulses.

Treatment

- Oxygen therapy - Cats are very good at hiding signs of illness so they are often seriously ill before they show any signs. Therefore cats with heart failure often present as an emergency and need oxygen therapy.
- The fluid around the cat's lungs will need draining to allow for expansion of the lungs. This can sometimes be done under local anaesthetic but will often require sedation or a full anaesthetic.
- Furosemide (water tablet) – This is a diuretic which will help remove any remaining fluid from around the lungs and prevent it building back up. Initially this may need to be given intravenously until your cat is stable and can then be given orally. Sometimes when the diuretics are given initially, intravenous fluids will be required at a low dose to correct electrolyte balance.
- Ace-inhibitor – This is used to reduce the blood pressure and thus the amount of blood the body has to pump around the body. It also helps improve blood flow to the extremities.
- Pimobendan (vetmedin) – This is used in cats if they fail to respond to the above medication or deteriorate.
- For an embolism – These cases in the acute stages require strong pain relief and heparin to be given to dislodge the clot, so usually need to be hospitalised. They may also be treated with other drugs to prevent clotting e.g. clopidogrel and aspirin.

Long term management

Sadly we can only manage heart failure and not cure it. If your cat's heart condition is the result of an overactive thyroid this is curable although many of the effects on the heart will be irreversible. Your pet will need regular check-ups to ensure they are doing well and on the correct dose of medication. It is very helpful at home if you can measure your pets resting breathing rate. Count how many breaths they take over 15 seconds and then times it by 4. This should be between 20 and 40 breaths a minute. If it is more than this then please call us at the surgery to discuss. As with all our chronic conditions you will be entitled to a free check up with the nurse every 3 months to monitor their weight and general health.