



Heart disease is extremely common in small pets. Often it is quite straightforward to establish that an animal has heart disease (if, for example, a murmur is present). However the fact that your pet has abnormalities in the heart does not necessarily mean that they require (or will ever require) treatment. Heart disease and heart failure are NOT the same thing. In the early stages of heart disease most animals are able to cope although their heart is not working as well as normal. Animals can live with some forms of heart disease without showing any signs of illness at all. Heart failure occurs when the heart disease is more severe and signs of malfunction (usually coughing or breathlessness) develop.

It is important that your vet can recognise the early stages of heart failure (and therefore when to begin therapy). Investigations of animals with heart disease are important to identify early signs of failure and to establish the appropriate timing and type of therapy.

### What are the clinical signs?

When heart function is compromised there are many mechanisms that come into play to reduce the impact on the animal. Since few pets are athletic, heart disease can be present in many without their owner noticing any ill effects. Many cases of heart disease are detected by the vet at routine examination, eg before vaccination. Abnormalities are often detected in the first 2 years of life, if congenital lesions are present; or in middle-aged to older pets when acquired degenerative changes develop. Owners generally notice signs once heart failure has developed or if their pet has problems during periods of stress or excitement.

Clinical signs of heart disease vary according to the area of the heart affected. They range from coughing and weight loss to abdominal distension (ascites) or collapse.

### Physical examination in heart disease?

#### *Clinical examination*

A full clinical examination is essential in all patients with suspected heart disease. Abnormalities in the heart may cause changes to the pulse rate, rhythm or strength. The pulse should be assessed at the same time as listening to the heart to confirm that every heartbeat generates a strong pulse. Poor heart function may also result in congestion of the veins (fluid retention). By listening to your pets' heart with a stethoscope your vet can determine the rate and rhythm of heartbeats and hear murmurs or other abnormal heart sounds. Ideally blood pressure should be measured in all patients with heart disease.

### Imaging of heart disease

#### *X-rays*

X-rays are very important in the diagnosis and monitoring of heart disease. Assessment of the heart size and shape itself is important but the lungs and blood vessels visible on the radiograph are also examined. At least two pictures of the chest (one with the animal lying on its side and one lying on its belly) are needed for complete x-ray assessment of the heart. In almost all cases it is safer to administer a low dose of an appropriate sedative than to risk of a patient struggling when x-rays are being taken.

#### *Echocardiography*

Ultrasound is the method of choice for determining the cause of structural heart disease. It allows the vet to see the heart structures, ie myocardial thickness, the relative sizes of the heart chambers, and the position of the valves and major blood vessels. Echocardiography also allows the vet to watch the heart beating. The motion of the valves, contraction of heart walls and abnormal patterns of blood flow can be seen. Echocardiography requires considerable knowledge and experience and should always be performed by experts.

### Blood tests for heart disease

Routine laboratory tests (particularly assessment of liver and kidney function) are important for monitoring of animals with heart disease. The dose of many drugs used in the treatment of heart disease may need to

## Investigating heart disease



be altered in patients with reduced liver or kidney function. It is important to assess kidney function in all patients before they start on long-term therapy for heart failure.

Electrolyte abnormalities are common in patients with heart failure and some drugs can make these imbalances worse. Low potassium levels can develop as a result of inappetence and the use of some diuretics, eg furosemide.

There are now some laboratory tests which allow us to measure substances produced by damaged hearts and these tests are likely to become increasingly important in the diagnosis and management of heart disease in the future.

### Other tests

#### *Electrocardiography*

The electrocardiogram (ECG) measures the electrical activity in the heart. Although measurements made on ECG can provide an approximate guide to the size of specific heart chambers, x-ray or ultrasound are better for assessing heart size. The most important use of ECGs is in the monitoring of abnormal heart rhythms (arrhythmia).

**If you want any other information on health issues concerning your dog please contact your local Veterinary Surgeon.**