



Mitral valve disease is the most common cause of a heart murmur in dogs. Many cases are detected by a vet after a routine examination (such as before vaccination) before dogs show any signs of illness. If your dog has been diagnosed with mitral valve disease your vet will offer advice on when (and whether) treatment is necessary. Many dogs with this condition live long and happy lives.

What is the mitral valve?

The dog's heart, like that of humans, is a muscular pump with four separate chambers. The right side of the heart sends blood to the lungs where it picks up oxygen. The left side of the heart pumps the blood around the body. The four areas of the heart are separated by valves that ensure the blood always flows in the correct direction through the heart. The mitral valve lies between the 2 chambers on the left side of the heart. It prevents blood from flowing backwards (towards the lungs) rather than around the body when the heart contracts.

What causes mitral valve disease?

Damage to the mitral valves can occur in a number of ways. The most common disease is degeneration of the valve as a result of ageing (this is called endocardiosis). In other cases the valves may fail to develop properly, eg mitral dysplasia, or can be affected by infections carried in the blood (endocarditis).

Damaged valves do not work properly - abnormal valves allow leakage of blood between the heart chambers. When valves are 'leaking' the abnormal blood flow can be detected when listening to the heart (a murmur).

If the valve is leaking not all the blood leaves the heart with each contraction and so the heart has to beat faster and harder to pump the same amount of blood out into the circulation. The increased work eventually leads to heart failure.

What are the signs of mitral valve disease?

Many dogs with mitral valve disease have no outward signs of illness. The murmur is often detected by a vet after a routine examination (often at a health check at the time of vaccination). Degeneration of the valve is more common in certain breeds of dog, particularly small breeds. In some breeds - notably the Cavalier King Charles Spaniel (CKCS) - dogs often inherit the condition from their parents. If your dog is from a breed with a high risk of developing mitral valve disease you might ask your vet to check them for a presence of a murmur. Most animals with mitral valve disease are middle-aged or older but young animals can be affected.

The initial sign of mitral valve disease may be reluctance to exercise, or coughing due to heart failure or direct pressure on the large airways by an enlarged heart.

How do vets diagnose valve disease?

If your vet hears a murmur when listening to your dog's heart they may want to do some other tests. Murmurs are very common findings and if your pet is well there may be nothing to worry about. However, even if your pet has a problem such as coughing your vet may find that the cough is caused by something else and the disease of the mitral valve is not causing any problems.

X-rays are very important in the diagnosis and monitoring of heart disease. On the x-ray of your dog's chest your vet will be able to see the size of the heart and also any effects on the lungs and blood vessels. Enlargement of the blood vessels in the lungs or evidence of fluid in the chest may be the first indication of heart failure and, if these changes are present, treatment should be started immediately. One of the important benefits of chest x-rays is that they will help your vet to rule out respiratory disease as a cause of coughing.

Although examination and other tests may make your vet suspect that your dog has heart disease, ultrasound is the method of choice for finding the actual cause. With ultrasound you vet will be able to see the heart valves and it may be clear that they are not meeting correctly. With some special ultrasound

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machines, patterns of abnormal blood flow around the valve can be seen. Ultrasound examination of the heart requires considerable knowledge and experience and should always be performed by experts.

Your vet may also want to do some blood tests (particularly to check that their kidneys are working properly) before starting your pet on treatment.

Will my dog get better?

If your dog has damaged heart valves these will not repair. The only permanent solution is to replace the valves. In man, replacement of damaged heart valves is possible and whilst this procedure has been carried out successfully in dogs (usually those born with a malformed valve) it is certainly not considered standard practice in pets. However, since the disease often causes few problems your pet may be able to live quite happily with the disease. If heart failure develops medication can help your pet to lead a happy life.

Can mitral valve disease be treated?

Many animals with mitral valve disease show no signs of heart disease and these patients require no specific treatment. If your pet is not showing any signs of ill health your vet will just monitor them regularly to detect any progression of disease. If heart failure develops then appropriate treatment can be started.

There are many drugs that can be used to help animals with heart failure these include:

- Diuretics (usually furosemide and spironolactone) - to stop fluid retention in the circulation and the lungs
- ACE inhibitors - to help to prevent fluid retention and make it easier for the heart to pump blood
- Pimobendan - to improve efficiency of heart function
- Digoxin - to slow the heart rate and may help it to function more effectively.

Not all these drugs are appropriate in every animal and your vet will decide on the best treatment programme for your pet and will discuss these choices with you. Often a combination of drugs is needed and the doses of drugs may change with time. Usually once treatment has started it will need to be continued for the rest of your pet's life.

There is no evidence that it is beneficial to start treatment before signs of heart failure develop in dogs with mitral valve disease.

How long will my dog live?

Many animals with degenerative mitral valve disease live out a normal life span with no signs of heart disease. Some CKCS may develop heart murmurs at only a few years of age but not even all of these will develop clinical signs associated with the condition. Animals with significant heart failure require therapy and the outcome will depend upon how well they respond to this therapy.

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