

What is aortic stenosis?

Aortic stenosis describes a narrowing around the aortic valve which is located in the large artery leaving the heart. Narrowing around this valve increases the workload of the pumping chamber and may result in inadequate heart output resulting in impaired ability to exercise and sometimes episodes of collapse.

What causes this disease?

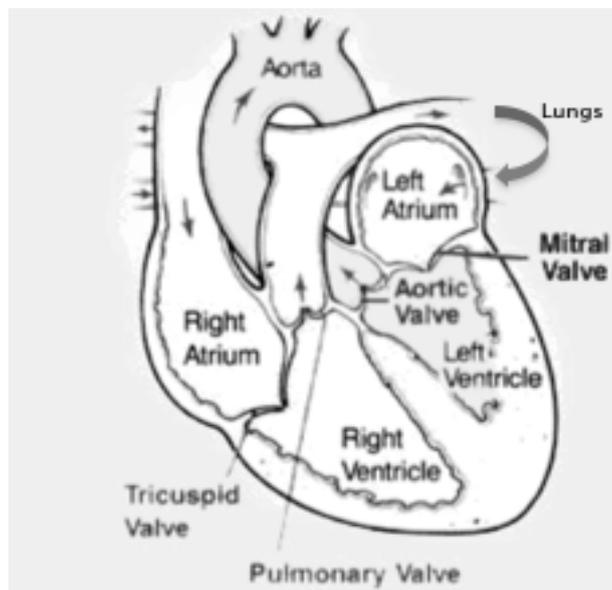
Aortic stenosis is a genetic disease more common in certain breeds such as Boxers and Golden Retrievers. This condition results in a narrowing close to the aortic valve either associated with the valve itself or may manifest as a ring or ridge of tissue just below the valve. This condition is present from birth and the severity can increase during the first year of life.

required especially in predisposed breeds with a loud heart murmur and also in individuals intended for breeding. Even in dogs with severe disease, signs of reduced heart output such as collapse and reduced ability to exercise are rare in the first year of life so the absence of signs should not preclude investigation.

How is the aortic stenosis diagnosed?

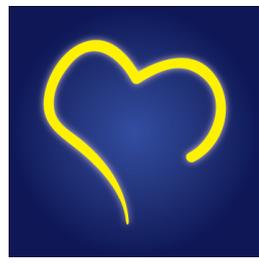
Echocardiography (ultrasound of the heart) is a safe and painless test that can be performed without any anaesthetic or sedation. In our centre you can stay with your pet to reduce their anxiety whilst this test is performed. Ultrasound allows us to assess heart size, function and measure the speed of blood flow through the heart valves as changes in these parameters are the hallmarks of this disease.

The speed of blood flow through the valve allows us to calculate the pressure difference and this gives an indication of disease severity – mildly affected dogs have pressure gradients of 20–49mmHg, moderately affected dogs have pressure gradients of 50–99mmHg and severely affected dogs have pressure gradients >100mmHg.



What are the signs of this disease?

The most common sign of this condition is an audible heart murmur that is detected at puppy checks. Whilst non-pathological murmurs (also known as “innocent” or “puppy” murmurs) may also be present at this age further investigation may be



In some dogs abnormal heart rhythms are associated with this condition and this can have implications for treatment. As some abnormal heart rhythms are intermittent, we often place heart monitors (also known as Holter monitors or ambulatory ECGs) onto dogs that they wear at home for 24 hours whilst performing normal activities. At our centre, these recordings are analysed by veterinary cardiologists rather than technicians trained to analyse recordings from human patients.

The image shows a Boxer wearing a heart monitor which is placed underneath a protective vest:



Screening of breeding dogs

We advise pre-breeding screening in breeds such as Boxers where the disease is common. Pre-breeding screening involves both auscultation (listening with a stethoscope) and also echocardiography due to the high proportion of non-pathological murmurs in this breed. Dogs with this condition should not be used for breeding.

How is aortic stenosis treated?

Medical treatment with beta blockers such as atenolol can help to alleviate some of the signs associated with aortic valve stenosis. Beta blockers dampen the effects of adrenaline on the heart muscle and, by minimising surges in heart rate, can partially alleviate that problems associated with the partial obstruction to blood flow.

Surgical treatment using a keyhole technique where a special catheter is guided into the narrowed valve from an artery in the hindleg is described in dogs but is not suitable for all cases.

Lifestyle management

Dogs with aortic stenosis should be fed a proprietary diet and kept at the correct body weight. There is no evidence that a raw diet or supplements such as hawthorn or co-enzyme Q10 will help this condition.

Dogs should be allowed to exercise but, if possible, surges in activity should be avoided as this is when collapse may occur.

Aortic stenosis does not preclude sedation or general anaesthesia and we can advise your vet on appropriate drug regimes. Due to the increased risk of valve infection, antibiotics should be given around the time of surgery.

Whilst mild cases of this condition may be tolerated without ever showing any signs, dogs with severe disease will require regular monitoring by a specialist veterinary cardiologist.