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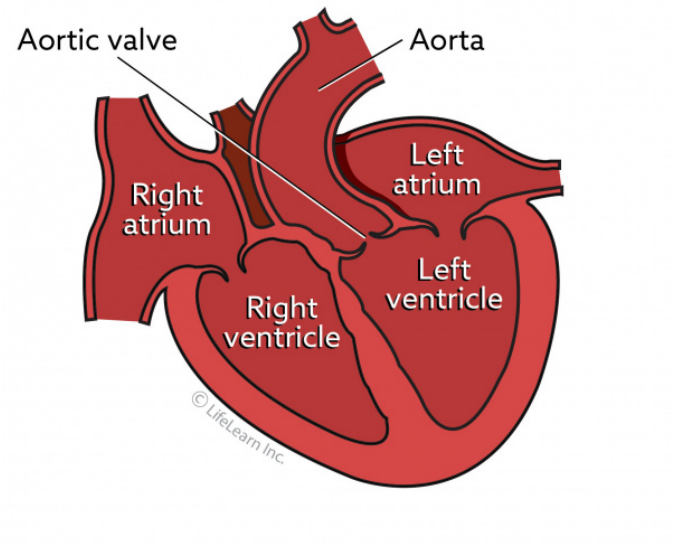
Aortic Stenosis in Cats

What is aortic stenosis?

Aortic stenosis is a rare heart disease in cats. Aortic stenosis describes a narrowing at the aortic valve of the heart. The aortic valve is the valve through which blood leaves the heart, traveling to the rest of the body. When this valve is narrowed, the heart (and specifically the left ventricle, which is the chamber that pumps blood through the aorta) must work harder to force blood out through the valve. This additional work can have a number of harmful effects on the heart, leading to muscle failure and other complications.



There are three types of aortic stenosis depending on the location of the narrowing of the valve. The most common types in cats occur within the valve (valvular) and just below the valve (subvalvular), referred to as “subaortic stenosis.”

"Aortic stenosis is often initially detected on a routine physical examination, when the veterinarian notices a heart murmur"

What are the clinical signs of aortic stenosis?

In many cases, affected cats are do not show any signs. Aortic stenosis is often initially detected on a routine physical examination, when the veterinarian notices a heart murmur. In moderate to severe cases, signs may be noted at birth; in mild cases, the murmur may not be noted until the pet is 6-12 months old.

In cats with severe disease, you may observe signs related to heart dysfunction. These signs include lethargy, exercise intolerance, shortness of breath, and fainting (syncope). These signs are typically related to the heart’s inability to circulate blood effectively.

Signs of heart failure may also be seen in severe cases of aortic stenosis. These signs include coughing, increased breathing effort, and open-mouth breathing. In heart failure, fluid begins to the pool in the lungs; the signs of heart failure are associated with this fluid accumulation. Heart failure is more common in cats that have other heart valve problems occurring at the same time, but can be seen with aortic stenosis alone.

How is aortic stenosis diagnosed?

On examination, your veterinarian will typically hear a heart murmur in an area of the chest that is associated with aortic stenosis. A murmur in this area strongly suggests aortic stenosis.

The tests most commonly used to confirm a diagnosis of aortic stenosis include chest radiographs (X-rays), electrocardiography (ECG), and echocardiogram (ultrasound of the heart).

- Chest radiographs (X-rays) may look normal early in the course of disease, or in cats that are only mildly affected. In more severe cases, however, radiographs often show enlargement of the left side of the heart and a visible bulge of the aorta.
- ECG is often normal in affected cats. In some cases, however, ECG can identify arrhythmias or enlargement of the left ventricle of the heart.
- An echocardiogram (heart ultrasound) is the most sensitive test for diagnosing aortic stenosis. On echocardiogram, a fibrous band of tissue can often be seen at the aortic valve. Color-flow Doppler (a test that assesses the motion of the blood in the heart) can be used to observe turbulent blood flow through that region of the heart.

Routine laboratory tests (complete blood cell count, serum biochemistry, and urinalysis) will often be performed to assess your cat's overall health. These tests are normal in most affected cats, though mild changes may sometimes be observed.

Having baseline laboratory values will allow your veterinarian to monitor your cat, especially if medications must be used.

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How is aortic stenosis treated?

In mild cases of aortic stenosis, treatment is typically not required. Your cat may be closely monitored for signs of disease progression, but medication is typically not needed.

In moderate to severe cases, long-term medication may be required. Beta blockers (atenolol, propanolol) can be used to help the heart work more effectively. However, due to the rarity of this condition in cats, no studies have proven their benefit. In some cases, hospitalization may be required for the initial stabilization of clinical signs associated with aortic stenosis. Unlike in dogs, surgical options are even less researched and unknown if they are possible.

What is the prognosis for aortic stenosis?

Echocardiography can be beneficial for developing a prognosis for each individual patient.

Pressure differentials across the valve (the difference in pressures between the two sides of the valve, which can be measured with echocardiography) are directly correlated with the risk of sudden death. Cats with a high pressure differential are at a high risk of sudden death within the next year, while cats with a low pressure differential are at a low risk of sudden death.