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# INFO: Aortic Stenosis (AS)

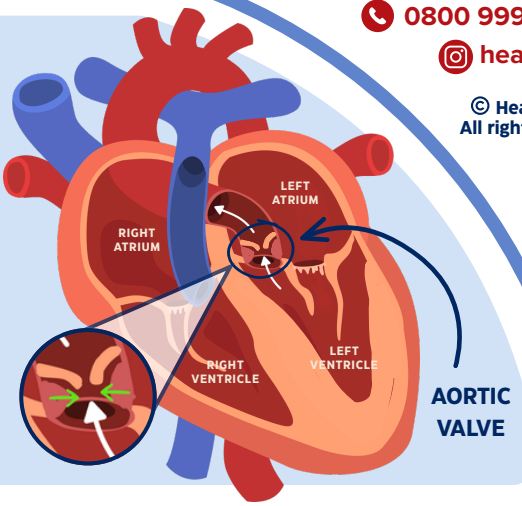
## WHAT IS AS?

A **congenital defect** (an abnormality your pet was born with) of the **aortic valve**, or just underneath it: **sub-aortic stenosis (SAS)**.

This forms a **narrowing** (stenosis) in the aorta, where the blood leaves the left side of the heart. The blood has to flow **faster** through the valve, causing turbulence in the blood flow which we can hear as a **heart murmur** (a 'whooshing' noise) when we listen with a stethoscope.

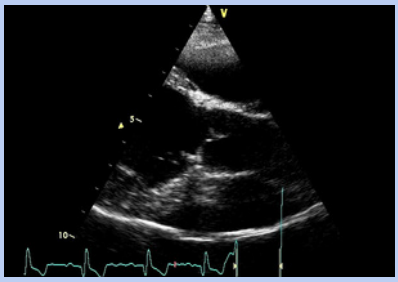
The heart has to **work harder** to force blood through the narrower space, which leads to **thickening of the muscle**. This becomes worse over time, leading to heart **enlargement** and eventually **congestive heart failure** (CHF).

Some patients with AS/SAS are prone to bursts of **fast, abnormal heart rhythms** which can cause 'heart attack' and **sudden death**.




## HOW DO YOU DIAGNOSE AS?

- Your vet may hear a **heart murmur** ('whooshing' noise) - this simply indicates a change to the normal blood flow, it **does not tell us what the cause is.** They may recommend a heart scan to investigate.
- **Echocardiography** (heart ultrasound scan) is the only way to definitively diagnose aortic stenosis. It is used to look at the heart structures and function, assess severity of disease to determine appropriate treatment and look for other defects.
- **ECG** monitors electrical activity, checking heart rate and rhythm. Patients can develop irregular rhythms (arrhythmias).
  - Ambulatory ECG (**Holter**) allows us to check for intermittent dangerous rhythm away from the clinic



*Echocardiography showing the aortic valve with aortic stenosis*

## WHAT ARE THE CLINICAL SIGNS?

*Speak to your vet if you think your pet may have any of these signs.*

**It is common for young patients to have no clinical signs and still have severe structural changes.**

**Clinical signs can include:**

- Lethargy
- Reduced exercise tolerance
- Breathlessness / increased respiratory rate or effort, particularly on exertion or excitement
- Weakness or collapse, particularly on exertion or excitement
- Decreased appetite

Sadly, sudden death may be the first and only clinical sign.

## HOW IS AS TREATED?

We start medication to reduce the workload of the heart, support cardiac function and when the patient develops **pulmonary oedema** (fluid in the lungs) in congestive heart failure. Medications we may use are:

- **Atenolol:** to reduce cardiac workload and reduce heart rate
- **Diuretics:** to remove pulmonary oedema
- **ACE inhibitors:** improve circulation and help the heart pump more efficiently.
- **Spironolactone:** weak diuretic and slows heart scarring.
- **Anti-arrhythmic/rate control drugs:** to slow heart rate in fast arrhythmias and reduce dangerous irregular beats

**Palliative** procedures such as **balloon valvuloplasty** (BVP) or placing a **stent** to stretch or hold the aortic valve open may be considered in very specific cases. In rare cases, surgery performed under **cardiac bypass** may be an option.

**Aortic Stenosis is hereditary - patients with it should not be used for breeding.**

## HOW ARE PATIENTS MONITORED?

### IN THE CLINIC:

- **Echocardiography** is used to track structural changes over time, and look for signs of changes which may require additional treatment.
- **ECG** is indicated if patient develop new clinical signs (such as weakness or collapse) as this may indicate a change in heart rhythm when the heart is enlarged. An ambulatory 24 or 48-hour ECG (Holter) may be used to assess heart rate and rhythm at home, away from the clinic.
- **Blood tests** to check kidney function, hormones and other organs are useful before starting medication and to assess effects of long term medication

### AT HOME:

- Measuring **sleeping respiratory rate** (SRR) and the change in trend (increasing or decreasing) allows us to assess whether pulmonary oedema (fluid in the lungs) is present and check how well patients are responding to CHF medication.

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**See our website for information on heart testing schemes**