INFO: Tricuspid valve dysplasia (TVD)

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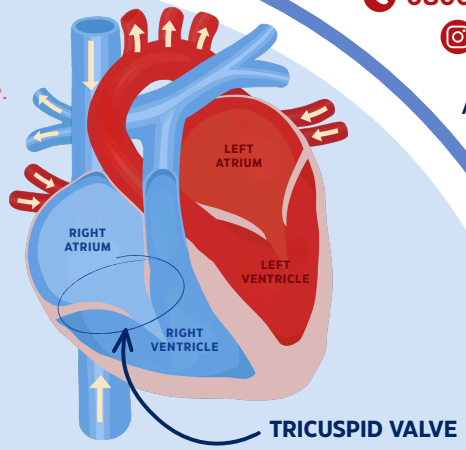
WHAT IS TVD?

A **congenital defect** (an abnormality your pet was born with) of the **tricuspid valve**, which sits between the right atrium and right ventricle.

The malformed valve leaflets **do not close properly**, so the valve **leaks**, and blood can flow backwards into the left atrium from the left ventricle.
This creates turbulence in the blood flow which we can hear as a **heart murmur** (a 'whooshing' noise) when we listen with a stethoscope.

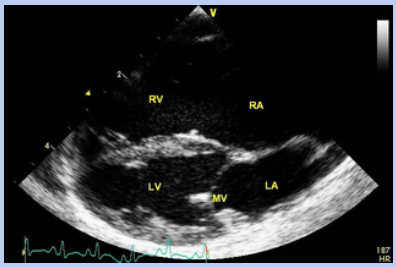
This becomes worse over time, leading to heart **enlargement** and eventually **congestive heart failure** (CHF).

Some patients with TVD are prone to bursts of **fast, abnormal heart rhythms** which can force the heart to work too hard.



HOW DO YOU DIAGNOSE TVD?

- 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 tricuspid dysplasia. 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).
- **Abdominal ultrasound** may be used to check the abdomen for free fluid if there has been unexpected weight gain or abdominal swelling.



Echocardiography showing tricuspid dysplasia and right-sided enlargement

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
- Pale or blue / purple tinged gums or tongue colour, particularly on exertion or excitement
- Weakness or collapse
- Abdominal swelling
- Decreased appetite

HOW IS TVD TREATED?

We start medication to support heart function if the heart is **enlarged**, and when the patient develops **ascites** (fluid in the abdomen) or **pleural effusion** (fluid around the lungs) in congestive heart failure. Medications we may use are:

- **Pimobendan:** to support the 'pump' function of the heart
- **Diuretics:** to remove ascites and pleural effusion
- **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

Surgery may be an option to **improve long term function** of the tricuspid valve. This is performed under **cardiac bypass** for specific patients in CHF

Tricuspid dysplasia 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:

- Assessing **breathing effort** can help look for signs of pleural effusion.
- Monitoring for **abdominal swelling** - you can even measure around the waist of your pet (behind the ribs) to check for significant change, alongside noting any **unexpected weight gain**.

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