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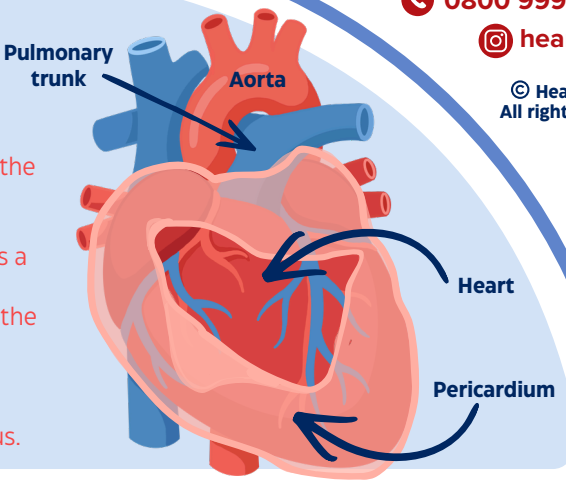
INFO: Pericardial Effusion (PE)

WHAT IS A PERICARDIAL EFFUSION?

The **pericardium** is a **thin, fibrous sac** which the heart sits inside. There is normally a very tiny amount of fluid between the heart and the inner lining of the pericardium for lubrication.

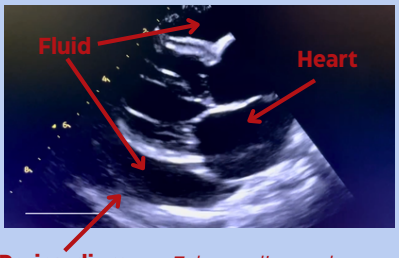
If an **abnormal volume of fluid** builds up within the sac, we call this a pericardial effusion (PE). The pericardium cannot easily stretch to accommodate fluid build-up, resulting in **increased pressure** within the pericardium which **compresses** the heart.

The heart cannot fill, and the blood pumped around the body is reduced. We call this **cardiac tamponade** - it can be very dangerous.



HOW DO YOU DIAGNOSE A P.E?

- Your vet may be suspicious of pericardial effusion based on the **clinical signs** that your pet presents with. They will reccommend echoardiography as the next step.
- **Echocardiography** (heart ultrasound scan) is the only way to definitively diagnose a P.E. It is used to look at the heart structures and function, look for fluid within the pericardium and see if there is cardiac tamponade. It is also used to look for possible causes.
- **Xrays** of the chest can be useful - signs of PE can be detected and sometimes seen unexpectedly, prompting echocardiography for full assessment and diagnosis. They can be used to look for possible causes or disease linked to P.E
- **ECG** monitors electrical activity, checking heart rate and rhythm. Patients can develop irregular rhythms (arrhythmias).



Echocardiography showing pericardial effusion

WHAT ARE THE CLINICAL SIGNS?

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

Many patients present with severe signs in an emergency, although chronic cases may not have obvious symptoms.

Clinical signs can include:

- Weakness or collapse
- Abdominal swelling
- Cough
- Breathlessness / increased respiratory rate or effort
- Unexplained weight gain
- Lethargy
- Reduced exercise tolerance
- Decreased appetite
- Vomiting

Patients can be at risk of sudden death.

HOW IS P.E TREATED?

The most important step is to reduce compression of the heart by draining the fluid from the pericardial space.
This quickly resolves the clinical signs, and the patient will feel much better!

Pericardiocentesis: This is performed under **sedation** by **inserting a needle into the pericardium**, guided by ultrasound scan. The fluid is drained with a syringe.

Recurrent P.E can be drained multiple times, although repeated puncture of the pericardium can lead to scar tissue formation and stiffening of the pericardium.
This means that *less fluid is required to cause compression of the heart* each time. Small volumes can be tricky to drain without big risks of puncturing the heart.

Pericardectomy: Open chest surgery to **remove a small window of the pericardium**, meaning fluid can no longer build up and compress the heart (it will drain into the chest and be absorbed by the body). This is recommended in pets with recurrent idiopathic P.E and can be very successful.

WHAT CAUSES A P.E TO OCCUR?

The most common diagnosis is '**idiopathic pericardial effusion**', which means that **no obvious underlying cause can be found.**

Other reasons for a P.E to occur include:

Obstruction to normal drainage of normal pericardial fluid:

- Malignant cancer (e.g. haemangiosarcoma, mesothelioma, heart base masses)
- Benign growths
- Foreign body

Build-up of abnormal fluid in the pericardial space:

- Bleeding (e.g clotting problems or rupture of cardiac chambers)
- Infection
- Inflammation

Cats can develop P.E secondary to congestive heart failure. Often medication can resolve the P.E without the need for pericardiocentesis.

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