



SOUTH CAROLINA
**VETERINARY
SPECIALISTS**
State of the Art Care, In the Heart of the State

Pericardial Effusion

What is the pericardium and what does it normally do?

The pericardium is a thin membrane that surrounds the heart. While it holds a small amount of fluid around the heart, it is not necessary for normal heart function.

What is pericardial effusion?

Pericardial effusion is the accumulation of fluid within the pericardial sac (and around the heart). This can cause *cardiac tamponade*, compression of the heart by the increased fluid pressure and a secondary decrease in heart function.

What causes pericardial effusion?

The most common cause of pericardial effusion in dogs is a tumor associated with the heart or pericardium. These masses are most commonly associated with the right atrium and are malignant. In cats, pericardial effusion is typically associated with heart disease (this is rare in dogs). Rarely, bleeding disorders and infectious diseases can cause pericardial effusion in cats or dogs. Finally, there are cases in which no direct cause can be found for the pericardial effusion. This is called *idiopathic* pericardial effusion.

What clinical signs does pericardial effusion cause?

Weakness and collapse are the most common clinical signs. Labored breathing, and pale gum/tongue color are also common. Finally, abdominal distension can be seen with tamponade.

- *Right-sided heart failure* results from the tamponade. This leads to abdominal fluid accumulation called *ascites*. This resolves with treatment of the effusion.

What laboratory changes does pericardial disease cause?

While some patients have mild laboratory changes, the vast majority have normal bloodwork.



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What testing is recommended for pericardial effusion patients?

In evaluating patients with heart disease, there are many things that need to be considered. Urinalysis, CBC and chemistry are performed to evaluate for systemic illnesses that may be present. The heart is evaluated with a combination of chest radiographs, echocardiogram, and electrocardiogram (ECG). Once the fluid is removed from the pericardium, it is analyzed for abnormalities.

Most patients evaluated for heart disease will need the following tests:

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| ■ Chemistry profile | ■ Chest radiographs | ■ Pericardial fluid analysis |
| ■ Urinalysis | ■ ECG | ■ Abdominal ultrasound |
| ■ Complete Blood Count (CBC) | ■ Echo-cardiogram | |

- *Chest Radiographs* or *x-rays* are used to evaluate overall heart size and for fluid in or around the lungs.
- *Electrocardiogram* or *ECG* is a non-invasive way to evaluate the electrical activity of the heart. *Electrical alternans* is the classic ECG abnormality with pericardial effusion.
- *Echocardiogram* or *cardiac ultrasound* is a non-invasive test that uses sound waves to create images and allows us to check heart function and for pericardial effusion.

What treatment options are available for patients with pericardial effusion?

Tapping the fluid from the pericardium (*pericardiocentesis*) is the most important short term treatment to alleviate clinical signs. Beyond this, the treatment of pericardial effusion is highly dependent on the cause of the disease. Thoracoscopic removal of the pericardium can be useful in certain cases. Unfortunately, some cases have no good treatment options.

- *Thoracoscopy* is a minimally invasive surgical procedure that uses scopes and other instruments to remove the pericardium.
- If heart disease is present, appropriate medical treatments will be recommended.
- If a mass is present, further treatment options will be discussed.
- If there is no obvious cause of the effusion, periodic monitoring is recommended.



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What sort of long-term monitoring is recommended for patients with pericardial effusion?

Recommendations for dogs with pericardial effusion are highly variable and dependent on underlying disease. Periodic rechecks for ultrasound are often recommended, but the frequency is case specific. Periodic tapping of fluid is required in many cases.

What is the prognosis with pericardial effusion?

The prognosis with pericardial effusion is quite variable. Because many patients have a mass as the underlying cause, the prognosis is often guarded. While some patients will live for years with this disease, many only live for days to weeks after the time of diagnosis. Of course, we will strive to maintain the maximum quality of life and longevity of your pet.