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## Animal Specialty Hospital of Florida

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### Pericardial Disease:

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The heart is held in place within the chest cavity by a sac that is called the *pericardium*. When patients have pericardial disease, fluid commonly accumulates within the pericardial sac. This fluid is referred to as **pericardial effusion**. When too much fluid accumulates around the heart, the increased pressure makes it difficult for the right side of the heart to fill with blood. If this occurs suddenly, it typically leads to weakness, collapse, difficulty breathing, or fainting (syncope). If this occurs over a period of days to weeks, then this leads to chronic, increased pressure in the systemic veins in the body, which may cause congestion of the abdominal organs (liver, spleen, intestines, etc.), and secondary fluid accumulations. Fluid may accumulate in the abdomen, and this is termed abdominal effusion (ascites). Fluid may also accumulate in the chest cavity outside of the pericardial sac and lungs. This is termed pleural effusion. Occasionally fluid may build up in the subcutaneous tissues (under the skin), leading to swelling and puffiness. This is termed subcutaneous or “pitting” edema.

Patients with too much pericardial effusion may require a therapeutic procedure to manually remove the fluid from around the heart. This is called a **pericardiocentesis** (pericardial “tap”). This is a moderately invasive procedure that involves the temporary placement of a catheter into the pericardial space with which the fluid is drained off with a syringe. We recommend that patients that have had a pericardiocentesis to be monitored in the hospital for a minimum of 24 hours on telemetry (continuous EKG) monitoring.

There are three main causes of pericardial effusion in dogs. The most common cause is hemorrhage from a **mass** on the heart itself. Masses on the right atrium/auricle of the heart most commonly turn out to be a serious type of cancer called hemangiosarcoma. Masses at the heart base are commonly a neuroendocrine tumor known as a chemodectoma. Most hemangiosarcomas result in bleeding into the pericardial space (hemopericardium), and the fluid removed is bloody. Heart-based masses may cause intrapericardial bleeding or cause fluid accumulation that is not bloody. Pericardial effusion may develop secondary to **heart disease**. Dogs may occasionally develop fluid accumulation within the pericardial space secondary to congestive heart failure. Rarely, dogs may have bleeding into the pericardial space secondary to rupture of a heart chamber from severe underlying heart disease. This is most commonly a rupture of the left atrium, and is secondary to severe, chronic mitral valvular disease. Dogs may occasionally develop pericardial effusion (typically hemorrhage) for unknown reasons, and this is referred to as **idiopathic** pericardial effusion. The prognosis for pericardial effusion varies with the underlying cause.

Diagnosis of pericardial effusion is made most effectively with echocardiography (ultrasound of the heart). This generally allows us to not only diagnose the presence of pericardial effusion, but also determine the underlying cause as well as guide therapy.

Recurrent pericardial effusion may sometimes be palliated by a procedure to remove all or a portion of the pericardial sac. This is a surgical procedure called a pericardectomy. This may be done thoroscopically or by a procedure to open the chest between the ribs (thoracotomy) or splitting the sternum (median sternotomy). Typically only a portion of the pericardial sac may be removed via thoracoscopy or thoracotomy (subtotal pericardectomy), whereas the majority of the pericardial sac may be removed via

sternotomy. The pros/cons of each procedure must be evaluated in light of the patient's underlying problems, and consultation with a veterinary surgeon is recommended.