

Chronic Degenerative Valvular Disease - “Endocardiosis”

What is degenerative valvular disease (endocardiosis)?

As some dogs age, one or more of the four valves in the heart become “leaky.” Whereas the valve was once delicate and able to ensure blood flow only in the forward direction, it becomes thickened and irregular, and now allows blood to flow backward within the heart. This backward flow is referred to as *valvular insufficiency* or *regurgitation*. The condition is known as **chronic degenerative valvular disease** and is often called **endocardiosis** in dogs. This is an acquired heart disease. That is, it is not present at birth, but instead occurs as an aging change. While some breeds develop this condition at a relatively young age (e.g. Cavalier King Charles Spaniels), most dogs do so at middle age or later.

How is endocardiosis diagnosed?

The valvular insufficiency that occurs as a result of endocardiosis is often first suspected based on detection of a heart *murmur* during routine **physical examination**. This is an abnormal “whooshing” sound associated with the normally crisp heart sounds, heard while listening to the heart with a stethoscope. The murmur is described according to its loudness and where it is best heard on the chest wall. These findings depend on which of the four valves in the heart are affected, and how much blood is consequently allowed to flow backward. A cough may have been noted in the past and/or during physical examination. Although coughing in dogs with heart disease may be due to the presence of congestive heart failure, it is more often due to physical pressure from an enlarged heart on the nearby trachea (windpipe) and its main branches.

Definitive diagnosis of endocardiosis requires an **echocardiogram** (ultrasound examination of the heart). Affected valves are typically seen to be thickened, so that when the leaflets of the valve meet to prevent backflow of blood, they do not form a perfect seal as they should. The result is valvular insufficiency (or regurgitation). This can be seen using an ultrasound tool called “color flow Doppler,” which displays blood in different colors according to its direction and how smoothly it is flowing from one chamber of the heart to another. Measurement of the heart’s chambers may reveal enlargement of one or more of them.

Other diagnostic tests may be useful depending on the specific situation. **Chest x-rays** provide a “big picture” view of the heart and allow detection and monitoring of heart failure if present. They can also be important in ruling out other causes of coughing and difficulty breathing. An **electrocardiogram (EKG or ECG)** is useful to confirm or rule out arrhythmias (abnormalities in cardiac rhythm) and to monitor their response to antiarrhythmic therapy. Measurement of blood pressure and certain kinds of blood work may also be valuable, depending on overall condition and medications being used.

How is endocardiosis treated?

No medication has been shown to slow the progression of endocardiosis in its earlier stages. Prior to the onset of congestive heart failure it is possible, but not proven, that dogs with severe heart enlargement may benefit from treatment with an **ACE inhibitor**, an example of which is the drug **enalapril**. ACE inhibitors cause blood vessels throughout the body to relax, creating more space within them for fluid. This reduces the workload placed on the heart and may delay the onset of congestive heart failure.

If congestive heart failure is present or develops at some point after initial diagnosis, medical therapy is begun immediately. Long-term therapy for congestive heart failure includes the medication **furosemide** (often referred to by one of its brand names, **Lasix** or **Salix**) as well as an ACE inhibitor. Lasix is a *diuretic* agent. It causes increased urination and so decreases fluid retention within the body, again reducing the workload on the heart. Other medications may be used as well, depending on the initial response to these two agents, the presence of arrhythmias, and the nature of the symptoms present.

It is worth noting that definitive therapy for diseases causing valvular insufficiency, performed routinely in people, involves surgical replacement or repair of the affected valve using cardiac bypass. Although this is performed less frequently in dogs, largely due to financial reasons, it is performed at certain veterinary institutions throughout the country and is a potential topic for discussion.

What is the prognosis? What should I watch for?

The rate of progression for dogs with endocardiosis is extremely variable, as is long-term prognosis. When this condition is diagnosed without any symptoms of heart failure, prognosis cannot be accurately predicted. While some asymptomatic dogs progress relatively quickly and experience congestive heart failure within months, others progress more slowly and may remain asymptomatic for years or even indefinitely. If congestive heart failure is present at the time of initial diagnosis, this does worsen overall prognosis, although many dogs respond very well to medical therapy for several months, and sometimes longer.

Once the diagnosis of endocardiosis is made, it is important to watch at home for symptoms that may be referable to heart disease or heart failure. These may include **coughing, lethargy, weakness, intolerance to activity or exercise, loss of appetite, abdominal distension, rapid or labored breathing**, and **fainting** episodes. If any of these are noted, please contact either your regular veterinarian or Dr. Marshall at Veterinary Specialty Services as soon as possible to discuss a plan. If you feel that the problem should not wait and requires immediate attention, then an emergency visit is warranted.