

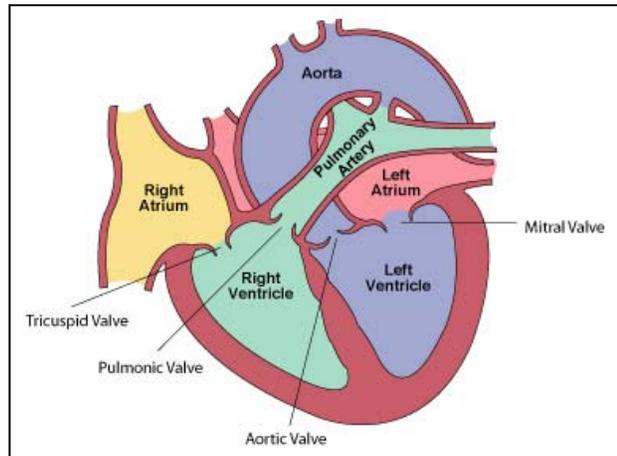
Endocarditis

What is endocarditis?

Endocarditis refers to infection and inflammation of the heart endothelium, particularly the heart valves. It is also referred to as endocardiosis.

What causes endocarditis?

Endocarditis is usually caused by infection from bacteria (especially gram-positive bacteria such as coagulase-positive staphylococci). Rarely, fungal infections, rickettsia or *Bartonella* will cause endocarditis. Bacterial infection in the mouth that is associated with periodontal disease, bone infections, prostate infections, and severe skin infections are all associated with the development of heart valve infection and inflammation. Invasive diagnostic or surgical procedures that force bacteria into the bloodstream, immunosuppressive drugs or treatments and cancer also increase the risk of developing endocarditis.



How does a pet develop endocarditis?

Bacteria enter into the bloodstream from mouth or other portals of entry. These bacteria circulate in the blood and settle on the heart valves. The aortic valve is most commonly affected, followed by the mitral valve and rarely the tricuspid and pulmonic valves. The bacteria colonize the heart valve(s) and cause infection and inflammation. Infection may lead to ulceration of the heart valve, causing platelet aggregation and clot formation, thus increasing the risk of thromboembolism. Fibrin, a tough scar-like material, will form deposits on the valves. This fibrin deposition causes abnormal valve opening and closing, resulting in valvular insufficiency. As the valvular insufficiency worsens, congestive heart failure eventually develops. This change is irreversible in the majority of patients.

What are the clinical signs of endocarditis?

Most of the clinical signs are associated with left-sided congestive heart failure: coughing, difficulty breathing, exercise intolerance, and lethargy. Many dogs will develop a heart murmur as the condition progresses. High systolic blood pressure is diagnosed

in many dogs with endocarditis. In the acute state, while the infection is active, a low-grade fever, general malaise and a history of infection, often in the mouth, is noted.

How is endocarditis diagnosed?

Diagnosis is made from medical history and clinical signs, blood and urine tests, radiographs and ultrasound evaluation of the heart. An electrocardiogram (ECG) is often performed to detect left-sided heart enlargement and the presence of any abnormal heart rhythms.

How is endocarditis treated?

In the acute stages of endocarditis, antibiotics are indicated and are commonly prescribed but they will not reverse any damage to the valves.



Once valvular insufficiency and congestive heart failure develop, treatment is focused on treating the irreversible heart disease and the associated clinical signs. Because the condition is irreversible, prevention is essential. Routine oral care including thorough cleaning and polishing by your veterinarian and proper home care in the form of brushing and rinsing is one of the best defenses against endocarditis.

Pets who have a history of heart disease, a heart murmur, a severe oral infection or an immunosuppressive condition and who are about to undergo a dental prophylactic cleaning should receive antibiotics before and after the procedure.

What is the prognosis for a dog with endocarditis?

The prognosis for a dog with endocarditis varies with the severity of infection and the valve or valves involved. Unfortunately, the majority of cases involve aortic valve endocarditis, which warrants a grave prognosis. Latent congestive heart failure often develops months to years later in dogs that have mitral valve endocarditis. The need for good oral care cannot be over-emphasized in the prevention of endocarditis. The benefits of routine dental cleaning and polishing are well documented. Your veterinarian will recommend the proper treatment and preventive measures to ensure your pet lives a long and healthy life.

*This client information sheet is based on material written by Ernest Ward, DVM.
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