

Atrial Fibrillation

Atrial fibrillation (“Afib”) is an irregular and often rapid heart rhythm originating from the upper chambers of the heart (atria). The best way to understand atrial fibrillation is to first understand the way a normal heart rhythm functions. A normal heart rhythm is known as sinus rhythm, because it originates in the sinoatrial node in the right atrium (upper right chamber of the heart). This electrical stimulus spreads to other parts of the heart through specialized conduction tissue. The organized flow of electricity in the heart ensures contraction of the upper and lower heart chambers at optimal times. This timing is necessary for efficient pump function of the heart.

Atrial fibrillation is characterized by chaotic electrical activity in the upper chambers of the heart. Because electrical events in the heart cause contraction of the heart muscle, a heart in atrial fibrillation will have quivering or random twitching of the upper heart chambers rather than the distinct contractions of a heart in normal sinus rhythm. Atrial fibrillation decreases the efficient pump function of the heart in two ways: loss of an efficient, well-timed contraction of the upper heart chambers, and heart rates of the lower chambers that are frequently too fast to allow for adequate filling of the heart. The heart rate of animals in atrial fibrillation will frequently exceed 200 beats per minute for dogs and 250 beats per minute for cats.

Atrial fibrillation can develop secondary to any heart disease that causes enlargement of the upper heart chambers. Common examples include heart valve disease (), and heart muscle disease () in dogs, or any of the . Atrial fibrillation can also arise in the absence of heart disease (“lone” atrial fibrillation). This is more common in large or giant dog breeds.

Clinical signs or symptoms of atrial fibrillation can vary significantly and depend on the underlying heart disease and heart rate. Patients with lone atrial fibrillation (no structural heart disease) may develop a mildly decreased exercise capacity or may seem mildly lethargic. Patients with significant underlying heart disease complicated by atrial fibrillation can develop new or worsening heart failure, including fluid accumulation in the lungs, chest cavity, or abdomen. Symptoms can include coughing, labored breathing, lethargy, distension of the belly, decreased appetite, and fainting/collapse.

In people, atrial fibrillation is a recognized risk factor for the development of blood clots and stroke. This risk is probably also high in cats (though less well studied than in people), but is uncommon in dogs.

There are two ways of treating atrial fibrillation in dogs and cats. The first is rhythm control. This refers to conversion of the rhythm back to normal sinus with drugs or electrical shock. This strategy is more effective in patients with less severe structural heart disease and in patients who have recently developed atrial fibrillation. The other strategy is heart rate control, which uses drugs to slow the response of the lower heart chambers to the rapid electrical stimuli of the upper heart chambers. Rate control is more commonly used with veterinary patients. Effective atrial fibrillation management is



28400 Old 41 Road, Suite 1
Bonita Springs, Florida 34135
Phone: 239-992-8387 / Fax: 239-949-0232
www.SWFVS.com

very important to heart failure and symptom control in patients with structural heart disease.

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