

Chronic valve disease

Chronic valve disease (also known as endocardiosis or myxomatous valve degeneration) is an acquired degenerative disease of the heart valves affecting dogs, cats, pigs, horses, and people as they age. Dogs are commonly affected, but cats are rarely affected to a clinically significant degree.

Heart valves function as check valves, ensuring efficient one-way blood flow as the heart pumps. There are four heart valves, located between the upper and lower chambers of the heart and between the lower chambers of the heart and the two large blood vessels leaving each lower chamber. There are two valves on the left side of the heart, and two on the right. Changes to the heart valves secondary to chronic valve disease are characterized by thickening and malalignment of the valve leaflets, leading to valve leakage (regurgitation). All four heart valves can be affected, but degeneration of valves in the left heart (mitral and aortic valves) tends to be more clinically significant due to the much higher pressure in the left heart and systemic circulation.

This disease is progressive, but the rate of progression is usually slow. The age of onset is typically middle age or later, and the incidence of this disease increases with age. Most animals will be affected for several years prior to the development of clinical signs, and many pets will remain asymptomatic for their entire lives. Chronic valve disease is the most common acquired heart disease of dogs.

With severe valve disease, the heart becomes increasingly inefficient and the heart chambers enlarge. When this occurs, the average blood pressure inside the heart becomes elevated. If sufficiently high, this pressure is transmitted backwards from the heart through the pulmonary veins to the lungs. This can cause fluid to leak out of the small blood vessels into the lungs, which signals the onset of congestive heart failure. Outward signs of congestive heart failure include coughing, rapid or labored breathing, lethargy, decreased exercise capacity, and fainting with exertion. Congestive heart failure is a life-threatening condition requiring immediate medical intervention.

Treatment for dogs with mild chronic valve disease is typically limited to blood pressure control. For more advanced dogs, prior to congestive heart failure, medications may be used that block hormones in circulation that can be detrimental to the heart over time. Congestive heart failure is typically medically rather than surgically managed; heart valve replacement is uncommonly performed in dogs. Medical management of congestive heart failure is multimodal, involving drugs that function to control fluid, to control blood pressure, to block hormones associated with heart disease, and to improve heart muscle performance.

The short-term prognosis for canine heart failure patients with valve disease is fair to good. The average life expectancy for a dog after the stage of congestive heart failure is reached is approximately 12 months, however, many dogs can maintain good quality of life longer than this. Medical

management of heart failure can be compromised by arrhythmias such as atrial fibrillation or ventricular tachycardia, or by acute damage to valve supporting structures known as chordae tendinae. These complications can sometimes result in a shortened life span.