

“Heart Attacks” and Heart Disease in Horses

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The term “heart attack” has incorrectly evolved into common usage to refer to sudden death associated with heart disease. To medical professionals for people, this term is specifically reserved for myocardial infarction. In people, myocardial infarcts are commonly caused by clogged blood vessels that reduce blood flow to the heart and result in damage or death to the heart muscle.

Since horses do not routinely suffer from coronary artery disease, “heart attacks” in this sense rarely occur. Racehorses that unexpectedly drop dead due to sudden death syndrome (Swale syndrome) are frequently said to have died of a “heart attack.” This determination, however, is inaccurate, as heart lesions may not be present, so use of the term “heart attack” is imprecise.

Equine heart disease can develop rapidly (acute heart disease) or slowly (chronic heart disease). Speed of progression is dependent upon the underlying cause and location of diseased tissue. Equine heart disease can be caused by heart malformation, direct insult to the heart or its electrical signaling system, or secondarily to disease in other organs. Horses with heart abnormalities may or may not show clinical signs.

Acute heart disease typically results from direct insult to the heart or disruption of its electrical signaling system. Examples in the horse include sudden death syndrome; disruption of blood flow to the heart; toxin- or drug-induced disruption of electrical signals; arrhythmias; snakebites; nutritional deficiencies; traumatic insult; and bacterial, hormonal, or toxic insult to the heart muscle. Because the heart is incapable of regenerating new muscle, acute dysfunction, regardless of the cause, can predispose the heart to chronic complications.

Chronic heart disease develops slowly due to the heart’s ability to temporarily compensate for abnormalities by increasing its size. In the horse, it can result from birth defects of the heart’s chambers, valves, or blood vessels; cancer; previous insult to the heart or valves; or disease in other organs that secondarily alter the systemic blood flow into and out of the heart. Chronic heart disease essentially inhibits efficient delivery of oxygen to the body’s tissues. Eventually, the heart becomes overworked and is unable to keep up with the body’s oxygen needs, which eventually results in heart failure.

From 2000 to 2009, heart disease was identified in 261 horses that presented to the University of Kentucky necropsy service. Multiple heart abnormalities were commonly identified in individual animals.

Of the 261 horses, there were 174 cases of acute heart disease. These cases included traumatic insult (five cases) and myocardial degeneration and necrosis (42 cases) and 127 inflammatory lesions that consisted of myocarditis (the heart muscle, 59 cases), endocarditis (the inner heart lining/valves, 29 cases), and pericarditis (the sac surrounding the heart, 39 cases).

Additionally, 107 cases of chronic heart disease were present and included cardiomegaly (enlarged heart, 11 cases), chronic valvular disease (1 case), congenital malformation (21 cases), cardiomyopathy (heart muscle disease, 31 cases), myocardial fibrosis (25 cases), and heart failure (18 cases).

Twenty cases had both acute and chronic lesions present.

In summary, equine heart disease is multifaceted and can be induced by multiple mechanisms. Although horses do not routinely suffer from traditional “heart attacks,” they do frequently develop heart abnormalities that can negatively impact their health and longevity.