

Cardiac/Cardiovascular Conditions Affecting Sport Horses



Katherine B. Chope, VMD

KEYWORDS

- Sport horse • Murmur • Valvular regurgitation • Arrhythmia • Echocardiogram
- ECG • Exercising ECG

KEY POINTS

- Auscultation should be performed once to twice yearly in performance horses.
- A grade 3/6 or above left-sided systolic murmur, grade 4/6 or above right-sided systolic murmur, grade 3/6 or above diastolic murmur or nonphysiologic arrhythmia should prompt echocardiographic or ECG evaluation.
- Moderate to severe aortic regurgitation has been associated with ventricular arrhythmias at exercise.
- Exercising radiotelemetry is indicated in moderate to severe mitral regurgitation, moderate to severe aortic regurgitation, atrial fibrillation, history of collapse during exercise, or unexplained poor performance.
- Sport horses undergoing exercise radiotelemetry should be evaluated performing in their intended discipline whenever possible.

INTRODUCTION

Low-grade heart murmurs and arrhythmias due to vagal tone are not uncommonly detected in horses. In most cases, low-grade murmurs are physiologic murmurs with no effect on performance or life expectancy. Atrioventricular (AV) or aortic valvular regurgitation, however, can develop with age and may be progressive. In the milder forms, little to no effect may be observed; however, in more severe cases, valvular regurgitation may be implicated in decreased performance or in the development of secondary arrhythmias, which may in turn affect performance or ridden safety. Arrhythmias may present as a clinically insignificant finding, such as in second-degree AV block, a performance limitation, or a safety concern, such as can occur in unstable ventricular arrhythmias (VAs). Sport horses typically peak in performance at a later age than their racing counterparts and are expected

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Department of Clinical Sciences, Tufts University Cummings School of Veterinary Medicine, 200 Westboro Road, North Grafton, MA 01536, USA

E-mail address: katherine.chope@tufts.edu

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to be used athletically well into their late teens or beyond, when age-related cardiac changes are more likely to manifest. Given the variety of types of athletic work the sport horse moniker encompasses and the variability in rider ages and expertise, it is important that the equine sport horse veterinarian understand which conditions are most likely to be of performance, safety, or prepurchase concern. This article discusses the physical findings, diagnostic options, and presentation of commonly encountered cardiac conditions in the sport horse. Infectious, inflammatory, toxic, congenital, and less frequent causes of cardiovascular disease less specific to the competing athlete are outside the scope of this article. They may occur, however, and should be considered as differentials if clinical signs warrant.

PATIENT EVALUATION

A careful, thorough physical examination of the cardiovascular and respiratory systems should be performed in any horse in which a cardiovascular abnormality is suspected. Auscultation should be performed in a quiet environment with minimal external stimuli to enhance detection of murmurs and accurately obtain resting values. Mucous membranes, capillary refill time, jugular refill, jugular pulse and arterial pulse quality should be evaluated. Thoracic auscultation is recommended as an aid in determining the respiratory contribution in cases of exercise intolerance.

Auscultation

Auscultation should be performed over the pulmonic, aortic, and mitral valve regions on the left side of the chest (**Fig. 1**) and the tricuspid region on the right side of the chest (**Fig. 2**). It is necessary to place the stethoscope cranially on each side underneath the triceps muscle or move the leg forward to perform proper auscultation; otherwise, cranial or soft murmurs can be missed (**Fig. 3**). Further evaluation immediately postexercise or during physical stimulation to increase heart rate may be indicated help differentiate between a physiologic flow murmur

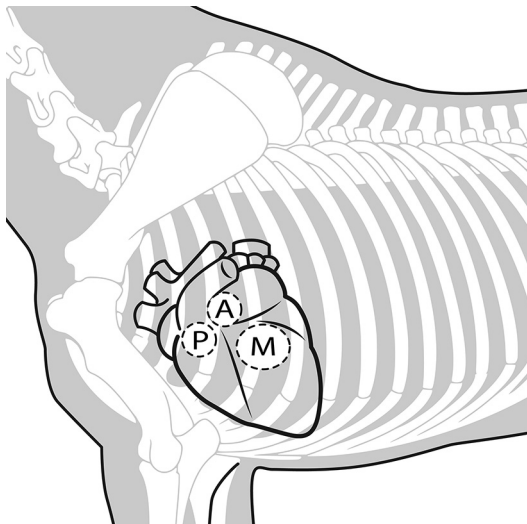


Fig. 1. Schematic of the pulmonic (*P*), aortic (*A*) and mitral (*M*) valve regions for auscultation. (Courtesy of Katherine Chope, VMD. North Grafton, MA; with permission.)

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