

Online HorseCollege



Student Workbook

3.H.19 Ailments of the Circulatory System

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Ailments of the Circulatory System 3.H.19 Workbook

Students are to complete Horse Care 3.H.13-16 online assessments prior to attempting Horse Care 3.H.17-20 and to follow all recommended safety considerations.

Practical assessments for Horse Care 3.H.17-20 are as follows:

- A) Ailments of the Digestive System
- B) Ailments of the Respiratory System
- C) Ailments of the Circulatory System
- D) Therapies

These assessments incorporate the following unit from the SIS30710 Sport Industry Training Package which include the listed elements

RGRPSH401A Relate anatomical and physiological features to the care and treatment of horses

- Identify basic anatomy and physiology of horses
- Relate anatomy and body systems to the performance of racehorses
- Follow illness and injury management plans

Further information about this assessment is available at www.training.gov.au

Ailments of the Circulatory System Introduction

The circulatory system moves blood throughout the body starting at the heart and transports blood cells which contain oxygen, nutrients, gases, hormones, blood cells and waste products around. Blood is propelled through the body by the pumping action of the heart with arteries carrying blood away from the heart and veins bringing the blood back.

A condition of the circulatory system involves the heart and in some cases the lungs and the exchange of gases. Whilst heart conditions are not as common in horses there are some defects and diseases that involve blood.

As a general rule in the event that a condition or injury does not improve or that the ailment cannot be identified veterinary attention and advice should be sought.

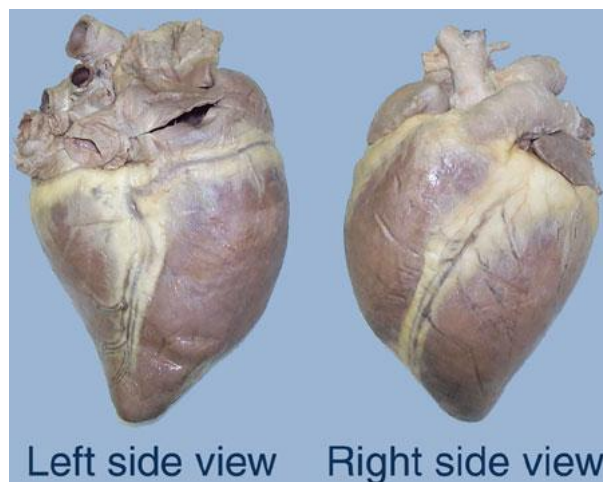
Cardiac Tissue Defects

The term cardiac tissue defect refers to faults in the physiology of the heart.

Endocarditis is an inflammation of the inner surface of surfaces where blood flows. This condition is correlated to damage from worm larvae, growths which occur on valves, immune system reactions and bacterial infestations.

Myocarditis is an inflammation of the heart muscle. It is associated with exercise intolerance and on occasion COPD (see 3.H.18). Though this ailment is usually self-resolving it can result in death from congested heart failure if strenuous exercise happens to be undertaken at the same time the myocarditis defect is occurring.

Pericarditis is a rare defect in which the outer layer of the heart becomes inflamed. This condition is marked by friction noises when the heart is listened to through a stethoscope. It results in a build up of blood pressure and congestion of circulation in the lungs which as a result interferes with the gaseous exchange in the airways.



Myocardial Disease

This disease affects the muscular layer of the heart wall. It interferes with contraction processes of the muscle which can contribute to the development arrhythmias (abnormal electrical activity of the heart which causes an abnormal heart rhythm). Horses are most likely to develop this condition after exposure to viral or bacterial respiratory infection. Drugs and vitamin or electrolyte imbalances can also contribute to poor myocardial functioning.

Signs of this disease can vary with the first symptom being reduced or poor athletic performance. Horses that are affected severely will show poor pulse and increased pulse rate. Diagnostic tests are usually required to determine the exact problem.

Long term rest is generally the primary treatment option for this ailment, further treatment options will depend upon the cause of the disease.



Piroplasmosis

This disease is caused by parasites that are transported from one horse to another by ticks. These parasites *Babesia equi* are picked up by ticks in red blood cells when it sucks blood as a result the parasites develop within the tick and when the tick bites a horse it is injected into the red blood cells of the circulatory system. It is occasionally seen in Australia in horses which are imported but is most common in Asia, southern parts of Europe and the United States and Africa.

It can be quite serious with symptoms showing up between ten to twenty days after infection. Signs will begin with depression, fever and loss of appetite progressing to pale mucous membranes as the horse becomes anaemic from the destruction of red blood cells from the parasite. These mucous membranes will eventually become yellow from jaundice and urine can become red in colour. The horse will become constipated and may show signs of colic and swelling in the head, legs, abdomen and chest.

In severe cases horses can die within two days of symptoms showing and recovery is a long process. Upon recovery the parasite remains with the horse but at low levels and as such no symptoms are seen however relapses can occur during times of stress.

This ailment can be treated with drugs and a blood transfusion can be given to aid recovery by replacing red blood cells which have been destroyed.



Haemolytic Disease

This disease affects foals and is caused by differences in the structure of the foal's and mare's red blood cells. The foal's blood cells will contain antigens that are not present in the mare. This causes an antibody to be released in the mare when red blood cells cross from the foetal bloodstream to the mare's bloodstream. These antibodies become concentrated as part of the colostrum and enter the foal's stomach when it suckles for the first time. These antibodies are then absorbed into the foal's bloodstream and attack the red blood cells causing them to break down.

Initially foals will become inactive and sleepy; upon exertion their pulse and breathing rates rapidly increase. Eventually jaundice can be observed on mucous membranes and in the whites of the eyes, and urine becomes red.

If haemolytic disease was determined after the foal had suckled the foal will need blood transfusions to replace the lost red blood cells, the mare's can be used but the blood needs to be removed of serum to prevent reintroducing the antibody to the foal.

However if this condition is determined before foaling (through testing of blood samples prior to foaling) then the foal can be restrained from suckling from the birth mare and fed the colostrum of another mare.



Epistaxis

This term means 'nose bleed' and is somewhat common in horses. They may bleed from one or both nostrils, blood from one nostril is usually indicative of haemorrhage in the nasal passages on the side of bleeding, blood from both nostrils are likely to have problems in the lower respiratory tract, nasopharynx or guttural pouches.

A common cause of nose bleeding is fast exercise (Exercise Induced Pulmonary Haemorrhage or EIPH). EIPH is brought about by strenuous exercise and it is believed that it is caused by the stress to the lungs with forceful breathing. When nose bleeding is associated with exercise the amount of haemorrhaging can vary.

Other less frequent causes are nasal tumors, foreign bodies stuck in nasal passages, fungal infections (of the guttural pouch) and fractures of the skull. Nasal tumors and fungal infections often present other symptoms such as difficulty swallowing and/or a foul smelling discharge.

It can be difficult to locate the source of the bleeding and in most cases nose bleeding resolves itself. As always if bleeding fails to cease or it is suspected that one of the above mentioned less frequent causes is the root of the problem then a veterinary diagnosis should be sought.



Extension Lesson

Identify the cause, symptom and treatment of the following ailments.

Myocardial disease	Cause:	Symptoms:	Treatment:
Haemolytic disease	Cause:	Symptoms:	Treatment:
Piroplasmosis	Cause:	Symptoms:	Treatment:
Cardiac tissue defects	Cause:	Symptoms:	Treatment:
Epistaxis	Cause:	Symptoms:	Treatment:

Recommended Reading

Publication:-

Veterinary notes for horse owners

The BHS veterinary manual

Author:-

Captain M. Horace Hayes

P. Stewart Hastie

Websites:-

<http://www.vetmed.ucdavis.edu/ceh/docs/horsereport/pubs-HR24-4-bkm-sec.pdf> - Equine heart

References

Publication:-

Veterinary notes for horse owners

The BHS veterinary manual

6th Edition Pony Club Manual No.2

Common Health Problems of Horses

The Complete Horse Care manual

Author:-

Captain M. Horace Hayes

P. Stewart Hastie

Elaine Knox-Thompson & Suzanne
Dickens

John Kohnke

Colin Vogel

Websites & Images:-

special.equisearch.com

www.provet.co.uk