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The collapsing horse

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INTRODUCTION
Collapse in the horse can be a very distressing syndrome for the owner and provides a significant diagnostic challenge to the equine clinician. For the purpose of this discussion, collapse will be defined as an animal becoming acutely recumbent with or without the loss of consciousness. In addition, most of this discussion will centre on the adult horse. Some of the definitions and classifications of collapse can be confusing. It is important to apply a systematic and logical approach to the situation keeping in mind the important aspects of safety of the horse and its handlers.

APPROACH TO THE COLLAPSING HORSE
The practitioner may in the first instance be presented with a situation requiring emergency care to stabilise the horse. Safety is paramount and it is vital that injury to the people around the horse is avoided. First-aid measures will include airway maintenance, breathing and circulation. Control of haemorrhage and cardiovascular support are important. Attending to acute injuries such as fractures and control of seizures with sedation or anticonvulsants may be necessary. In the acute setting, obtaining a quick history and performing a clinical examination as best you can are important. After stabilisation and initial examinations, further ancillary tests and treatments can be instituted depending on the detected problems.

In many cases of collapse, the veterinarian is not presented with the collapsed horse, but with a history of intermittent collapse. A detailed history is important. Questions should include the frequency and duration of episodes, environmental details at the time, any changes in management description of the events (before, during and after), state of consciousness of the horse, whether any other horses are affected, any possible toxic factors, drug therapies, whether the events occur at rest or at exercise, and whether the horse is ‘normal’ between episodes. In many cases, the history can be vague or confusing. It is helpful to ask the owner to keep a diary and if possible to video the events. Again, safety is paramount.

Collapse can be due to problems related to a variety of body systems. Accordingly the clinical examination should be thorough, with special attention to the cardiovascular and nervous systems. A neurological examination is an important part of the work-up. If a cardiovascular cause is suspected echocardiography and ECG (including continuous monitoring) are important. Exercise testing may be indicated if considered safe. Haematological and serum biochemical analyses may be helpful if a systemic or metabolic basis is suspected. Frustratingly, in many cases of collapse a definitive diagnosis is not achieved.

CAUSES OF COLLAPSE
Collapse can be classified according to body system involvement such as cardiovascular, nervous, musculoskeletal etc. For this discussion, the broad categorisation described by Mayhew (1989) will be used. This uses the categories of syncope, seizures, sleep disorders, coma, motor paralysis, and generalised and metabolic disorders (the final 3 are grouped below as ‘other’). The list of conditions below is not exhaustive.

Syncope
Syncope in horses is poorly understood and explanations are largely extrapolated from human conditions. Syncope involves a transient and acute loss of consciousness, with generalised weakness and sudden collapse. These ‘fainting’ attacks are associated with insufficient cerebral blood flow. Syncope can be cardiac or extracardiac in origin. Syncope in the absence
of cardiac failure is very rare. Cardiac causes include: arrhythmias (e.g. AV block - third degree more than second degree, atrial fibrillation, ventricular premature depolarisations, ventricular tachycardia), cardiac failure (e.g. ruptured chordae tendineae, myocardial disease, severe valvular disease, endocarditis, pericardial disease). Extracardiac causes are difficult to validate. The vaso-vagal fainting syndrome (cardioneurogenic syncope) observed in man has been suggested to occur in horses but this is difficult to prove.

Seizures
Seizures in the horse can be manifest as partial and generalised seizures and status epilepticus. Seizures represent the physical manifestation of spontaneous paroxysmal electrical discharges in the cerebrum. Repeated seizures or epilepsy can occur in foals with disease processes such as sepsis or hypoxic ischaemic encephalopathy. On occasion it can have a genetic basis, for instance in Arabians. Currently, epilepsy in adult horses is considered only as acquired and as having an underlying disease process.

Sleep disorders
In man, narcolepsy is characterised by chronic 'sleepiness', a marked disorganisation of sleep/wake behaviour and pathological manifestations of rapid eye movement (REM) sleep. It can be associated with or without cataplexy (flaccid paralysis). In man there is also a syndrome of idiopathic hypersomnia, involving unwanted sleep attacks. Narcolepsy with cataplexy does occur in foals such as Miniature Horse and some pony breeds but it is unlikely that true narcolepsy occurs in adult horses. It has been suggested recently that some sleep attacks seen in adult horses (e.g. excessive drowsiness, buckling at the knees, stumbling and even total collapse) may be a form of idiopathic hypersomnia associated with chronic sleep deprivation. Removal of the causes of this sleep deprivation with environmental modification and therapy (e.g. pain relief) has been described.

Other
Coma involves recumbency, unconsciousness and unresponsiveness and can be associated with CNS disease processes such as trauma, asphyxia at birth, bacterial infection, parasites, liver disease and accidental intracarotid injections. Collapse caused by loss of motor function can be associated with trauma, botulism, myasthenic syndromes and hyperkalaemic periodic paralysis (HYPP).

Generalised or metabolic causes can include shock, hypoglycaemia (including possibly secondary to neoplasia) electrolyte abnormalities (hypocalcaemia, hypokalaemia, hyperkalaemia), endotoxaemia and anaphylaxis.

FURTHER READING

NOTES