Evaluation and Management of the Recumbent Adult Horse

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KEYWORDS
• Recumbent • Neurologic • Sling • Down horse

DIAGNOSTIC EVALUATION

Clinical Examination

Initial evaluation of a recumbent horse involves assessment of the entire situation, including the location of the horse and safety of the horse and all involved personnel. A recumbent horse often results in a stressed environment, for both the horse and client, and it is important for the veterinarian to be observant, directive and methodical during the evaluation. Obtaining a good history can provide critical information for reaching a diagnosis as to the cause of recumbency. Signalment and a history of recent health or performance problems should be obtained. Any treatments that the horse has received should also be recorded. Onset (acute vs chronic) of the recumbency, and activity prior to the onset of recumbency should be determined. Knowledge of diet and management practices may also provide clues as to the cause of recumbency. Travel and vaccination history, especially for rabies, should be determined. Until a diagnosis is reached, all recumbent horses should be treated as rabies suspects and barrier protection used.

A thorough physical examination is paramount in the initial evaluation of a recumbent horse. Safety of the examiner is a major concern during the evaluation of the downer horse and the initial examination may best be accomplished by standing near the horse's dorsum and leaning over the body to avoid injury if the horse is thrashing its legs. The initial goal of the physical examination is to determine if the patient is stable and to determine a general cause for the recumbency. General causes of recumbency may be categorized as neurologic, musculoskeletal, cardiopulmonary, abdominal discomfort, or metabolic. In addition, initial consideration as to whether the recumbency is a result of a traumatic, infectious, metabolic, or toxic disease should be considered. Determination of this early in the examination will quickly narrow the list of differential diagnoses. A baseline respiratory rate should be obtained while the horse is undisturbed and

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quiet, and a baseline temperature and heart rate should be obtained. An assessment of the hydration status should also be made. The physical examination should include careful auscultation of the accessible side of the horse, including cardiopulmonary auscultation and abdominal auscultation. Palpation and manipulation of the limbs for any evidence of fracture, swelling, pain, or injury should be performed cautiously. The head and neck should also be carefully palpated for evidence of pain or fracture.

A neurologic exam, thorough to the extent possible, should be performed following physical examination. The neurologic exam should be performed systematically and results recorded throughout. The initial goal of the neurologic examination is to determine if any neurologic deficits are present and, if so, to formulate a neuroanatomic diagnosis. Initially, abnormalities may be categorized as central nervous system (CNS) disorders involving the brain and/or spinal cord, peripheral nerve system (PNS), neuromuscular junction, or multifocal disorders. A neuroanatomic diagnosis should then be made as specifically as possible so that an appropriately targeted diagnostic evaluation can be performed. The general mentation of the patient may be difficult to determine due to stress of recumbency and inability to react normally, however the horse should be evaluated closely for mental appropriateness. Observing whether the horse is interested in food and water and able to eat or drink is informative in the neurologic examination. The cranial nerve and ophthalmic exams should be performed on the accessible side, and the head may be gently lifted to evaluate the eye and cranial nerves on the recumbent side. Skin sensation and the cutaneous trunci reflex should be tested, although reliability is decreased in a recumbent horse. Focal sweating caused by sympathetic denervation may be suggestive of a lower motor neuron lesion at that site, while a unilateral or bilateral band of sweating suggests a severe thoracolumbar spinal cord lesion at the most rostral level of the sweating. If the horse can assume a dog sitting position, then injury to the spinal cord caudal to T2, myopathy, or injury to the peripheral nerves of the hindlimbs should be considered. If the horse is unable to raise the head and respiratory pattern is abnormal, either a lesion in the proximal cervical spinal cord or diffuse neuromuscular disease is likely. If the horse will only lie in lateral recumbency on one side, then vestibular disease should be considered as a cause of the recumbency. The patellar reflex should be evaluated by gently striking the middle patellar ligament to test the femoral nerve and the L4-L5 spinal cord segments. Withdrawal responses should be carefully tested by pinching the coronary band with a hemostat. A normal response in the hindlimb, characterized by flexion of the stifle and all distal joints, is achieved via the sciatic nerve and L6, S1, and S2 spinal cord segments. Withdrawal of the forelimb is achieved via the nerves of the brachial plexus and the C6-T2 spinal cord segments. Reflexes are likely to be depressed in the limbs following compression from recumbency. Tail and anal tone should be assessed, although tail tone may be altered in the recumbent horse. Bladder tone and size, and the ability to express urine from the bladder may be evaluated via rectal exam. Muscle tone, including that of the eyelid and tongue, should be evaluated carefully, as weakness is a characteristic finding with botulism.

When the recumbent physical and neurologic examinations fail to elucidate a cause for the recumbency, the horse should be assisted to stand by tail support, sling, or other means. Once assisted, many recumbent horses are able to bear weight and the cause for recumbency becomes apparent. Alternatively, abnormalities such as musculoskeletal injury or ataxia become more apparent as the horse attempts to stand with assistance.