
Wobbler Syndrome or Cervical Vertebral Stenotic Myelopathy

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Introduction

Wobblers or wobbler syndrome is marked by gait instability and is now recognized as encompassing a number of disease conditions. Cervical vertebral stenotic myelopathy is the classic form of the wobbler syndrome and is produced by spinal cord compression at the cervical (neck) level. It is a disease characterized by an abnormal gait in the front and/or hind legs. It is referred to as "wobbler" syndrome, as the horse may seem wobbly when walking or exercising. The severity of the observed signs varies among horses. Some horses may seem to have a stiff neck, appear weak or "lazy", stumble more than normal, or give missteps. Others may be reluctant to rise or fall easily. In reality, these horses suffer from "ataxia" from a proprioceptive deficit or loss of sense where their feet are placed. Sometimes the horse may appear "drunk" as it lacks perception of where its limbs are (spatial orientation).

The spinal cord compression can present itself as a dynamic or static stenosis of the cervical canal. In a dynamic stenosis, compression only occurs when the horse bends or extends its neck and affects most commonly the intervertebral spaces between the third and fourth cervical vertebra (C3-C4) and C4-C5 in young animals (yearlings). On the other hand, static stenosis occurs regardless of the

position of the neck and occurs most commonly between C5-C6 and C6-C7 in older animals. The etiology of this condition has been linked to osteochondrosis (degeneration of the growth centers) and to nutritional factors including mineral imbalances. The potential inherited nature of this disease has been widely debated. To date, no single cause of the condition has been identified.

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Diagnosis

It is important to recognize the signs of wobblers and identify the surgical candidates early to achieve a good outcome. A veterinarian will perform a neurologic examination and will identify the location of the lesion (i.e. brain, spinal cord). Further diagnostic tests will be required, including the radiography of the cervical spine and performing a contrast study of the spinal canal (myelogram) under general anesthesia.

A myelogram involves the injection of a special contrast media around the spinal cord, immediately followed by radiographs. The contrast media will highlight the roof and floor of the spinal canal, allowing visualization of any significant narrowing. The development of low-toxicity contrast media has diminished the side effects associated with this technique. Very few complications are associated with this procedure. Cerebrospinal fluid (CSF) will be collected prior to injection of the contrast media used in the myelogram. The CSF will be submitted to the university laboratory for routine examination and to a Kentucky laboratory for Equine Protozoal Myeloencephalitis (EPM) testing.

Since the clinical condition known as "wobbler" encompasses spinal cord compression as well as other conditions which cause ataxia, the collection and examination of the CSF is essential. Other differentials include EPM, a neurological form of rhinopneumonitis and traumatic injuries. The perception that the problem is increasing in the horse population may actually be due to an increase in awareness, as well as an increased use and expertise in applying more sophisticated diagnostic methods.

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Treatment

A wobbler that is not treated may deteriorate neurologically, occasionally to the point of injuring itself or others, especially when struggling to rise. In the short term, medical treatment with stall rest may provide some benefit for a wobbler that is subtly affected. In the long term, however, frequently the animal will relapse when allowed unrestricted exercise or when placed in training. Until now, very limited options were available to horse owners when faced with a "wobbler", most of them being euthanized. However, this option is not suitable for many horse owners.

In a few places in the United States, surgical techniques have been used successfully, but widespread acceptance has been delayed mainly due to the lack of information. Recently, surgical treatment of select cases of wobblers has been performed at the Ontario Veterinary College - Large Animal Clinic. A reported improvement in 75% of the cases is encouraging. Careful case selection is of paramount importance to maximize the chances to succeed with this technique. Consequently, the patients go through an extensive diagnostic work-up before the surgical procedure is recommended.

The surgery involves the fusion of the vertebral bodies responsible for the compression. Once the inciting cause for the narrowing is eliminated, the spinal cord needs time to heal. Six to eight months is necessary before assessing the end-result of this surgical procedure. Dietary and mineral

recommendations are also made to improve the chances of success.

The prognosis for horses with the dynamic form of the disease is better than for those with static stenosis. Therefore, the surgery is best, but not limited to, a horse that is one year of age or younger, that has just developed signs of ataxia and that has dynamic compression at one site (C3-C4 or C4-C5). Many wobblers that have been surgically treated are racing, showing, jumping and pleasure riding successfully.

Owner cooperation and commitment before surgery are absolutely necessary. Owners who are considering surgical treatment must be completely informed of the risks, financial liability, and responsibility involved in making such a decision.

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Prevention

No single cause of cervical vertebral stenotic myelopathy has been identified. However, the debate continues regarding the potential genetic basis for the disease, as tall, long-necked horses may be predisposed to it (1). Horse owners should ensure that a balanced ration is provided to mares throughout the pregnancy and to young horses that are growing rapidly. Consult your veterinarian regarding a vaccination program to prevent rhinopneumonitis. Information on EPM can be found in the horse section of the OMAFRA website at <http://www.gov.on.ca/OMAFRA/english/livestock>.

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Reference:

Rooney, JR. Nervous System. In: Rooney JR and Robertson JL, eds. Equine Pathology. Iowa State Press, Iowa, 1996: p. 331.

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If you are interested in obtaining additional information about the "wobbler" program, please contact Dr. Antonio M. Cruz at the Ontario Veterinary College (519) 823-8840.

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