



Deciphering the “S’s”: Shivers versus Stringhalt

By Alex Urban, DVM

Numerous conditions may affect our four legged friends leading to gait changes and/or deficits. Two of these exhibit similar clinical signs, which can cause confusion and frustration for the owner. Shivers and Stringhalt are neuromuscular diseases that are infrequently seen, yet have very recognizable and similar characteristics. Complete understanding of the underlying cause of each disease is a work in progress, though we learn more with each horse that is seen and treated by a veterinarian.

Shivers is most commonly diagnosed in Draft breeds and Warmbloods, though it is sporadically seen in other breeds. Geldings are three times more likely to be affected, and horses greater than 16.3 hands are more susceptible. Onset of the first clinical signs is generally in the 2 to 4-year-old age range, though this can vary widely. Research efforts continue to investigate whether the disease has a heritable predisposition and whether the condition is linked to Equine Polysaccharide Storage Myopathy (EPSM).

The classic sign of Shivers is episodic hyperflexion of a hind limb with abduction (moving the leg outward from the center of the body) before placing the hoof on the ground. The limb may be held flexed and abducted for several seconds before placement; this delay is most commonly seen when the limb is picked up, as in for the farrier or routine hoof care. Often, the tail is raised and quivering, while the muscles of the affected limb tremble. Affected horses may have a normal gait, or they may have an abnormal gait only sporadically, such as when backing up, turning tight circles, in the first stride after standing, or in the last stride before standing. Interestingly, rather than hyperflexion when backing, some horses show hyperextension due to placement of both hind feet farther back than normal. Both forelimbs are also extended when backing begins, so the animal may have a “sawhorse” stance.

Cold weather, lack of exercise, and increased anxiety or stress (such as hoof abscess) may exacerbate the abnormal gait and signs of Shivers. The disease may be progressive and, as such, carries a guarded long-term prognosis. In many cases, signs will plateau, but in severely affected horses, generalized muscle atrophy and weakness develop. No tried and true medical, surgical, or therapeutic treatment exists for Shivers. High fat with low starch/sugar diet can cause partial improvement, particularly in less advanced cases. In addition, Vitamin E supplementation has been beneficial for horses with low serum levels. Affected horses should receive maximal turnout time and daily exercise.

Stringhalt has no known breed, age, or sex predisposition. The affected horse appears normal at rest, but shows abrupt onset of excessive hock flexion with adduction (moving the leg in toward the center of the body) of one or both rear limbs. This movement occurs with every stride and tends to lessen at the trot and disappear at the canter. Some horses show only a slight exaggeration of normal hock movement, while more severely affected animals hit their abdomen with the fetlock on each stride. Difficulty backing may occur, and signs may worsen with anxiety and cold weather. Interestingly, a fibrotic myopathy (scarring after severe muscle trauma) will frequently give a stringhalt type appearance to the gait and should be considered as well by the veterinarian.

Two recognized forms of Stringhalt occur: sporadic and epidemic (“Australian”). Sporadic Stringhalt occurs in one animal within the herd. The affected horse usually has only one limb affected, though bilateral involvement does occur. The condition has been reported in horses several months after injury to the dorsal hock and/or dorsal cannon regions of the hind limb. It is thought that lateral digital extensor tendon adhesions and scarring occur and/or altered neuromuscular function. Other cases of sporadic Stringhalt, however, have no known cause. Epidemic Stringhalt, on the other hand, generally shows bilateral hind limb involvement and even forelimb involvement, with knuckling and muscle weakness. Laryngeal weakness may occur with signs of dyspnea (abnormal or difficulty breathing) and/or “roaring.” Ingestion of flatweed and other dandelion-like plants in the Western states during hot, dry summer months causes this form of the neuropathy.

Sporadic cases of Stringhalt rarely recover spontaneously. Conservative treatment options include a gradually increasing exercise program and intraarticular corticosteroid injections where medication diffusion may decrease local inflammation. For horses with severe disease, tenectomy (surgical resection) of the lateral digital extensor tendon, including a portion of the muscle belly, can be performed to offer a chance of clinical improvement. Epidemic Stringhalt may be cured by removal from the infected pasture, though a full recovery may take months to years. Phenytoin, an anticonvulsant medication, improves clinical signs in some, but not all, cases of epidemic Stringhalt during the recovery period.

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