

For Your Information

Courtesy Of:

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Laminitis

Laminitis, commonly called “founder”, is a serious and painful disease of the equine foot. A recent study by the American Association of Equine Practitioners (AAEP) estimated that 50% of horses affected with acute laminitis become permanently unsound. With this potential for lasting damage, it is important that laminitis be treated urgently. Laminitis often develops secondary to problems elsewhere in the body. Therefore, if the severity of the primary disease can be reduced, the severity of the damage to the foot may also be minimized. This should improve the prognosis for the horse.

A simple definition of laminitis is inflammation of the lamellae which form an attachment between the distal phalanx (coffin bone) and the inner surface of the hoof wall. The inflammation causes the attachment to swell and weaken. Without this firm attachment, the weight of the horse and the deep digital flexor tendon pulling on the coffin bone cause it to rotate and/or sink within the hoof capsule. This results in damage to the arteries and veins in the foot and crushes the corium (sensitive growing tissue) of the sole and coronary band, which is seen outwardly in the horse as pain and lameness.

Laminitis can be triggered by a variety of situations. Despite extensive research, the exact nature of the the factors which lead to lamellar damage is still unclear, although it appears that these factors reach the foot through the bloodstream. Some of the situations which may lead to laminitis include:

- Carbohydrate overload following ingestion of large amounts of starch or fructans as found in grain, fruits, bread or green grass
- Gastrointestinal disease such as severe acute colitis/enteritis
- Retained placenta or metritis
- Respiratory disease, especially associated with prolonged transport (shipping fever)
- Hyperlipidemia, a condition most commonly seen in obese ponies and miniature horses
- Trauma, often sustained from running on hard or rough surfaces (road founder) or weight bearing on one foot more due to injury on the opposite limb
- Ingestion of black walnut leaves or using wood chips for bedding
- Systemic disease leading to sepsis or septic shock
- Extreme obesity, often linked to endocrine imbalances such as Cushing’s disease or Equine Metabolic Syndrome

Laminitis may be divided into 3 phases. During the developmental phase, damage to the lamellae begins. This phase precedes the appearance of any foot pain. For example, in the case of laminitis caused by intake of too many carbohydrates, lamellar damage may progress 24-40 hours prior to obvious lameness. Sometimes, no developmental phase can be recognized. The horse is discovered in the acute phase with no apparent ill-health or inciting problem occurring beforehand. This is particularly likely in the case of obese animals with related endocrine problems or in grass-induced founder, which has been linked to seasonal variations in the levels of fructans in the pasture.

The acute phase of laminitis begins with the onset of foot pain. A grading system for the degree of lameness seen during this phase exists to help veterinarians develop a prognosis for each patient:

- Grade 1: The horse constantly shifts his weight from one foot to the other. The horse is lame at the trot but not the walk.
- Grade 2: The horse walks with a stilted gait. He will allow his feet to be picked up without resistance.
- Grade 3: The horse is reluctant to move, and resists having its feet picked up.
- Grade 4: The horse refuses to move unless forced to do so.

The higher the grade, the more severe the damage to the laminae and the more guarded the prognosis for recovery.

During the acute phase, the coffin bone may shift within the hoof capsule. This shifting is detected by radiographs and causes permanent changes in the position of the coffin bone within the hoof. These changes are the hallmark of the chronic phase of laminitis.

The chronic phase of laminitis lasts indefinitely. Clinical signs range from persistent mild to severe lameness, hoof wall and coffin bone deformation, to sloughing of the hooves. With increasing pain, the horse may seek out soft footing or spend more time lying down. Overtime, further degeneration of the lamellae may result in gradual deterioration of the horse's condition.

Prevention is the key to protecting your horse from laminitis. During the spring, grass founders are particularly common. Taking steps to keep your horse at a healthy weight and limiting access to fresh grass and grain may avert a catastrophe. Once a horse has experienced an episode of laminitis he is at increased risk of foundering again in the future. Such a horse must be kept on a strict diet to control obesity and to limit ingestion of carbohydrates. Regular hoof trimming to correct alignment of the coffin bone in the hoof capsule and to diminish the amount of force applied to the foot by the deep digital flexor tendon will greatly reduce the level of lameness. Treating causative diseases such as Cushing's syndrome will also help prevent laminitic flare-ups. Regular veterinary visits can help you identify risk factors before your horse develops a problem.

In the event that your horse does develop laminitis, treatment should begin immediately. The treatment should include providing pain relief through the use of Phenylbutazone (Bute), soft bedding, and frog support with pads or bar shoes. The horse should not be made to walk unless absolutely necessary. Cryotherapy or icing of the lower limb (below the knees and hocks) during the developmental stage has been shown to be beneficial, but only if it is done constantly (24hrs per day) for 3-7 days and the owner does not wait until lameness appears. This is usually only feasible when the inciting cause is known such as when a horse eats a large amount of grain or has a retained placenta. Treat this as an emergency and call your veterinarian.