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Laminitis or Founder

What is laminitis or founder?

Laminitis or founder is an aseptic (free of pathogens) inflammation of the portion of the hoof that contains soft vascular sensitive tissue that covers the flesh within the hoof wall. Acute and chronic forms occur in goats that result in lameness and possible deformities of the hoof.

What are the clinical signs of laminitis?

Animals affected with laminitis move with a stiff gait or may refuse to walk or even stand. Goats may appear anxious and uncomfortable and grind their teeth from pain. There is usually a vague lameness at first and (or) an increasing tendency for the goats to walk on their knees. The hooves are warm to the touch especially in the area just away from the coronary band. All four feet can be affected. The conformation of the hoof becomes distorted with time. The hoof wall becomes thickened with a loss of distinction between the wall and the sole, and the feet become characteristically overgrown.

Puncture wounds, hoof rot and neglect of routine hoof trimming resulting in overgrown hooves should not be mistaken for laminitis. Arthritis must also be ruled out when goats walk on their knees.

What causes laminitis?

The causes and pathogenesis of laminitis are not completely understood. Laminitis in goats is more often seen in intensive management settings. Its occurrence after sudden ration changes, when feeding high grain-low roughage diets, excessive feeding of grain or overt cases of engorgement toxemia (low intake followed by excessive intake of grain), suggests lactic acidosis as a predisposing factor. Laminitis has also been observed after kidding in association with a retained placenta and metritis (infection of the reproductive tract), mastitis, enterotoxemia (overeating disease), lactic acidosis and pneumonia, suggesting that bacterial toxins are involved.

How to prevent laminitis?

Abrupt changes in rations should be avoided and grain feeding should be kept at a minimum. The risk of laminitis can be reduced by slowly increasing the amount of grain being fed and feeding sufficient forage. In addition, when high energy rations are fed for milk, hair production or for rapid growth, addition of buffers to the diet (sodium bicarbonate or calcium carbonate at 1.5 to 2% of the concentrate) should be considered to reduce the risk of lactic acidosis.

How to treat laminitis?

For acute laminitis, it is important to first correct the predisposing nutritional factors and treat other conditions, if identifiable, such as complications from kidding (retained placenta and metritis), pneumonia and mastitis. Therapy consists primarily of non-steroidal anti-inflammatory drugs such as phenylbutazone given orally once a day at a dose of 4.5 mg/lb, flunixin meglumine once a day at 0.5 mg/lb, or aspirin given orally twice a day at a dose of 45 mg/lb to reduce the pain in the feet for several days. Hosing or soaking the affected feet is also useful. Affected goats should be fed only grass hay while they recover, and afterwards they should be gradually and cautiously fed grain-containing rations.

Chronic laminitis management involves the reduction of grain from the ration, avoidance of sudden ration changes, and frequent corrective foot trimming to approximate a normal hoof conformation. Administration of analgesics may help to control pain and promote mobility. For long term anti-inflammatory therapy, aspirin is useful because of its low cost but the initial oral dose of 45 mg/lb twice a day should be reduced over time to whatever lesser dose to maintain comfort because long-term therapy at the initial high dose could possibly lead to gastrointestinal ulceration and loss of appetite.

Is laminitis heritable?

According to Dr. Kevin Anderson from the NC State College of Veterinary Medicine and Dr. Joe Cassady from the NCSU Animal Science department, some animals may be more predisposed than others to laminitis, but no scientific data suggest that laminitis is heritable.

Citations

Pugh, D. G. 2002. Sheep & Goat Medicine. p 227. Saunders Co. Philadelphia. PA.

Smith, M. C, and D. M. Sherman. 1994. Goat Medicine. pp 102-104. Lea and Febiger. Philadelphia. PA.

The Merck Veterinary Manual .1998. p 812. National Publishing, Inc. Philadelphia. PA.

Author:

JM Luginbuhl

Extension Specialist (Goats & Forage Systems)
Crop Science

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