



ISSN (E): 2277-7695

ISSN (P): 2349-8242

TPI 2024; 13(6): 04-05

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www.thepharmajournal.com

Received: 07-03-2024

Accepted: 11-04-2024

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A case report on non-weight bearing lameness in a goat kid with suspected nutritional factors

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Abstract

Lameness in goats is a common issue that can significantly impact their welfare and productivity. It can arise from various causes, including infections, injuries, and nutritional deficiencies. Understanding the underlying causes and appropriate treatments is essential for effective management. A 4-month-old goat kid, weighing 10 kg body weight, presented at KVK, Gaina, Pithoragarh, with a history of anorexia, pain, stiffness and lameness in the right forelimb for 10-12 days. On physical examination, the kid was active but displayed weight-bearing lameness in the right forelimb. Palpation of the limb revealed pain and swelling around the stifle joint. The kid was treated with Melonex and Dexamethasone @ 0.5 mg/kg body weight administered once daily intramuscularly for 3 days to alleviate the pain and for the nutritional management, Tribivet at 0.5 ml, once daily intramuscularly, was given for 3 days. Tribivet was continued for an additional 10 days, along with calcium and phosphorus supplementation. Gradual improvement was observed after 3 days of treatment, and the kid fully recovered after 1 week of treatment. This case highlights the importance of mineral and vitamin supplementation for growing animals.

Keywords: Goat, lameness, nutrition, vitamin B complex supplementation

Introduction

Lameness, a painful condition (Deeming *et al.*, 2018) ^[1] that impedes a normal walking gait, is one of the most serious welfare issues faced by farm animals (Von Keyserlingk *et al.*, 2009) ^[2]. In small ruminants (goat and sheep), lameness is associated with weight loss, decreased fertility and growth rate (Nieuwhof *et al.*, 2008) ^[6]. The cause of lameness varies widely and is significantly influenced by the species, breed, age, sex and the nutritional status of the animal (de Mol *et al.*, 2013) ^[4]. It is complex disorder as it affects animal's ability to move and involves three body systems (musculoskeletal, nervous and integumentary) independently or in combination (Michael 2010) ^[5]. Damage to peripheral nerves due to trauma, or dislocations, or injury can impair limb function and cause lameness. Thiamine deficiency is another cause, leads to central nervous system signs but can also affect peripheral nerves. Early signs might include a change in gait and weakness and results in lameness (Smith and Sherman, 2009) ^[8]. Vitamin B12, which is thought to alleviate pain, specifically neuropathic pain, by several mechanisms including promoting myelination, increasing nerve regeneration and decreasing ectopic nerve firing (Julian *et al.*, 2020) ^[13]. Thus, support peripheral nerve disorder including peripheral lameness. Vitamin B play a crucial role in treating neuropathy by supporting healthy nervous system function. Peripheral neuropathy can sometimes result from a deficiency in vitamin B. Supplementing with vitamin B1, B6, and B12 is recommended to address these conditions (Anthony and Sharon, 2023) ^[14].

Case presentation

A 1-month-old goat kid weighing 10 kg, was brought to KVK, Gaina, Pithoragarh with a history of anorexia, pain, stiffness and lameness in the right forelimb for 10-12 day. There were no external wounds or signs of trauma. On physical examination, the kid was active but displayed weight-bearing lameness in right forelimb. Palpation of the limb revealed pain and swelling around the stifle joint. Previous treatments included Inj Taxim 250 mg, Inj Neurokind, and Inj Novalpas for 3 days, but there was no improvement in the condition.

Treatment

Pain Management: The kid was administered nonsteroidal anti-inflammatory drugs (NSAIDs) Melonex @ 0.5 mg/kg b.wt along with Dexamethasone @ 0.5 mg/kg b.wt,

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intramuscularly was given for 3 days to alleviate pain and inflammation.

Nutritional Supplementation: The goat kid was started on injection Tribivet @ followed by oral Tribivet syrup for 10 days along with calcium and phosphorus supplements.

Dietary Adjustments: The owner was advised to improve the overall diet quality. The kid's diet was modified to include a balanced mineral supplement specifically formulated for growing goats, and access to good quality green fodder.

Outcome

Over the course of six weeks, the goat kid showed significant improvement. The lameness gradually resolved, and the kid regained normal movement in affected limb. Improvement was noted after 3 days, with complete recovery observed after one week of treatment.

Discussion

A limp can be defined as an altered gait due to reluctance to bear weight on the affected limb (Leach *et al.*, 2009) [3]. The most critical part in treatment of lameness is management of pain and inflammation (Scott and Witte 2011) [7]. This case highlights the importance of proper supplementation of Vitamin B complex (B1, B12 and B6) especially in rapidly growing kids. Vitamin B12 is essential for the cell growth and formation of myelin and nucleoproteins (Valuck *et al.*, 2004) [9]. Deficiency also causes demyelination and irreversible nerve cell death (Allen, 2009) [10]. Deficiency of Vitamin B1 (Thiamine) causes muscular weakness, muscle spasms, swelling of limbs and severe nervous disorders (all can be reversed on treatment), loss of appetite (Albert *et al.*, 2008) [11] whereas, deficiency symptoms of B6 in case of ruminants include demyelination of peripheral nerves. Thus, these vitamins are essential for the muscle growth and deficiency leads to disturbance in nervous system including lameness. Lameness associated with these vitamins' deficiency can be attributed to impaired energy metabolism leading to muscle weakness and poor coordination and neurological dysfunction due to inadequate nerve myelination and repair (Radostits *et al.*, 2006) [12]. Thus, nutritional deficiencies are a common but often overlooked cause of lameness in young goats. Adequate intake of essential minerals and vitamins is crucial for bone development and overall health (Smith and Sherman, 2009) [8].

Conclusion

Early identification and intervention in cases of nutritional deficiencies can prevent long-term complications and ensure healthy development. Regular monitoring and dietary adjustments based on the specific needs of the herd are essential for preventing such issues. Nutritional assessments should be an integral part of the diagnostic process in similar cases, and prompt treatment can lead to favourable outcomes.

References

1. Deeming LE, Beausoleil N, Stafford KJ, Webster JR, Zobel G. The development of a reliable 5-point gait scoring system for use in dairy goats. *Journal of dairy science*. 2018;101(5):4491-4497.
2. Von Keyserlingk, Rushen MAG J, De Passillé AM, Weary DM. Invited review: The welfare of dairy cattle—

Key concepts and the role of science. *Journal of Dairy Science*. 2009;92:4101-4111.

3. Leach KA, Dippel S, Huber J, March S, Winckler C, Whay HR. Assessing lameness in cows kept in tie-stalls. *Journal of Dairy Science*. 2009;92:1567-1574.
4. de Mol RM, André G, Bleumer JB E, Van Der J, Werf TN, De Haas Y, *et al.* Applicability of day-to-day variation in behavior for the automated detection of lameness in dairy cows. *Journal of Dairy Science*. 2013;96:3703-3712.
5. Michael AH. Lameness in Pigs. Overview of lameness in pigs. (10 ed). Merck & Co., Inc. and Merial Limited. 2010, p. 1047.
6. Nieuwhof GJ, Bishop SC, Hill WG, Raadsma HW. The effect of footrot on weight gain in sheep. *Animal*. 2008;2(10):1427-1436.
7. Scott H, Witte P. Investigation of lameness in dogs. *Hindlimb lameness*. 2011;33:58-66.
8. Smith MC, Sherman DM. *Goat Medicine*. Wiley-Blackwell, 2009.
9. Valuck RJ, Ruscin JM. A case-control study on adverse effects: H2 blocker or proton pump inhibitor use and risk of vitamin B12 deficiency in older adults. *Journal of Clinical Epidemiology*. 2004;57:422-428.
10. Allen LH. How common is vitamin B-12 deficiency? *The American Journal of Clinical Nutrition*. 2009;89:693-696.
11. Albert CM, Cook NR, Gaziano JM, Zaharris E, MacFadyen J, Danielson E, *et al.* Effect of folic acid and B vitamins on risk of cardiovascular events and total mortality among women at high risk for cardiovascular disease: a randomized trial. *Journal of the American Veterinary Medical Association*. 2008;299:2027-2036.
12. Radostits OM, Gay CC, Hinchcliff KW, Constable PD. *Veterinary Medicine: A Textbook of the Diseases of Cattle, Horses, Sheep, Pigs and Goats*. Elsevier Health Sciences, 2006.
13. Julian T, Syeed R, Glasgow N, Angelopoulou E, Zis P. B12 as a treatment for peripheral neuropathic pain: a systematic review. *Nutrients*. 2020;12(8):2221.
14. Anthony K, Sharon A. *Best Supplements for Neuropathy*. <https://www.healthline.com/health/neuropathy-supplements>, 2023.