

Neonatal Muscular Weakness in Kid: A Case Report

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Abstract

A one-week-old goat kid with the history of persistent weakness and lateral recumbency from Lalkuan, Nainital was presented to the Veterinary Clinical complex, College of Veterinary and Animal Sciences, Pantnagar, in the month of September, 2025. Owner reported that the kid was unable to stand since birth and showed poor muscle tone and weak suckling reflex. No gross congenital abnormalities were observed on clinical examination of the kid. To investigate possible maternal factors contributing to neonatal weakness, fecal examination of the dam was performed, which revealed the severe *Strongyle* spp. eggs of the dam. Based upon the clinical and laboratory findings, it was concluded that the maternal gastrointestinal infestation with *Strongyle* spp. led to nutritional stress during the gestation there by contributing to inadequate fetal development. The kid was treated with supportive therapy like DNS, RL and antibiotics. The kid died at the age of 11 days and 4 days after the treatment. Post-partum parasite control and nutritional supplementation of the dam were also advised. The present case emphasizes the importance of maternal parasite control, adequate mineral and vitamin supplementation particularly Selenium and Vitamin E particularly during pregnancy to prevent neonatal weakness in kids and thereby economic losses to the farmer.

Key words: Goat kid, neonatal muscular weakness, *Strongyle* spp.

INTRODUCTION

Neonatal mortality and morbidity are major constraints in small ruminant production systems, particularly in tropical and subtropical regions. Weakness, inability to stand, and lateral recumbency are common clinical signs observed in neonatal goat kids and are often associated with inadequate intrauterine nutrition, metabolic disorders, mineral deficiencies, and compromised maternal health during pregnancy (Radostits *et al.*, 2007). These conditions can significantly affect survivability and productivity of goat kids leading to economic losses to the farmers. Gastrointestinal helminth infections, caused by nematodes such as

Strongyle spp. nematodes and that too by *Haemonchus contortus*, are widely prevalent in goats reared under humid and pasture-based systems. The Tarai region of Uttarakhand, from where the present case was reported, provides favorable environmental conditions for the development and transmission of *Strongyle* spp. larvae due to high rainfall, moderate temperature and prolonged pasture moisture (Singh *et al.*, 2014; Sankar *et al.*, 2020). *Strongyle* spp. infections in dams result in chronic blood loss, anemia, impaired nutrient absorption, and increased metabolic stress, which may adversely influence fetal development even when overt clinical signs are absent in the mother (Bhatia, 2013). Due to the



Strongyle spp load in the animal particularly the pregnant animal, along with the above said effects, there may be deficiency of Selenium and Vitamin E also. Selenium and Vitamin E are essential antioxidants involved in protecting muscle cell membranes from oxidative injury, and their deficiency has been associated with muscular weakness and delayed standing in neonatal small ruminants (**Ramírez-Bribiesca *et al.*, 2005**). Maternal parasitic burden may therefore aggravate oxidative and nutritional stress during gestation, predisposing newborn kids to weakness and recumbency (**Leal *et al.*, 2010**). The present case describes a case of persistent neonatal weakness and lateral recumbency in a one-week-old goat kid with presence of *Strongyle* spp. infection in dam. The report highlights the diagnostic relevance of evaluating maternal parasitic status in neonatal cases and underscores the importance of parasite control and nutritional management in pregnant goats.

CASE PRESENTATION

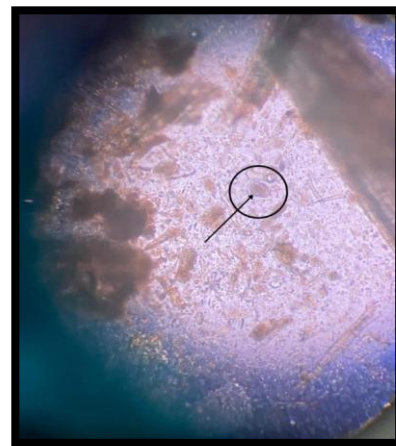
A one-week-old, female, goat kid was presented from Lalkuan, District Nainital, Uttarakhand to the Veterinary Clinical Complex, College of Veterinary and Animal Sciences, Pantnagar, in the month of September, 2025, with a history of weakness and inability to stand since birth. Owner reported that the kid remained in lateral recumbency (Fig. 1) from birth and failed to attain normal posture or strength since birth. The suckling reflex was weak, and the kid required assistance for feeding. Owner also reported that the dam gave birth to two kids out of which one kid had already died few hours after the birth due to severe muscular weakness. There was no history of trauma to dam or kid or dystocia. Clinical examination revealed that the kid was dull but responsive, with markedly reduced muscle tone and weak postural reflexes. The animal was unable to attain sternal recumbency. Rectal temperature was initially within normal

physiological limits. No gross congenital deformities were observed. The dam had normal parturition and did not exhibit overt clinical illness. However, history revealed that routine deworming and mineral supplementation was never done, otherwise or during pregnancy. Considering the persistent neonatal weakness and possible maternal influence on fetal development, a faecal sample of the dam was collected for parasitological examination.



Fig. 1: Weak, debilitated kid with lateral recumbency

LABORATORY EXAMINATION OF SAMPLES



Fecal samples were collected from the dam of the affected goat kid and subjected to parasitological examination. The samples were examined using direct smear and standard



flotation techniques. Microscopic examination revealed the presence of oval, thin-shelled eggs with morulated contents characteristic of *Strongyle* spp. eggs (Fig. 2 & 3). Fecal examination of the neonatal goat kid did not reveal the presence of any parasitic eggs or oocysts.

TREATMENT

Based on the clinical condition of the kid, supportive and symptomatic therapy was initiated with the aim of improving general condition and preventing secondary infections. Fluid therapy was initiated to correct dehydration and maintain circulatory volume. Intravenous administration of 5% dextrose normal saline (DNS) was given at a dose of approximately 15 ml intravenously, followed by Ringer's lactate (RL) at a similar dose to maintain electrolyte balance. Broad-spectrum antimicrobial therapy was initiated to prevent secondary bacterial infection. Inj. Taxim (Cefotaxime) was administered intramuscularly at a dose of 40 mg twice daily (BID). In addition, Inj. Metronidazole was administered intravenously at a dose of 5 ml to cover the anaerobic bacterial infection. All the treatment was to be followed for 5 days. Post-partum parasite control and nutritional supplementation

of the dam were also advised. Supportive care was continued with close monitoring of body temperature, feed intake, and general condition. Despite ongoing therapy, the kid showed progressive deterioration characterized by persistent anorexia and hypothermia. On the 4th day of treatment, the animal developed severe hypothermia, depression and died.

DISCUSSION

Microscopic examination of the fecal sample collected from the dam of the affected neonate by direct smear method revealed the presence of *Strongyle* spp. eggs. Direct smear method of fecal examination was used as it provides rapid results. Although it is not a quantitative method, the detection of eggs in feces by this technique, is suggestive of severe gastrointestinal *Strongyle* spp. infection as this technique fails to detect low grade infection (Soulsby, 1982). This indicates an active parasitic burden in the dam at the time of pregnancy. Furthermore, as per the owner, deworming of the dam was never done. Gastrointestinal *Strongyle* spp. infections are highly prevalent in goats of Uttarakhand, with studies reporting year-round occurrence and moderate to severe infection intensity during the rainy and autumn seasons (Sankar *et al.*, 2020). The present case was reported from Lalkuan, District Nainital in the month of September, 2025. This area falls under the tarai region of the Uttarakhand. The Tarai region, characterized by high humidity, moderate temperature, and abundant vegetation, provides favorable conditions for the survival and transmission of infective third-stage larvae (Soulsby, 1982) particularly in the month of September. Under such endemic conditions, adult goats often harbor subclinical infections that may not manifest overt clinical signs but can significantly impair the nutrient absorption and overall metabolic status of the animal. *Strongyle* spp. infections are known to induce blood loss, hypoproteinemia, and oxidative stress, leading

to depletion of essential micronutrients and antioxidants (Soulsby, 1982; Bhatia, 2013). Experimental studies have demonstrated that infection with gastrointestinal *Strongyle* spp. such as *H. contortus* results in increased oxidative stress, highlighting the role of parasitism in altering antioxidant status (Leal *et al.*, 2010). In the present case, the lack of deworming and absence of mineral and antioxidant supplementation to the dam might have contributed to compromised passive transfer of essential nutrients to the neonate. Neonatal kids are highly dependent on adequate colostrum intake and maternal nutritional status for immune-competence and thermoregulation. Deficiencies, particularly of, Selenium and Vitamin E have been associated with muscular weakness, poor suckling reflex, hypothermia, and reduced disease resistance in neonates (Ramírez-Bribiesca *et al.*, 2005; Radostits *et al.*, 2007). Despite supportive therapy aimed at preventing secondary bacterial infection, the kid succumbed on the fourth day of treatment. The terminal hypothermia and prolonged off-feed status commonly affects neonates with inadequate passive immunity (Radostits *et al.*, 2007).

Conclusion

This case highlights the indirect but critical role of maternal parasitism in goats and its role in neonatal muscular weakness and mortality in kids particularly in tarai regions of Uttarakhand. While *Strongyle* spp. infection was not diagnosed in the neonate, the parasitic burden of dam contributing to poor neonatal resilience emphasizing the importance of strategic parasite control, mineral supplementation, and dam health monitoring in endemic regions such as the Tarai belt of Uttarakhand. Early recognition of parasitism in goats particularly the pregnant goats and preventive herd health measures are essential to reduce neonatal morbidity and mortality under these conditions.

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