

**Research Article****A SUCCESSFUL CASE REPORT OF KERATO-CONJUNCTIVITIS IN GOAT AT NAGALAND, INDIA****¹ Merina Devi K., ^{2,*} Gyaneshori Devi, T., ³ Keneisezo Kuotsu and ⁴ Changamayum Vishwas Singh**¹Department of Livestock Farm Complex²Department of Livestock Production Management³Department of Veterinary Clinical Complex⁴Internees student

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Abstract

Infectious keratoconjunctivitis (IKC), is a widespread bacterial infection affecting the eyes of domestic goats and sheep, with occasional cases in wild caprinae (Abdullah *et al.*, 2013). It is characterized by inflammation of cornea and conjunctiva. The primary causative agent is *Mycoplasma conjunctivae* however, other pathogens including *Chlamydomphila spp.*, *Staphylococcus aureus*, and *Moraxella ovis*, may also be involved (Pandey, 2018). Also, it can also be caused by virus or bacteria within the ocular environment (Livingston *et al.*, 2019). The condition can be aggravated by environmental irritants such as dust, tall vegetation, and fly infestations, along with stress factors like transport (Fernandez-Aguilar *et al.*, 2017). IKC in severe cases, lead to blindness (Fernandez-Aguilar *et al.*, 2017). IKC is highly contagious, which can affect as high as 80% of herd (Biswas and Saifuddin, 2017). Clinical signs of IKC include mucopurulent discharge, eyelid spasm (blepharospasm), and cloudiness of the cornea, which can lead to reversible or irreversible blindness (Baker *et al.*, 2001; Abdullah *et al.*, 2014). Transmission occurs via direct contact or through mechanical vectors, such as face flies (*Musca autumnalis*), and carrier animals may act as reservoirs (Rahaman *et al.*, 2018; Abdullah Jesse *et al.*, 2017). Sheep, in particular, are known carriers of *M. conjunctivae* and can transmit the infection to goats. Although *M. conjunctivae* poses no known zoonotic risk (Rahaman *et al.*, 2018), diagnosis in animals generally relies on clinical signs, confirmed through microbial cultures, PCR, and cytology (Biberstein and Hirish, 1999; Kahn and Line, 2005). Prompt treatment is crucial to reduce the risk of scarring and long-term ocular impairment. The given case report aims to assess the successful treatment and management of kerato-conjunctivitis in one year old goat.

Keywords: Oral implantology, Concentrated growth factor (CGF), Maxillary sinus floor elevation, Guided bone regeneration (GBR), Alveolar ridge preservation (ARP).

INTRODUCTION**Clinical history and observations**

A one-year-old Assam Hill goat, weighing approximately 15 kg, reared under semi-intensive system at College of Veterinary Sciences & Animal Husbandry was reported of suffering an inflammation in left eyes from past 2 days back. It was reported that the animal was dewormed and dipped on regular basis. Upon physical examination the goat was found to be dull and depressed. Physiological parameters of the animal such as rectal temperature, heart beats rate and respiratory rate were recorded as 102°F, 74 beats and 25 breaths per minute, which were within the normal range. On examination of left eyes revealed that there was purulent discharge, conjunctivitis, generalized corneal opacity, epiphora of eye, positive menace response and corneal hyperemia, with early-stage corneal ulceration (Fig.1). For further examination, the whole blood of 2 ml was drawn under sterile condition from the jugular vein into a Lev-Lock K3 EDTA vacutainer for a complete blood count and blood smear examination to check for blood profiles on day 1 and day 14 of treatment. Haematological analysis was done by using automated haematology analyser. Treatment was carried out by isolating the affected goat from the rest of the flock and placed in a clean, dry, and shaded environment.

A widely practiced treatment plan for Infectious Keratoconjunctivitis (IKC) was implemented, which involved the administration of antibiotics.

TREATMENT AND DISCUSSION

The therapeutic plan included flushing the eyes with 0.9% Na Cl solution to remove any dirt particles. Oxytetracycline (20 mg/kg body weight) was administered intramuscularly at a dose of 1.5 ml twice, with a 5-day interval between doses. A single sub-conjunctival injection of 0.3 ml of oxytetracycline (20 mg/kg body weight) was given at the ventral conjunctival fornix to achieve a high localized concentration of antibiotics in the affected area. Neosporin ophthalmic ointment was applied topically twice a day for 2 weeks. Additionally, a supportive treatment of Vitamin A (1 ml, IM) was administered for 5 days. Recovery was significantly observed a week after treatment (Fig.2) and animal was fully recovered within 14 days of treatment of treatment period (Fig.3). The parasitological examination of the peripheral blood smear was negative for any haemo-protozoal infestation. The complete blood count (CBC) examination of the blood sample collected on day one of treatment revealed the following values in Table 1.

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Table 1. Haematological result on the day 1 treatment of goat

Haemogram	Result	Normal range
Hb (g/dL)	9.2	8-12
PCV (%)	27.7	22-38
RBC($10^6/\mu\text{l}$)	14.77	8-18
WBC($10^3/\mu\text{l}$)	24.74	4-13
Platelets($10^3/\mu\text{l}$)	367	300-600
Neutrophils ($10^3/\mu\text{l}$)	17.29	1.2-6.24
Lymphocyte (%)	26.5	50-70

Hematology parameters analysis on day one showed normal values except WBC and neutrophilia. Increased in neutrophils indicated that there was infections and it fights for body through a process called phagocytosis in which they engulf and destroy invading microbes (Park *et al.*, 2016). Neutrophils are basically WBC which plays a major role in immune response of body (Hong, C.W.2017)and its primarily functions is to protect the body against any infections like bacteria, and fungi in particular (Rasmussen *et al.*, 2024). On 14th day of treatment, the blood parameters showed in normal range which indicated that the animal was recovered from keratoconjunctivitis. In conclusion, this case highlighted the importance of early diagnosis and prompt treatment for managing infectious keratoconjunctivitis in goats. The combination of topical, intramuscular, and sub-conjunctival oxytetracycline, along with Vitamin A injections, effectively managed the disease and led to complete recovery within 14 days. Early intervention during Stage-I prevented progression and complications, contributing to the positive outcome. Proper farm management and herd health practices are critical to reducing the incidence and spread of IKC, emphasizing the importance of early detection and effective treatment strategies in mitigating the impact of this disease.

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