

Successful management of viper envenomation in a Labrador dog

Sai Sowmya Konjeti¹*, Chaitanya Yalavarthi², Suresh K³

¹MVSc Scholar, Department of Veterinary Medicine, NTR College of Veterinary Science, Gannavaram, Sri Venkateswara Veterinary University (SVVU), Tirupati-517502 (AP), India.

²Assistant Professor, Department of Veterinary Clinical Complex, NTR College of Veterinary Science, Gannavaram, SVVU(AP), India.

³Professor and Head, Department of Veterinary Clinical Complex, NTR College of Veterinary Science, Gannavaram, SVVU (AP), India.

Abstract

A nine months old male Labrador dog was presented to the Veterinary Clinical Complex, Gannavaram with a history of snake bite. Clinical signs exhibited include dullness, depression, frothy salivation, ataxia, edema and discoloration at paw region. Upon clinical examination fang marks were observed at left metatarsal region. Based on the history, identification of snake by the owner, clinical signs and whole blood clotting test it was diagnosed as viper snakebite. Neutrophilia, polycythemia and marginal lymphocytopenia were noticed. Treatment with poly valent anti snake venom, fluid therapy, tetanus toxoid, an antibiotic was carried out and the dog had uneventful recovery

Keywords: Dog, viper bite, Polyvalent Anti snake Venom

In rural areas especially in forest and forest fringe villages bio- toxins like snake bites and insect stings are most commonly noticed among humans and animal species (Kathiravan *et al.*,2020). In dogs and horses, snake bites are more common when compared to other animals such as cattle, sheep and goat (Yogeshpriya *et al.*,2017). Snake envenomation is an emergency, which needs rapid examination and proper treatment (Vijayakumar *et al.*, 2001). Animals exhibit various symptoms like local tissue damage, blood coagulation defects, pulmonary dysfunction and ataxia (Bhardwaj, 2011). This present paper reports successful management of viper snake envenomation in a Labrador dog.

Case History and Observations

A nine month old male Labrador dog weighing about 20 kg was presented to Veterinary Clinical Complex, Gannavaram with the history of dullness, depression, swollen left hind limb, salivation and ataxia. On clinical examination fang marks were noticed at left metatarsal region and blackish discoloration of the left hind limb was noticed. Pain was evidenced during palpation of the affected area. Hematological examination revealed haemoconcentration, severe neutrophilia, polycythemia and marginal lymphocytopenia. Examination of Leishman's stained blood smear revealed absence

of haemoprotozoans. Based on the history, clinical examination and WBCT the case was diagnosed as snake bite.



Figure: 1. Fang marks on left hind limb



Figure: 2. Edema of the affected limb

*Corresponding author : konjetisowmya20@gmail.com

Table 1: Hematological findings of dog with snake envenomation (before and after treatment)

S.No.	Parameter	Before treatment (0 th day)	After treatment (7 th day)
1.	Haemoglobin (g/dL)	21.0	13.8
2.	Packed cell volume (%)	59	42
3.	Total erythrocyte count ($\times 10^6/\mu\text{L}$)	4.8	6.1
4.	Total leucocyte count ($\times 10^3/\mu\text{L}$)	18,500	12,400
5.	Neutrophils (%)	93	68
6.	Lymphocytes (%)	05	30
7.	Eosinophils (%)	0	0
8.	Monocytes (%)	02	02
9.	Platelet count	85,000	214000

Table 2: Serum biochemical findings of dog with snake envenomation (before and after treatment)

S.No.	Parameter	Before treatment (0 th day)	After treatment (7 th day)
1.	Total bilirubin (mg/dl)	0.8	0.6
2.	Total Protein (g/dl)	6.8	6.8
3.	SGPT(U/L)	184	39
4.	BUN (mg/dl)	28.1	22
5.	Creatinine (mg/dl)	1.5	0.8

The dog was administered with two doses of polyvalent anti-snake venom along with 200 ml of normal saline intravenously. Amoxicillin with sulbactam sodium (@20 mg/kg body weight, BID) and tetanus toxoid were administered. Cessation of salivation was noticed within 30 min after the onset of therapy. Antibiotic and fluid therapy were continued for 4 days and the dog had uneventful recovery.

Discussion

In the present study, the dog exhibited had oedema of left hind limb, congested conjunctival mucus membrane, oozing of dark colored blood at the site of bite, discoloration and staggering gait which were in agreement with that of Ananda *et al.* (2009). Ananda *et al.* (2009) stated that snake venom was a complex mixture of proteins and peptides, consisting of both enzymatic and non-enzymatic compounds which contribute to the development of clinical signs. Blaylock (2001) stated that systemic infection might be noticed in snake bite cases, as snake fangs and oral cavity has bacterial contaminants. Antivenom was administered slowly as IV infusion initially to reduce the severity of anaphylactic reactions. Shukla (2009) opined that tetanus toxoid should be administered in snake bite to provide protection against the tetanus spores which had entered the animal body from contaminated snake

mouth. Expedient transportation of the bitten dog to the nearest veterinary facility followed by aggressive therapy were the cornerstone for successful outcome.

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