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**Kanwarpal Singh Dhillon**

Assistant Professor and  
Corresponding author,  
Department of Veterinary  
Medicine, Khalsa College of  
Veterinary and Animal Sciences  
(KCVAS), Amritsar, Punjab,  
India

**Simran Jot Kaur**

Executive Technical Manager,  
Paras Nutrition Private Limited,  
Moga, Punjab, India

**Sagar Ranjan**

B.V.Sc. Student, Khalsa College  
of Veterinary and Animal  
Sciences, Amritsar, Punjab,  
India

**Corresponding Author:****Kanwarpal Singh Dhillon**

Assistant Professor and  
Corresponding author,  
Department of Veterinary  
Medicine, Khalsa College of  
Veterinary and Animal Sciences  
(KCVAS), Amritsar, Punjab,  
India

## Cobra snake bite in a Labrador pup and its successful treatment

**Kanwarpal Singh Dhillon, Simran Jot Kaur and Sagar Ranjan**

**Abstract**

A six months old male Labrador pup was brought to the Veterinary Clinical Complex, Khalsa College of Veterinary and Animal Sciences, Amritsar with the history of snake bite, salivation, vomiting, dullness, dyspnea, abnormal gait, recumbency and edematous face. Pet owner brought the dead snake and identified it as Cobra. Fang marks noticed on the tip of nose and blood oozing from these marks. Hematology and biochemical investigation revealed neutrophilic leukocytosis with increased ALT level. Based on history and observation, the present case was confirmed as Cobra envenomation in a Labrador puppy. The pup was treated with polyvalent anti-snake venom along with tetanus toxoid, atropine sulphate, corticosteroids, antibiotics and fluid therapy. Area around the fang marks was dressed with povidine iodine. The pup had uneventful recovery from venom envenomation.

**Keywords:** Labrador, puppy, snake bite, anti-snake venom, treatment

**1. Introduction**

Snake bites are becoming increasingly common in canine practice due to scarcity of land and human encroachment. Snake bite in animals generally occurs during grazing/hunting or while playing in the garden. Snake envenomation can be difficult to diagnose if the incident was not witnessed. Action and toxicity of venom depends on snake species, route of entry into body, bite location, quantity of venom injected, absorption from entry site, distribution, accumulation and action at receptor site, biotransformation, excretion and also animal species affected [1]. So far, 216 species of snakes have been identified in India, of which 52 are known to be poisonous [2]. Five most common poisonous snakes found are Cobra, King Cobra, Russell's Viper, Saw Scaled Viper and Krait [3].

Dogs frequently attack snakes and are usually bitten on head or neck. Dogs are commonly presented with extensive edematous swelling, severe pain, ecchymosis, and discoloration of the skin in the affected area within several hours after the bite [1]. The animals exhibit various symptoms like cardio-pulmonary dysfunction, local tissue damage, blood coagulation defects, ataxia etc. depending on type of snake bite [2]. Systemic signs can vary and may include hypotension, shock, cardiac arrhythmias, bleeding disorders, ptialism, nausea, vomiting, respiratory distress, mental confusion, rhabdomyolysis, and acute renal failure [4].

Cobra envenomation in animals is an emergency which requires immediate attention or otherwise delayed and inadequate treatment may prove fatal. The present clinical report describes successful therapeutic management of Cobra snake bite in a Labrador puppy.

**2. History and Diagnosis**

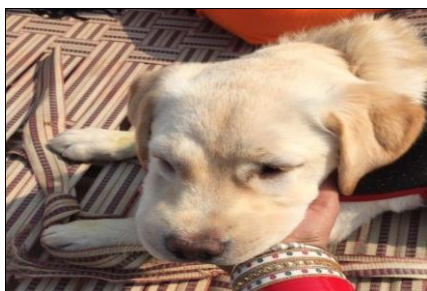
A six months old male Labrador retriever pup was presented to Veterinary Clinical Complex, Khalsa College of Veterinary and Animal Sciences, Amritsar with the history of snake bite, dullness, dyspnea, frothy salivation, vomiting, abnormal gait, recumbency and edematous swelling on the face (Fig. 1). Clinical examination revealed congested mucus membrane, fang marks above the nose with slight swelling and blood oozing from these marks (Fig. 2). The rectal temperature, cardiac and respiration rate were 103.2°F, 130/min and 42/min, respectively. According to the owner, the pup was usually placed in the garden for playing in evening hours and had a history of snake problem. Pet owner also brought the dead snake killed by the pup and identified it as Cobra (Fig. 3). Blood sample was collected aseptically from the cephalic vein in a vial containing Na<sub>2</sub>-EDTA @2 mg/ml for haematological examination. Blood examination showed neutrophilic leukocytosis (Hb- 12.2 g/dl, TLC- 20,240/μl, N- 82/μl, L-10/μl, E- 8/μl) and adequate platelets count.

A heparinized sample was also obtained for serum biochemistry. Serum biochemistry revealed elevated ALT (92 U/L) and normal renal function.

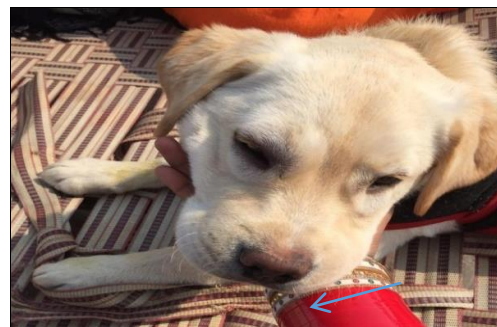
### 3. Treatment and Discussion

Based on history and physical examination, the pup was suspected of a snake bitten. The puppy was treated with one vial (10ml) of lyophilized polyvalent anti-snake venom dissolved in 300 ml of normal saline administered slowly IV, along with supportive therapy included Dexamethasone @2mg/kg IV, Atropine sulphate @0.04 mg/kg IM, B-Complex @1ml IM. Further, Ceftriaxone @25mg/kg, IM and Tetanus Toxoid @0.5 ml IM were also given. The antibiotic therapy was continued for 5 days to the pup along with the liver tonic. The snake bite wound was cleaned with antiseptic solutions and dressed with povidone iodine ointment. Next day, the facial swelling was reduced and the pup was recovered uneventfully.

Envenomation by cobra was manifested clinically as neurotoxicity and if not attended immediately, could lead to respiratory failure and death by preventing binding of acetylcholine to nicotinic receptors in post-synaptic membrane of skeletal muscles [5]. Clinical signs such as salivation, dyspnea, abnormal gait, recumbency observed in the present case have also been observed by Ananda [4], Patel [6], Saravanan *et al.* [7] and Abinaya [8]. These clinical signs can be attributed to the enzymatic and non-enzymatic compounds in the snake venom. According to Klaassen [9], the edematous swelling in snake bite is due to enzyme hyaluronidase which act as spreading factor. Polyvalent snake anti-venom was preferred in the present case as it provides protection against the venom of big four (Common Cobra, Common Krait, Saw Scaled Viper and Russell's Viper) species of the snakes. Sometimes lyophilized polyvalent anti-snake venom may cause anaphylactic reactions [10] so, to overcome the untoward effect of anti-venom serum; dexamethasone injections are given to the patient. However, in the present study, corticosteroid was preferred over antihistamines as, in certain cases; it potentiates the toxic action of the snake venom [11]. The use of steroids in the snake bite is still debated, however in our case, no adverse reactions were observed. Atropine sulphate is given to prevent the undesirable muscarinic effects of acetylcholine such as increased secretions, bradycardia and colic. Prophylactically, tetanus toxoid and broad-spectrum antibiotics were administered to the pup, as the fangs of the snake are supposed to be contaminated with various types of bacteria. The hemato-biochemical parameters revealed neutrophilic leukocytosis and increased ALT levels which were correlated with the findings of Vijay Kumar *et al.* [12], Singh [3] and Turkar *et al.* [5]. In the present case, adrenaline (1:1000) along with corticosteroid was used for managing the possible anaphylaxis.



**Fig 1:** Edematous swelling on the face



**Fig 2:** Fang marks on the tip of nose (arrow)



**Fig 3:** Cobra snake killed by Labrador pup

### 4. Conclusion

Snake bite is not easy to diagnose, sometimes dry bites will happen, as the venom will not be ejected from snake. But presence of fang marks in pup along with history and clinical manifestations, which prompted to diagnose it as Cobra bite, and was successfully treated with anti-snake venom serum along with supportive therapy.

### 5. Acknowledgements

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