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## Victorious medical management of snake bite in a great Dane dog: A case report

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### Abstract

A five years old male Great Dane dog was presented with a signs of frothy salivation, dull, depressed, abnormal gait and pain in oral cavity. It was suspected to snake bite based on history and clinical observation. The Whole Blood Clotting Test (WBCT) was performed to rule out the snake bite and tentatively diagnosed as a same. The effective treatment was done with polyvalent anti - snake venom, fluid therapy, dexamethasone phosphate, tetanus toxoid and broad-spectrum antibiotic brought about an uneventful recovery of animal.

**Keywords:** Dog, snake bite, WBCT test, polyvalent anti - snake venom

### Introduction

Bio toxins like Snake bites and insect stings are most commonly come across in human and animals especially in rural areas and particularly in forest and forest fringe villages (Mount, 1989) [7]. Animals are commonly exposed to snake bites during grazing, playing or hunting in garden or dense bushes area (Garg, 2002) [5]. Naturally, Snakes do not prefer to attack or bite unless they are disturbed / cornered. Effect of bio toxins is more severe in small animals than large animals. Compared to all domestic animals, dogs are regularly bitten by snakes especially in head and limbs region (Osweiler, 1996 and Prabhakaran, K.P., 2019) [8, 9]. Snake bite in human and animal that needs expeditious examination and critical care for proper treatment (Vijaykumar *et al.*, 2001) [13]. The particular case describes the diagnosis and therapeutic management of snake bite at village level.

### Case History and Observation

A male Great Dane dog aged about five years are presented at Thangam Memorial Trust Hospital, Tirupur, Tamil Nadu with the history of frothy salivation, refuse food and water, dull, depressed abnormal gait and pain in oral cavity during night hours. Based on the owner statement, the dog was kept in garden premises during day time and brought to home for only night hours. Recently, the snake activity was noticed in the garden area.

During clinical examination revealed rectal temperature, pulse and respiratory rate were 101.8 F, 36 / min and 21/ min respectively and swelling was noticed in the ventral aspect of lower jaw. The dog felt more pain during palpation on the swollen area. Based on the history, the condition was suspected to snake bite. To confirm that, blood sample was collected from cephalic vein and exposed to Whole Blood Clotting Test (WBCT). No blood clot formation was noticed even after 30 minutes and decided to test was positive. Haematology analysis was not performed, because the animal was presented at mid night. Based on the history, symptoms and WBCT test, the case was tentatively concluded that snake bite.

### Treatment

The dogs was treated with lyophilized polyvalent snake venom anti- Serum (Bharat Serums & Vaccines Limited, Ambarnath) along with normal saline for the period of one hour through intravenous route followed by Amoxicillin sodium + Sulbactam sodium (Amoxirum Forte, Virbac) at the dose rate of 10 mg/kg body weight (b.wt), Dexamethasone phosphate ( Dexalab, Laborate, Sahib) at the rate of 2 mg/kg b.wt., Atropine Sulphate (ATROPIN, Doctor's Life Sciences Ltd, Nellore) at the rate of 0.04 mg/kg b.wt. and Tetanus toxoid-1 ml were administered intramuscularly. The owner was advised to not offer the food and water to the dog until full recovery. On next day the dog was observed as a slightly active and whole blood clotting time was less than 20 minutes. An antibiotic, anti inflammatory and fluid therapy were

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continued up to four days. The dog was recovered uneventful and started to eat liquid and solid food.

### Discussion

All clinical signs like frothy salivation, dull, depressed, abnormal gait and lower jaw swelling were reduced and animal recovered from the snake envenomation because of effective treatment with polyvalent snake venom antiserum, broad-spectrum antibiotics, anti-inflammatory and tetanus toxoid. This therapy was proved successfully and recommended for the treatment of snake bite envenomation in different species of animals (Jain, 1986 and Bailey and Garland, 1992) [6,3].

Snake venom is a more composite of proteins, peptides, non-protein toxins, carbohydrates, lipids, amines and other molecules. Venom is contains two type of toxins (neurotoxin and haemotoxin). Neurotoxins block the neuromuscular junctions and restrict the muscle activity. Haemotoxin affect the tissue destruction and leads to circulatory failure (Anoop Kumar *et al.*, 2016 and Chandrashekar *et al.*, 2016) [2, 4]. As per Anandha *et al.*, 2009 [1] statement clinical signs in the present case may be attributed to the enzymatic and non enzymatic compounds in the snake venom.

Anti snake venom is usually pepsin refined F (ab) fragments of IgG purified from the serum or plasma of a horse or sheep that has been immunized with the venom of one or more species of snakes. Sai Butcha Rao *et al.*, 2008 reported that lyophilized polyvalent anti-snake venom may cause anaphylactic reactions occasionally and to overcome this reaction dexamethasone injection was given to the dogs but its use in snake bite is still debated.

The Whole Blood Clotting Test (WBCT) is a simple test to diagnose snake envenomation and rule out snake bite (Sasikala *et al.*, 2016) [11]. The important of tetanus toxoid and broad spectrum antibiotic in this case to provides protection against tetanus spore and other types of bacteria that might have entered through biting wound (Shukla, 2009) [12].

### Conclusion

A Great Dane dog was recovered uneventfully from the snake envenomation due to victorious medical management. This type of case study will help to easy and quick way of diagnosis and treatment of snake bite cases at village level, where the lack of laboratory facilities.

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