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Clinical Article

THERAPEUTIC MANAGEMENT OF RUSSEL'S VIPER ENVENOMATION IN A DOG - A CASE REPORT

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SUMMARY

A 4-year-old male dog was brought to the Veterinary Clinic Complex, College of Veterinary Science and Animal Husbandry, Mhow after suffering a snake bite the previous evening. The diagnosis was based on the owner's report and clinical symptoms, including swelling on the face, jaw, and neck, excessive salivation, and two fang marks on the lower mandible. The dog was treated with polyvalent anti-snake venom, Inj. Ceftriaxone Tazobactam, fluid therapy, and liver support. After 7 days of treatment, the dog made a full recovery.

Keywords: Anti-snake venom, Fang marks, Mandible, Salivation

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Snake bites are a common and life-threatening emergency, often leading to significant morbidity and mortality. The venom of snakes consists of various toxins that differ depending on the species. Around 375 venomous snake species globally are known to be dangerous (Rolan, 2015). In India, 52 species are identified as poisonous (Turkar *et al.*, 2017). Snake bites in animals typically occur during grazing, hunting, or play. Dogs and horses are commonly affected, and the venom from these bites requires prompt medical attention to avoid serious consequences. This paper discusses a case of snake bite in a dog and its management.

CASE HISTORY AND OBSERVATION

A 4-year-old male non-descript dog weighing 25 kg was presented to the veterinary clinic on 28/04/23 after being bitten by a snake on the evening of 27th April, 2023. Upon examination, the dog appeared restless and showed mild respiratory distress. There were two fang marks on the lower mandible, with a normal body temperature (101.3º F), a heart rate of 65 beats per minute, and a respiratory rate of 28 breaths per minute. Hematological results showed hemoglobin at 18.9 gm/dl, PCV at 66.99%, RBC at 8.1×10^6/cumm, WBC at 33×10^3/cumm, platelets at 62×10^3/cumm, and a differential count of neutrophils 84.6%, lymphocytes 13% and eosinophils 3%. Biochemical analysis revealed a serum creatinine level of 1.77 mg/dl and SGPT at 42.43 U/L, SGOT at 100.8 U/L on day 0.

TREATMENT AND DISCUSSION

The snake bite was confirmed based on the symptoms and fang marks on the dog's mandible. A three ml blood sample was collected for hematological and biochemical testing. The dog was administered lyophilized polyvalent anti-snake venom, which was dissolved in sterile water and given with 500 ml of Normal Saline. Additionally, the dog received Inj. Ceftriaxone Tazobactam (15 mg/kg), Inj. Dexamethasone (0.5 mg/kg), Inj.Vitamin K (2 mg/kg), Inj.Vitamin C (40 mg/kg), and liver support with Syrup Livotas (5 ml BID) for 15 days. The affected area was cleaned with povidone-iodine daily until healed. The dog showed complete recovery after 7 days.

The hematological values on day 7 showed hemoglobin at 13.1 gm/dl, PCV at 40.5%, RBC at 5.9×10^6/cumm, WBC at 10×10^3/cumm, platelets at 208×10^3/cumm, neutrophils at 71% and lymphocytes at 26%. Biochemical values included serum creatinine at 1.02 mg/dl, SGPT at 13.7 U/L, and SGOT at 37.1 U/L. The dog's appetite improved on the same day and continued to recover thereafter. Snake venom is a complex mixture of proteins, peptides, inorganic cations, glycoproteins, lipids, and biogenic amines, such as histamine and neurotransmitters (Klaassen, 2008). The clinical signs observed, including excessive salivation, dullness, respiratory distress, and muscular weakness, are attributed to these venom components (Turkar *et al.*, 2017). The hematological changes may be due to the venom's effect on blood cells, while elevated biochemical markers like alanine aminotransferase and creatinine are likely a result of the hepatotoxic and nephrotoxic effects of the venom (Ananda *et al.*, 2009). Broad-spectrum antibiotics, tetanus toxoid, and polyvalent antisnake venom have been successfully used in previous cases of snakebite in dogs (Kumar *et al.*,

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Before Treatment (0th day)

After treatment (7th day)

2016). Anti-snake venom is known to potentially cause anaphylactic reactions (Rao *et al.*, 2008), which is why antihistamines were administered to counteract the adverse effects of histamine, as suggested by (Ananda *et al.*, 2009). Some studies recommend avoiding antihistamines, as they may enhance venom toxicity, while others, like (Turkar *et al.*, 2017), have successfully used antihistamines to treat snake bites in dogs.

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RETRACTION OF ARTICLE

This article earlier available at https://www.luvas.edu.in/haryana-veterinarian/download/harvet2016-dec/1.pdf entitled *"Occurrence of some organochlorine pesticide residues in poultry feed and meat"* has been retracted by the authors because of some error made during the data analysis process of the experimental observations due to counting the number of samples showing the concentration of pesticide below its corresponding Limit of Detection. All authors take full responsibility for this mistake and sincerely apologize for any inconvenience it may cause.

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