

RUSSELL'S VIPER SNAKE ENVENOMATION IN A DOG: A CASE REPORT

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A three year old, male, Dachshund dog, weighing 10 Kg was presented to Veterinary College Hospital, Hassan with the history of snake bite (Russell's viper). On physical examination, animal was dull and depressed, face was swollen and fang marks were observed on the right side of the face and blood tinged fluid was oozing from the bitten area. Animal was evincing pain on palpation of swollen area. Haemato-biochemical findings were within the normal range except for thrombocytopenia. The case was diagnosed as snake envenomation and treated with polyvalent anti snake venom intravenously, along with 100 ml of 0.9 per cent normal saline, dexamethasone and antibiotics for 5 days. Animal made uneventful recovery after 5 days of treatment.

Key words: Snake bite, Russell's Viper, Snake venom anti serum

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INTRODUCTION

Snake bite in animals generally occurs during grazing or hunting or while playing in the garden. Snake bite cases are more common in horses and dogs when compared to other animals such as cattle, sheep, and goats. Snake envenomation can be difficult to diagnose if the incident was not witnessed. Dogs are commonly presented with extensive

oedematous swelling, severe pain, ecchymosis, and discoloration of the skin in the affected area within several hours after the bite (Garg, 2002). The snake bite with envenomation is a true emergency and it needs an appropriate treatment. Delayed and inadequate treatment may lead to untoward consequences.

CASE HISTORY AND CLINICAL OBSERVATIONS

A three year old, male, Dachshund dog was presented to Veterinary College Hospital, Hassan, after 10 hours of snake bite and snake was identified by the owner as Russell's viper. On physical examination, animal was dull and depressed, conjunctival mucus membrane was congested and oedematous swelling was

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present on right side of the face (Fig. 1) and fang marks were observed on the face and blood tinged fluid was oozing from the bitten area (Fig.2&3). Animal was evincing pain on palpation of the swollen area and all other vital signs were within the normal range.

Blood sample was collected in vacutainer with and without ethylene diamine tetra acetic acid (EDTA) for haemato-biochemical examination. Haemato-biochemical findings were within the normal range except for thrombocytopenia (Platelet counts- 24000 cells/cumm).

TREATMENT AND DISCUSSION

Based on history, clinical signs, physical examination and haemato - biochemical findings the case was diagnosed as snake bite with envenomation (Russell's viper) and the animal was treated with 10 ml of polyvalent snake venom antiserum (Bharath Serum and Vaccines Limited, Ambernath) intravenously along with 100 ml of 0.9% normal saline, dexamethasone @ 0.5 mg/Kg body weight intramuscularly (Ashwini, 2023) and antibiotic ceftriaxone @ 25 mg/Kg body weight, subcutaneously for 5 days (Bharai *et al.*, 2019; Vijayakumar *et al.*, 2019). Animal was completely recovered after 5 days of treatment (Fig.4) and haemato-biochemical findings were within the normal range after 5 days of treatment.

Snake venoms are composite mixture of many enzymes, proteins and peptide compounds. The Russell's viper venom is majorly haemotoxic but also neurotoxic according to Segev *et al.* (2004). The swelling

at the site of bite is because of proteolytic enzymes, collagenase, Phospholipase A2, and 5' Nucleotidase (Garg, 2002). Hyaluronidase cleaves internal glycoside bonds in certain acid mucopolysaccharides resulting in decreased viscosity of connective tissues allowing other fractions of venom to penetrate the tissues.

The clinical signs observed in the present case correlates with the findings of Ananda *et al.* (2009) and Vijayakumar *et al.* (2019). In the present study clinical sign such as oedematous swelling at the site of bite could be attributed to enzyme hyaluronidase which acts as a spreading factor (Klaassen, 2008). According to Wolff (2006) bleeding from the wound is because of the effect of venom interference in many components of haemostatic system. Thrombocytopenia in the present case is may be because of vasculitis, sequestration of platelets in inflamed tissue and consumption of platelets with potential development of disseminated intravascular coagulation (DIC) (Segev *et al.*, 2004). Lyophilized polyvalent anti-snake venom may cause anaphylactic reactions (Rao *et al.*, 2008). To overcome anaphylactic effect to antivenom, dexamethasone injection was given in this case. The fangs of the snake are supposed to be contaminated with various types of bacteria, to avoid that the dog was treated with broad spectrum antibiotic for 5 days. Poisoning from snake venom in animals is an emergency which requires immediate attention and treatment as early as possible otherwise delayed and inadequate treatment may lead to untoward consequences.



Fig. 1. Swollen and oedematous face



Fig. 2. Oozing of blood mixed fluid from the bitten area



Fig. 3. Presence of fang marks on the face



Fig. 4. Recovered animal after 5 days of treatment

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