

RUSSEL VIPER (*DABOIA RUSSELLII*) SNAKE BITE IN DOG AND ITS CLINICAL MANAGEMENT

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Abstract: A three years old dog was presented to the Veterinary College hospital, Shivamogga with a history of snake bite. Clinical examination revealed edema of face and fang mark on the left and right upper lip. Based on history and clinical examination the case was tentatively diagnosed as Russel Viper (*Daboia russelii*) bite. The hematological findings revealed leukocytosis. The dog was treated with polyvalent anti-snake venom (Serum Institute of India Ltd. Pune) for two consecutive days. Supportive treatments like tetanus toxoid inj, antibiotic combinations like ceftriaxone metronidazole and penicillin for 7 days along with fluids, diuretics. The animal was recovered uneventfully.

Keywords: Dog, Russel's Viper, Anti-snake Venom, Management.

Introduction

Snake bite is common in animals such as cattle, sheep, goat and dogs. Cases were more common in horses and dogs (Garg, 2000). Snake venom is a mixture of toxins. Depending on the type of snake the venom constituents vary. The animals exhibit various symptoms like cardio pulmonary dysfunction, local tissue damage, blood coagulation defects, ataxia etc, depending on type of snake bite. So snake bite with Envenomation requires immediate attention and treatment is must in such cases (Vijaykumar *et.al.* 2001). Russel's viper is one common poisonous snake in Indian subcontinent (Garg, 2000). The present paper discussed a case of Russel's viper (*Daboia russelii*) snake bite and its therapeutic management in a dog.

Case History and observation: A female Dash hound cross dog (9 Kgs) of age 3 year, was presented to the college hospital, Veterinary College, Shivamogga with the history of snake bite. Upon physical examination animal was dull, oozing of blood from bitten area on left and right upper lip (Fig.1), oedematous face, congested conjunctival mucus membrane, body temperature was 101.4°F and tachycardia were observed.

Diagnosis: The presence of fang marks on the left upper lip of the animal and the history given by animal owner regarding the colour and marks on the body of snake it was tentatively

diagnosed as Russell viper bite (Fig. 1). Before the treatment started the blood and serum samples were collected for hemato-biochemical analysis. The blood was analysed using automatic cell counting machine (Exigo veterinary haematology analyser, Boule Medical AB) and the serum was analysed for SGPT (Serum Glutamic Pyruvic Transaminase) creatinine using biochemical analyser (Auto lab-200, Merk Specialities Pvt. Ltd.). The various changes in the blood and serum parameters were depicted in the Table. Significant reduction in haemoglobin and PCV and SGPT level got elevated.

Treatment and Discussion: The dog was treated with 2 vials of lyophilized polyvalent anti-snake venom (Serum institute of India Ltd. Pune). Powdered form of anti-snake venom was reconstituted and slowly administered along with the 500ml of DNS (Dextrose Normal Saline). A course of antibiotic combinations were administered for first 7 days with Ceftriaxone@25mg/kg i/v, Metronidazole @20mg/kg BW i/v and Fortified procaine penicillin@40,000 IU/kg BW i/m. Tetanus toxoid 0.5ml i/m was also administered. Other supportive therapies like fluid, hemocoagulants (Ethamsilate @ dose 100mg total dose QID. Mbloc®_Tineta Pharma Pvt.Ltd.Mumbai), multivitamins (Bplex forte® Anglo-French Co. Pvt. Ltd.) and liver suppliments (Hepamust® Pet mankind Pvt. Ltd. New Delhi) and multivitamins (Multistar pet® Pet mankind Pvt. Ltd. New Delhi) were also administered for seven days. After three days facial swelling was reduced, but necrosis at the right maxillary region was observed (Fig 2). The wound was cleaned with antiseptic lotion and dressed aseptically. Regular wound dressing was done for next 10 days. The apatite got improved after 10th day onwards. Skin flaps at right maxilla were started rejoining on 15th day onwards (Fig. 3). The dog was fully recovered on 21st day post treatment (Fig. 4).

Snake venoms are composite mixture of many enzymes, proteins and peptide compounds. The Rusell's viper venom is majorly haemotoxic but also neurotoxic. Bite and envenomation to dogs generally occurs when they play in gardens. Usually mouth, neck and legs are the common sits of bite (Hussain *et al.* 2011). The swelling and necrosis at the site of bite is majorly because of proteolytic enzymes, collagenase, Phospholipase A2, and 5' Nucleotidase etc., (Garg, 2000). The alterations in the haematological parameters substantiate the previous report by Pal *et al.* (2012). The bleeding from the wound suggested the effect of venom interference in many components of haemostatic system (Wolff, 2006). The treatment of present case with various drugs is in accordane with Singh (2015). The use of steroids in the snake bite is still debated.

Table 1. Hemato-biochemical findings before and after therapy

Parameters	Pre-treatment 0 th day	Post-treatment		
		5 th day	15 th day	21 st day
Hemoglobin(gm%)	6.2	7	10	12
RBC(millions/cmm)	3.9	4.2	5.1	5.5
TLC($\times 10^3/\mu\text{L}$)	52.65	44.25	16.75	5.5
Platelets(lakhs/cmm)	7.2	6.5	3.2	2.4
SGPT/ALT U/L	160.63	152.53	144.15	102.24
Creatinine mg/dL	1.845	1.76	1.292	0.58
Total Protein g/dL	7.39	7.25	7.1	7.00

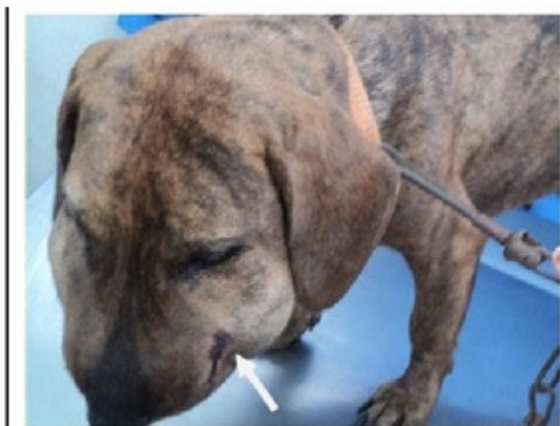


Fig. 1. Fang mark of snake bite above the left upper lip (arrow)

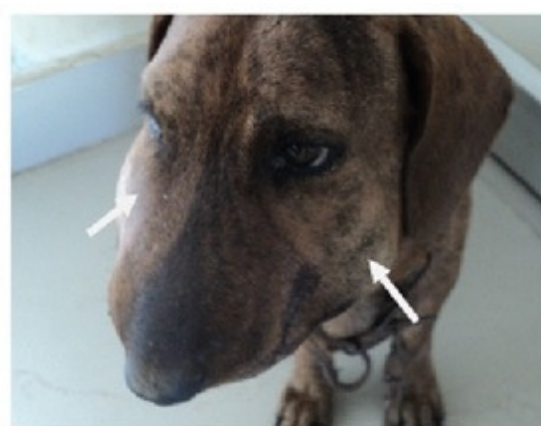


Fig. 2. Facial oedema on either side of the face of dog (arrow)



Fig. 3. Necrotized tissue at right upper lip (arrow)



Fig. 4. Rejoined skin flaps of bitten site at right upper lip (arrow)

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