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Management of snake bite envenomation in an indigenous cow

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Abstract
The four year indigenous cow was presented with the history of swelling in forelimb region and blood oozing out on the bite region. On clinical examination the fang mark below the swelling, haematuria, melena, pain and oedema at the swelling site was noticed. The whole blood clotting time test was positive and treated for snake bite envenomation with snake venom antiserum, fluids, antibiotics for three consecutive days and the animal was recovered uneventfully.

Keywords: Swelling, snake bite, hemotoxic, WBCT

Introduction
There are nearly 216 species of snakes in India in which 60 are considered poisonous [Gupta *et al*., 2014] [1]. The most common poisonous snakes in India were Indian cobra, Indian krait, Branded krait, Russel's viper, Hump-nosed viper and Saw-scaled viper. Among these cobra and viper constitutes neurotoxic and the viper of hemotoxic type. Russel's viper is one common poisonous snake in Indian subcontinent (Garg, 2000] [2]. Poisoning from snake venom in animals is an emergency which requires immediate attention or otherwise delayed and inadequate treatment may lead to untoward consequences so snake bite with Envenomation requires immediate attention and treatment is must. (Vijayakumar *et al*., 2001) [3]. On pursuing the literature, it was seen that envenomed livestock showed the mortality rate of above 47%. Snake bite imposes the sudden and huge economic loss to the farmers. The present paper discussed a case of Russel's viper (Daboia russelii) snake bite and its therapeutic management in a cross bred dairy cattle.

History and Observation
The indigenous cow of four years old presented with history of swelling in forelimb region and blood oozing out on the bite region from the previous day. On clinical examination, the animal was dull and depressed, congested mucous membrane. Temp: 38.2 °C, H/R: 56/min, R/R: 23/ min. The fang mark was noticed below the swelling. Haematuria and melena also noticed. It also evinced pain and oedema at the swelling site. The two millilitres (2 mL) of blood was collected from the animal and it was observed for its whole blood clotting time (WBCT). It was not clotted for more than six hours. Finally, the case was confirmed as snake bite envenomation of hemotoxic type.

Treatment and Discussion
On first day, the animal was treated with snake venom antiserum 20 ml, Inj. Cefoperazone sulbactam sodium @ the dose rate of 10 mG/ Kg body weight, Inj. Normal saline 500 Ml of four bottles, Inj. Flunixin meglumine @ the dose rate of 2.2 mG/ Kg body weight, Inj. Ethamsylate 10mL and Inj, Lasix 10mL and the animal responded well to the treatment. On the 2nd day the blood was clotted after two hours from the time of collection, the same treatment was followed along with tetanus toxoid, on the 3rd day, the collected blood clotted within 20 minutes, the same treatment was followed. On the fourth day all the symptoms such as haematuria, oedema, swelling and pain got disappeared and the animal was recovered uneventfully. Snake venoms are complex mixture of proteins and peptides, consisting of both enzymatic and non-enzymatic compounds. Snake venoms also contain inorganic cat ions such as sodium, calcium, potassium, magnesium, and small amounts of zinc, iron, cobalt, manganese, and nickel.

The other components of snake venoms are glycoproteins, lipids, and biogenic amines, such as histamine, serotonin and neurotransmitters (catecholamines and acetylcholine) (Klaassen, 2008) [4].

In this case, the animal showed the typical signs of snake bite of hemotoxic type (families of Viperidae, Crotalidae and Colubridae) such as haematuria, melena, swelling, pain, oozing of blood from the bite site and oedema. This was in accordance with the reports of (Banga *et al*., 2009) [5]. In some of the reported cases, the only sign noticed was respiratory distress and restlessness of neurotoxic type (Elapidae family**).** (Ullah, 2014) [6]. The clinical picture of snakebite exhibits a great deal of variation, depending upon the chemical composition of venom, type of animal affected, site of bite and amount of venom injected. During present study the identification of snake could done as Russell, s viper. Polyvalent antivenom available in India acts against Krait, Cobra, Russell, s viper and Echis. Therefore of polyvalent snake anti-venom was administered [Sai Butcha Rao *et al*., 2008] [7].

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