

CLINICAL MANAGEMENT OF SNAKE BITE IN PET ANIMAL

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ABSTRACT

A two year old male Labrador retriever dog was bitten by a poisonous Russel viper snake. Animal was very dull and depressed, swelling noticed around mouth region with frothy salivation, red patches in groin region and later jowl edema. The animal was treated with polyvalent anti-snake venom, fluids, antibiotics, corticosteroids and vitamin K. The animal recovered eventually.

Keywords: Labrador retriever dog, poisonous snake, anti-snake venom, snake bite treatment

INTRODUCTION

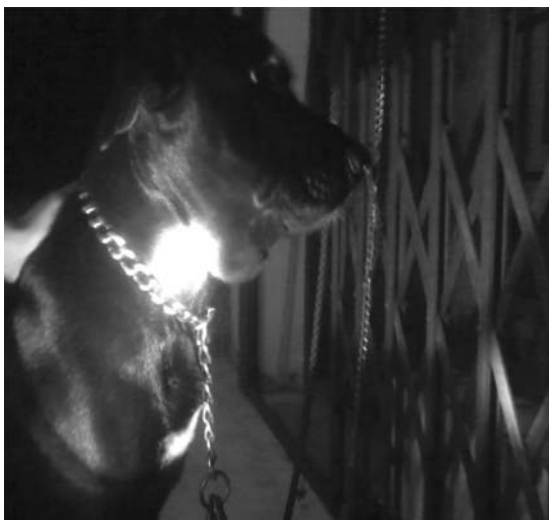
Most cases of snake bite were reported in ruminants, dogs and horses during grazing or while playing in the garden. Snakes venom is either neurotoxic, hemotoxic or cytotoxic. It is excreted through a modified parotid salivary gland located on each side of the skull behind the eye. Snake venom is a combination of proteins and enzymes and the enzymes in the venom are responsible for the symptoms. The most common types of enzymes are proteolytic, phospholipases and hyaluronidases.

Venomous snakes do not always inject venom when they strike. Nose and head bites can be dangerous because swelling may block nasal or tracheal air passages. Poisoning from snake venom in animals is an emergency which requires immediate attention, delayed and inadequate treatment may lead to untoward consequences. The present paper describes snake bite in dog and its therapeutic management.

CASE HISTORY AND OBSERVATIONS

Male Labrador retriever dog, aged about two years with the history of frothy salivation, dull, depressed, reluctant to move and swelling around the mouth. According to the history of owner, the dog noticed the snake inside the house and it was bitten by the snake when it was grasping the snake.

Animal was attended immediately (within an hour) and at that time swelling near the left mandible region was noticed along with drooling of saliva and red patches in groin region. The clinical parameters like rectal temperature, pulse and respiratory rate were 102°F, 51 per min and 22 per min, respectively. The animal showed sluggish responses to the reflexes. After an hour, the animal developed jowl edema.



TREATMENT AND DISCUSSION

The dog was treated with lyophilized polyvalent anti-snake venom (Bharat Serums and vaccine limited). The clear supernatant obtained after dilution with 10 ml of distilled water was administered intravenously with 500 ml of Normal saline. In addition, dexamethasone at the dose of 2 mg/kg was administered i/v and atropine sulphate at the rate of 0.04 mg/kg i/m. Further, ceftriaxone at the dose of 20 mg/kg i/v and tetanus toxoid 0.5 ml i/m were given. The anti-snake venom was

administered at 12 hours interval later as per Ananda *et al.* (2009).

Next day, blood mixed saliva was noticed. A dose of vitamin K, frusemide (Lasix) at the rate of 2 mg/kg slow i/v and dextrose normal saline, ringer's lactate of 300 ml each were given. A third dose of anti-snake venom, fluids, antibiotics, frusemide and corticosteroids were given on third day. Fluids and antibiotic were continued for five days. The animal started taking oral liquid food after 5 days of treatment. Swelling reduced gradually and the dog recovered successfully.

In most snakes bites, whether by a venomous snake or not, there will be minor pain and redness (in over 90% of cases, although this varies depending on the site). Bites by vipers and some cobras may be extremely painful, with the local tissue sometimes becoming tender and severely swollen within 5 minutes. This area may also bleed and blister and can eventually lead to tissue necrosis. Other common initial symptoms include lethargy, bleeding, weakness, nausea and vomiting. Symptoms may become more life-threatening with hypotension, tachypnea, severe tachycardia, severe internal bleeding, kidney failure and respiratory failure.

The numerous toxins present in snake venoms result in injury to several organ and systems including muscles, kidneys, and blood coagulation disturbances. The morbidity related to venomous snake bites is dependent upon the species of snake, the quantity of venom administered and access to appropriate medical treatment.

Most important constituent in snake venom is neurotoxins. Neurotoxins have a high preponderance for the peripheral

nervous system because most do not cross the blood brain barrier. They are responsible for the neuromuscular weakness and paralysis that ensues after sustaining a bite from a venomous snake. Following envenomation, the cranial nerves are usually affected first, which results in ptosis, ophthalmoplegia, dysarthria, dysphagia and drooling. This progresses to weakness of limb muscles, paralysis of the respiratory muscles and ultimately death if prompt treatment is not initiated (Paulchamy, 2009).

According to Klaassen (2008), hyaluronidase cleaves internal glycoside bonds in certain acid mucopolysaccharides resulting decreased viscosity of connective tissues allowing other fractions of venom to penetrate the tissues. The cyanotic edema observed at the site of bite may be attributed to enzyme hyaluronidase which acts as a spreading factor.

Sometimes lyophilized polyvalent anti-snake venom may cause anaphylactic reactions (Ananda *et al.*, 2009). So in order to overcome the untoward reaction

of antivenom, corticosteroid injection was given to the dog. However, in the present study corticosteroid was preferred over antihistamines as in certain times it potentiates the toxic action of the snake venom. As the fangs of the snake are supposed to be contaminated with various types of bacteria, tetanus toxoid and broad spectrum antibiotic was administered to the dog.

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