



Symptomatology and Treatment of Snake Bites in Animals

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Introduction

Snake bites are common in domesticated animals, and deaths occur due to venom or wound infection. During the bite, fangs inject venom. Fang marks on the skin are an indication of venomous snake bites. These are made up of a row of small punctures with two huge punctures outside of them. Non-venomous snakes only puncture the skin in two rows. The two most common groups of snakes are **Viperine** which causes hemorrhage, arteriolar thrombosis, and necrosis whereas **Elapine** snakes cause flaccid paralysis, mydriasis, and respiratory paresis. Venoms are most toxic to horses and can be lethal to dogs. Elapidae include coral snakes, cobras, kraits, and mombus, while rattle snakes, pit vipers, and water moccasins are very venomous.

Common Poisonous Snakes of India

1. *Najanaja*– Cobra
2. *Najahannat*– King cobra.
3. Russell’s viper – *Viperarusselli*
4. Saw scaled viper – *Echiscarinatus*
5. Krait – *Bungaruscoerulens*

The snakes of the genus viperine contain: **Haemolysin, Neurotoxin, Coagulin, Cytolytic and Necrotising factors.**

Cobra venom contains **Neurotoxins, Nephrotoxic factors, and Hemolytic factors.**

Causes of Death from Snake Bites

- ❖ Respiratory failure
- ❖ Intravascular clotting in vital organs
- ❖ Pulmonary oedema
- ❖ Paralysis of muscles of respiration
- ❖ Cardiac failure
- ❖ Acute renal failure (Coagulative necrosis)



Symptoms

- ❖ **Local symptoms include** oedematous swelling, ecchymosis, and extravasation at the site of the bite.
- ❖ **Systemic effects include** in cobra snake bites produces respiratory embarrassment, restlessness, salivation, dyspnea, regurgitation of ingesta, vomiting, ataxia, convulsion, and death from respiratory failure.
- ❖ Restlessness, tooth grinding, vomiting, salivation, dyspnoea, ataxia, convulsions, and other symptoms are common with rattle snake bites.
- ❖ Rapid swelling, pain, excitation, salivation, hyperesthesia, tetany, recumbency, paralysis, and death due to suffocation result from an adder snake bite.
- ❖ Drowsiness, muscle tremors, eyelid and lip droop, tongue paresis, laboured respiration, and other symptoms are caused by a brown snake bite. Death occurs as a result of venom or wound sepsis results from brown snake bite

Treatment

- ❖ Tourniquet the bite 1-2 inches above the skin.
- ❖ Wash wound or fang marks with 5% potassium permanganate solution.
- ❖ Make an incision as soon as possible to bleed out the venom. After 30 minutes, the incision should not be used.
- ❖ Antivenom administration (Antivenin). Polyvalent antsnake venom-serum (PASVS)/polyvalent antivenin (10-20 mL/animal) administered intravenously.
- ❖ Inject 5-7.5 mg/calf IV Neostigmine (Prostigmine) (Neostigmine stabilizes acetylcholine).
- ❖ Adrenaline (1:1000) 1-2 ml intravenous or subcutaneous (for Cobra bite).
- ❖ Corticosteroids, glucocorticoids, and dexamethasone can be given to counteract the effects of hyaluronidase (e.g. in Cobra bite).
- ❖ Tetanus toxoid should be administered.
- ❖ Fluids and electrolytes can be infused as per requirement.
- ❖ Monitor convulsions with parenteral Phenobarbital sodium injection.
- ❖ Analgesics may be used or administered.
- ❖ Atropine sulphate injection can be used to check salivation
- ❖ Blood transfusion or a blood expander can be used to treat hematuria.
- ❖ Maintain the animal's warmth.