

SUCCESSFUL CLINICAL MANAGEMENT OF HEMOTOXIC SNAKE BITE IN A MARATHWADI BUFFALO - A CASE REPORT

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Abstract: A buffalo with history of sudden jumping in panic while grazing before 3 hours, followed by ascending type of swelling on right hind leg at the level of stifle joint. On clinical examination, the buffalo exhibiting lameness and the fang mark of snake bite at the coronate region of the right hind leg. The haematological analysis showed reduced levels of Hb, TEC and PCV with marked thrombocytopenia and elevated levels of TLC and neutrophils. The biochemical analysis revealed increased AST, ALT, triglyceride, total bilirubin, total protein, albumin and globulin. The affected buffalo was treated with polyvalent antisnake venom with D 5%, Dexamethasone, Amoxicillin, frusemide, meloxicam, carbazochrome salicylate, and B complex. The buffalo recovered after 3 days of treatment with reduced swelling.

Keywords: Snake bite, buffalo, antisnake venome, fang mark.

INTRODUCTION

Snake bites are common in domestic animals and have been reported in dogs, cats, sheep, cattle, buffaloes and horses. Snake bite is an emergency and proper timely treatment is necessary (Vijaykumar *et al.*, 2001). Snake venom is the mixture of most harmful biotoxins in the world. Krait and cobra venom contains acetylcholine (Ach) esterase, phospholipase B and glycerophosphatase. Hyaluronidase promotes the spread of venom through the tissue. Proteolytic enzymes are responsible for local changes in permeability leading to edema, blistering, bruising and local necrosis (Williams *et al.*, 2010; Warrell *et al.*, 2013). Venom secretion in all venomous snakes appears to vary in seasons; more in warmer months with high morbidity and fatality. The present case study discusses medicinal management of Russells Viper snake bite in a buffalo.

MATERIAL AND METHOD

A 6 year old marathwadi buffalo was presented at Veterinary Department of Veterinary Clinical Medicine, COVAS, Parbhani with anamnesis of snake bite of Russel viper, no previous history of any clinical illness. The buffalo was showing lameness from affected leg, mild respiratory distress, mild fever and restlessness. Mildly pupil was dilated and ascending swelling from the site of bite to the thigh region (Fig. 1) was present. Fang marks with serosanguineous fluid and some blood clots at the site matching to the fang marks were noted. The haematological analysis showed reduction in haemoglobin (8.4 g/dl), total RBC count ($5.1 \times 10^6/\mu\text{l}$) and PCV (23%) values; elevated levels of Total Leucocyte Count (TLC) $16.8 \times 10^3/\mu\text{l}$ and neutrophilia (N 73%), thrombocytopenia (25000/CUMM) was seen on the differential leucocyte count. The biochemical analysis revealed increased in values of serum AST (245 U/L), ALT (120 U/L), triglyceride (37 g/dl), total bilirubin (0.9 mg/dl), total protein (9 g/dl), albumin (4.2g/dl) and globulin (4.6 g/dl). The values of serum creatinine (1.6mg/dl), BUN (31 mg/dl) and ALP (91 IU/L) were within the normal range. The blood clotting time was increased to 25 min. The case was diagnosed as hemotoxic snake bite based on history of snake bite and lameness and typical clinical symptoms as fang mark, ascending swelling over the leg, and marked thrombocytopenia and increased blood clotting time.

The buffalo was treated with 20 ml of polyvalent anti snake venom (PV-ASV) 2 vials IV single dose. Antimicrobial inj. amoxicillin+cloxacillin @ 10 mg/kg IV, diuretics therapy Inj. Frusemide @ 4mg/kg IM, anti-inflammatory therapy inj. meloxicam @ 0.5 mg/kg IM; glucocorticoid therapy inj. dexamethasone @ 0.04 mg/kg IV, styptic inj. carbazochrome salicylate @ 10ml IM; Fluid therapy with inj. D5% @ 20 ml/kg IV, inj. RL @ 20mg/kg IV and anti-stress therapy inj. ascorbic acid @ 10ml IV (Sadhu *et al.*, 2022). The fluid therapy was continued on second and third day along with diuretics to facilitate excretion of snake venom from the buffalo's body. Ascorbic acid was used as supportive therapy for faster tissue healing and its anti-stress quality. The animal was kept under close observation and monitored carefully during course of treatment till recovery.

DISCUSSION

Depending on pathogenicity, snake venoms are classified as cytotoxic, neurotoxic, coagulopathic and hemotoxic. Venom induced thrombocytopenia is frequently observed in animals having bitten with viper snakes (Segev *et al.*, 2004) which is similar to the present finding of thrombocytopenia in our case. Polyvalent antivenom available in India acts against krait, cobra, Russell's viper and Echis. It accelerates the dissociation of the toxin receptors

complexes, reverses the paralysis and neutralizes circulating venom. ASV should be administered as soon as signs of systemic or severe local swelling are noted (Williams *et al.*, 2010; Warrell, 2010). The buffalo recovered completely after 3 days of treatment (Sadhu *et al.*, 2022; Kachhawa *et al.*, 2016) (Fig. 2). The swelling reduced and buffalo started taking feed and water from the 3rd day of treatment. The blood clotting time came to normal (7 min) along with increase in number of thrombocytes (200000/cumm).

CONCLUSION

It is concluded that on time diagnosis and proper treatment of snake bite with polyvalent anti-snake venom (PV-ASV) can save the life of affected buffalo.

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Fig. 1. Ascending swelling on the affected limb



Fig. 2. Complete recovery after 3 days