

Clinical management of snake envenomation in a sheep-a case report

M.P. Sakhare¹, M.F. Siddiqui¹, T. A. Shafti¹, S.T. Borikar¹, M. U. Pawar² and V.B. Shelke²

¹Assistant Professor, ²M.V.Sc. Scholar, Department of Veterinary Medicine, College of Veterinary and Animal Sciences, MAFSU, Parbhani-431 402, Maharashtra

Abstract

A four years old female sheep was presented with the history of snake bite, frothy salivation, incoordination, sternal recumbency and swelling at right forelimb. The clinical examination revealed polypnea, halitosis, dyspnea, ptosis, extended neck, hypersalivation and prolonged blood clotting time. On the basis of history, clinical findings and blood clotting time, the case was diagnosed as snake envenomation. The hematological parameters showed reduced values of hemoglobin, packed cell volume and increased total leukocyte count. The successful treatment was done with anti-snake venom serum, fluid, non-steroidal anti-inflammatory drugs, antibiotic and diuretics with careful monitoring. Animal showed complete recovery after 5 days of treatment.

Key words: Sheep, Blood clotting time, Snake envenomation

Snake bite is an important and common cause of accidental death in livestock that most commonly happens during grazing on the fields. India has an approximate 2.8 million snake bite cases which are a very common cause of death in animals especially in rural areas (Williams *et al* 2010). Fang marks are frequently observed signs of snakebite on affected body parts in susceptible animals and mainly inflicted on the muzzle and limbs. Snake envenomation usually results into death or chronic disability in most of the animals. Death mostly occurs due to airway obstruction or respiratory failure. The delayed access to appropriate veterinary facility, lack of antivenom serum and limited supportive treatments were considered the main factors for high morbidity and mortality rate in livestock.

Case History and Observations

A four years old female sheep was presented with history of snake bite and showing symptoms such as frothy salivation, dullness, depression, incoordination and sternal recumbency (Figure 1) to the Department of Veterinary Medicine, COVAS, Parbhani. Detailed physical examination revealed cyanotic swollen areas with fang marks on right forelimb. On clinical examination, the animal revealed polypnea, halitosis, dyspnea, ptosis, extended neck, hypersalivation, blood tinged nasal discharge (Figure 2), cold extremities and reduced reflexes. The rectal temperature, pulse and respiratory rates were 99°F, 120 bpm and 35 per minute, respectively and mucus membrane was pale. The blood

sample from sheep was collected for examination of blood clotting time and estimation of various hemato-biochemical parameters. The hematological parameters revealed decreased hemoglobin concentration (10 gm/dl), packed cell volume (20%) and increased total leukocyte count (18000/ml). The biochemical analysis showed elevated levels of AST (90 IU/dl), BUN (64 mg/dl) and creatinine (1.96 mg/dl). Blood clotting time was more than 25 minutes.

Treatment and Discussion

The case was treated with Inj. Polyvalent anti-snake venom serum 20 ml in 500 ml of Normal Saline i/v OD and Inj Tetanus Toxoid 2 ml i/m OD, on the first day. Also, amoxicillin and cloxacillin @ 10 mg/kg bw i/m, ascorbic acid 20 ml in 250 ml of Normal Saline i/v, frusemide @ 4 mg/kg bw i/m and meloxicam @ 0.5 mg/kg bw i/m for five days. The animal was kept under observation. After three hours of treatment, sheep started defecation and other physiological parameters started improving and uneventfully sheep recovered after three days of treatment (Figure 3, 4).

Snake venoms are complex mixture of proteins and peptides, consisting of both enzymatic and non-enzymatic compounds. In addition, it contains inorganic cations such as sodium, calcium, potassium, magnesium, and trace amounts of zinc, iron, cobalt, manganese, and nickel. Clinical signs such as frothy salivation, dullness, muscular weakness with abnormal gait observed in the present study can be attributed to the presence of enzymatic and non-enzymatic

*Corresponding author :



Figure 1: Prescapular swelling with sternal recumbancy



Figure 2: Blood tinged nasal discharge



Figure 3: Reduction in swelling with attempt to walking (2nd day after treatment)



Figure 4: Normal feeding and watering (4th day after treatment)

compounds in the snake venom. Farooq *et al.*, (2014) reported respiratory distress, restlessness and sudden death and postmortem findings such as multiple snake bite marks on teats, mammary gland and external genitalia with profuse swelling in a Jersey cow. The change in the hematological parameters might be due to alteration in the blood cells due to hemolytic effects of snake venom. The enhanced biochemical values like alanine aminotransferase and creatinine may be due to the hepatotoxic and nephrotoxic effect of snake venom (Shea, 2005), which was also observed in the present case. Snake bite requires immediate treatment with anti-snake venom and other supportive therapy to reverse the pathological changes. Snake bite envenomation is a true emergency and needs rapid investigation and proper treatment.

References

- Chauhan, R. S. 2010. Textbook of Veterinary Pathology. IBDC publishers. Lucknow. pp-651.
- Farooq, U., Irshad, H., Ullah, R. W., Ullah, A., Afzal, M., Latif, A. and Zahur, A. B. 2014. Snake bite in Jersey cattle; a case report. *Research Journal of Veterinary Practice*. **2(5)**: 82–83.
- Shea, M. O. 2005. *Venomous Snakes of the World*. Princeton: Princeton University Press. pp-160.
- Williams, D. J., Gutiérrez, J. M., Harrison, R. A. and Gopalakrishnakone, P. 2010. The Global Snake Bite Initiative: An antidote for snake bite. *The Lancet*. **375(9708)**: 89-91

Received : 16.03.2020

Accepted : 22.06.2020