

Snake Bite Case in Holstein Friesian Cattle at Private Dairy Farm in Hyderabad, Sindh

Khan A¹, Yousaf A^{1*}, Shahnawaz R¹, Latif Bhutto A¹, Baqir Y², Sakhawat A³, Tabbasum R³, Awais T³, Arshad M³, Habib F⁴, Shaheen S⁴, Bachaya A⁴ and Rahman K⁴

¹Faculty of Animals Husbandry and Veterinary science, Sindh Agriculture University, Pakistan

²Department of Agriculture Science, Allama Iqbal Open University, Pakistan

³Faculty of Veterinary Science, University of Veterinary and Animals Science, Pakistan

⁴Department of Livestock and Dairy Development Quetta, Pakistan

***Corresponding author:** Adnan Yousaf, Faculty of Animals Husbandry and Veterinary science, Sindh Agriculture University Tandojam, Pakistan, Tel: +923005662008; Email: dr.adnan011@gmail.com

Received Date: September 16, 2021; **Published Date:** October 14, 2021

Abstract

A Seven-year-old female Holstein Friesian cows was confined at the Private dairy farm Hyderabad, Sindh was bitten by a snake. Respiratory trouble, restlessness, and rapid death were the only clinical indications noted in the victim. Multiple snake bite marks on the teats, mammary gland, and external genitalia were discovered after the death, along with extensive edoema. The animal's skin was tarnished and bluish in appearance. The animal's eye pupil was dilated. Subcutaneous hemorrhages, congested and edematous lungs, and a trachea loaded with foamy discharges were discovered during an internal inspection of the corpse. The right chamber of the heart was dilated, the intestines seemed hemorrhagic, the liver was pale and discolored, and the spleen was reduced. The animal died of a snake bite, according to history and necropsy findings.

Keywords: Snake Bite; Holstein Friesian Cattle; Acute Poisoning; Cobra

Introduction

Snake bite is a common cause of accidental death in livestock in Pakistan. In the country, there is no precise data on snake bites in livestock. However, this is a prevalent cause of mortality among animals, particularly in Pakistan's rural areas. The Indian or spectacled cobra and the Central Asian or Oxus cobra are the two subspecies of cobras found in Pakistan. These species are similar in size, with an average length of 1.9 meters and a maximum length of 2.4 meters. In both sexes, the body color of these species ranges from yellow to dark brown to black. Male snakes are generally heavier and shorter than female snakes, with the exception

of their longer tail. The Indian Cobra can be found in regions with some vegetation, such as moist grassland, which is common near villages or areas with some agriculture. They are members of the Elapidae family. The venom of the Indian Cobra is primarily neurotoxic, but it also includes cardiotoxin [1]. Proteins and polypeptides are the most toxic components [2].

Material and Methods

A case of cobra envenomation in a female is described in this clinical article. A seven-year-old high-yielding Holstein Friesian cow was discovered dead in a pen at the Private dairy

farm at Hyderabad, Sindh. The animal's death was discovered early in the morning. The cow was in perfect health and had never been diagnosed with any disease. The cow was stall fed and grazed in the fields near dairy farm, mostly on cut grasses. This study station's animals are milked twice a day. In the morning and evening, the attendant transports these animals to the milking enclosures.

Results and Discussion

This cow was milked at 6:00 a.m. and was later discovered dead at 8:00 a.m. The victim had no clinical indicators before to death, and the animal was only exhibiting respiratory signs of distress and restlessness, according to reports. Multiple snake bite marks were discovered on the mammary glands and external genitalia during the postmortem investigation. The cow's vulva was enlarged from edematous secretions. The animal's skin was discolored and bluish in tone, and the pupil of its eyes was dilated. Fang marks were discovered after skin retraction, with a buildup of sero-sanguineous fluid and blood clots near the fang marks' location. Internal examination of the carcass revealed subcutaneous hemorrhages and frothy discharges from congested and edematous lungs and trachea. The right chamber of the heart was dilated, the intestines were hemorrhagic, the liver was discolored and pale, and the spleen had shrunk. During the postmortem examination, no further obvious lesions were discovered. It was determined that the animal died of Snake Bite based on clinical indications, postmortem lesions, and history. Snake Bite was identified by the sudden death of the animal with no specific clinical or postmortem symptoms other than respiratory distress and the presence of several fangs markings in the calf. In the grazing pastures surrounding the dairy farm, snakes, including cobras, have been seen. The snake bite victim showed many fang marks, which could be attributable to the cobra snake's tendency of delivering multiple bites in a single strike. A similar observation was made by another person Carswell D, et al. [3]. Multiple fang marks on the carcass could potentially be the result of the animal's defensive and/or vigorous motions. The usual cobra bite contains 200-500 mg of venom [4], and bites are more common in the morning and evening than at night [5], as was the case in this case. Snake venom is made up of a complex mixture of proteins, enzymes, and extremely basic polypeptides [6]. The venoms of snakes are frequently classified as neurotoxic, hemotoxic, or both [Jiminez-Porras JM, et al. [6]; Greene HW, et al. [7]. It was found that neurotoxins are high in basic amino acids and damage neuromuscular connections [8]. Snake venom contains neurotoxins that affect the central nervous system, causing circulatory collapse and coma in the sufferer. Respiratory failure is the cause of death. Oedema, erythema, hemolytic anemia, and swelling of facial and laryngeal tissues are caused by

hyaluronidase, phosphodiesterase, and peptidase in cobra venom, as well as hemoglobinuria, cardiac abnormalities, and a drop in blood pressure, shock, and neurotoxicity [9]. On post-mortem examination, the same was found in this case. Plant poisoning, allergic reactions and other poisonous bites all cause respiratory trouble and restlessness. As a result, a snake bite could be mistaken for severe plant poisoning, an allergic reaction, or other dangerous bites. In this case, however, the history and existence of snake bite marks, along with respiratory discomfort, restlessness, and rapid death, were all apparent signs of snake bite. On the basis of the animal's history and necropsy findings, it was determined that the animal died as a result of a snake bite, which is rarely identified and reported.

Preventative Measure

Some preventative measures should be taken to control the snake population near livestock sheds, according to the report. Reduced food (rodents) and shelter are two of the most effective ways to limit snake populations. Furthermore, the population of snakes might be regulated by inspecting their hides and killing them with a club or a gun. Some chemicals, such as nicotine sulphate, strychnine sulphate, and calcium cyanide, can be used to kill snakes, although they may harm other creatures Prasad V, et al. [10].

References

1. Capula M, Mazza G, Behler JL (1989) Simon and Schuster's guide to reptiles and amphibians of the world. Simon & Schuster fireside Publishers. New York, pp: 256.
2. Roy A, Zhou XD, Chong MZ, Rajagopalan N, Nirthanam S, et al. (2010) Structural and functional characterization of a novel homodimeric 3-finger neurotoxin from the venom of *Ophiophagus hannah* (King Cobra). *J Biol Chem* 285(11): 8302-8315.
3. Carswell D (2010) King Cobras can be found in many places in Thailand, majority being in the Khaosok.
4. Shea MO (2005) *Venomous snakes of the world*. Princeton University Press. New Jersey, pp: 160.
5. Punde DP (2008) Snake bite (perspective of elapidae bites in rural Maharashtra) Proceedings of SNA-CON 2008 at Little Flower Hospital, Angamaly Kerala.
6. Jiminez-Porras JM (1968) Pharmacology of peptides and proteins in snake venoms. *Annual Review of Pharmacology* 8: 299-318.
7. Greene HW (1997) *Snakes: The Evolution of Mystery*

-
- in Nature. Berkeley, California: University of Berkeley Press, pp: 351.
8. Lee CY (1972) Chemistry and pharmacology of polypeptide toxins in snake venoms. *Annu Rev Pharmacol* 12: 265-286.
 9. Chauhan RS (2010) Textbook of Veterinary Pathology. IBDC publishers. Lucknow, pp: 651.
 10. Prasad V, Koley KM (2006) Synopsis of Veterinary Pharmacology and Toxicology Vahini Publications, pp: 324-325.