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Case Report

Snake Bite in Jersey Cattle; a Case Report

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ABSTRACT

This clinical article reports a case of snake bite in a five years old female Jersey cow kept at Livestock Research Station, National Agricultural Research Centre Islamabad, Pakistan. The only clinical signs observed in victim were respiratory distress, restlessness and sudden death. Postmortem examination revealed multiple snake bite marks on teats, mammary gland and external genitalia with profuse swelling. The skin of the animal was discolored and appeared bluish in color. The eye pupil of the animal was dilated. Internal examination of the carcass revealed subcutaneous hemorrhages, congested and edematous lungs and trachea filled with frothy discharges. The right chamber of heart was dilated, intestines appeared to be hemorrhagic, liver was discolored and pale and spleen was shrunken. History and necropsy findings revealed that the animal died of snake bite.

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In Pakistan, snake bite is an important and common cause of accidental death in livestock. Exact data on snake bite in livestock is not available in the country. However, this is very common death cause in animals especially in rural areas of Pakistan. There are two sub–species of cobras found in Pakistan, the Indian or spectacled cobra (naja naja naja) and the Central Asian or Oxus cobra (naja naja oxiana). The sizes of these species are same with an average length of about 1.9 meters and maximum length up to 2.4 meters. Body color of these species is yellow to dark brown and black in both sexes. Male snakes are generally heavier and shorter as compared to females; the only difference is their longer tail. The Indian Cobra is found in areas with some vegetation, such as damp grassland, which often occurs around villages or areas with some cultivation. They belong to family Elapidae. Venom of Indian Cobra predominantly contains neurotoxins, but it also contains cardiotoxin (Behler, 1989). Toxic constituents are mainly proteins and polypeptides (Roy et al., 2010). This clinical article reports a case of cobra envenomation in a female jersey cow.

A five year old high yielding jersey cow kept at Livestock Research Station (LRS), National Agricultural Research Centre (NARC), Islamabad was reported to be found dead in pen. The death of the animal was reported early in the morning. The cow was healthy with no previous history of any clinical illness. The cow was stall fed and grazed in the vicinity of LRS, mainly on cut grasses in fields. The animals kept at this research station are milked twice. The attendant takes these animals to milking pens in morning and evening. This cow was milked at her scheduled time at 6:00 AM and later found dead at 8:00 AM.

The victim did not showed any clinical signs before the death and it was reported that the animal was only exhibiting the respiratory signs of distress and restlessness. On postmortem examination, multiple snake bite marks were observed on mammary glands and on external genitalia. The vulva of the cow was swollen with edematous discharges. The skin of the animal was discolored and it appeared to be bluish in color; the eye pupil was dilated. Fang marks were observed after retraction of skin with accumulation of sero–sanguineous fluid and blood clots at the site corresponding to the fang marks.

Internal examination of the carcass revealed subcutaneous hemorrhages; congested and edematous lungs and trachea was filled with frothy discharges. The right chamber of heart was dilated, intestines appeared to be hemorrhagic and liver was discolored and pale, spleen was shrunken. No other gross lesions were seen during postmortem examination. On the manifestation of clinical signs, postmortem lesions and history, it was concluded that the animal died of Snake Bite.

Sudden death of the animal with non specific clinical and postmortem findings except the respiratory distress and presence of multiple fangs marking in the cattle was indicative of Snake Bite. Snakes including cobra have been observed in grazing fields around NARC. The victim of the snake bite had multiple fang marks which may be due to the cobra snake habit that is its capability of delivering multiple bites in single attack. Similar observation was reported by (Carswell, 2010). The presence of multiple fang marks on the carcass may also be due to the defensive and/or vigorous movements of the animal. Cobra species can deliver about 200–500 mg of venom on average (Shea, 2005) and their bites are very common in the morning and evening than during night (Punde, 2008) which happened in this reported case. The composition of snake venom is highly

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complex containing many proteins, enzymes and strongly basic polypeptides (Jiminez–Porras, 1968). Though snakes venoms are often characterized as either neurotoxic, hemotoxic, or both (Jiminez–Porras, 1968; Greene, 1997). Neurotoxins are rich in basic amino acids (Lee, 1972) and disrupt neuromuscular junctions (Jiminez–Porras, 1968; Greene, 1997). Neurotoxins present in the snake venom attack the central nervous system and results in cardiovascular collapse and the victim falls into a coma. Death soon follows due to respiratory failure. Hyaluronidase, phosphodiesterase and peptidase in cobra venom are responsible for oedema, erythema, hemolytic anemia, and swelling of facial and laryngeal tissues, hemoglobinuria, cardiac irregularities, and fall in blood pressure, shock and neurotoxicity (Chauhan, 2010). Same was observed in this case on post–mortem examination.

Respiratory distress and restlessness are also observed in plant poisoning, allergic reaction and other venomous bites. Therefore, snake bite may be misdiagnosed with acute plant poisoning, allergic reaction and other venomous bites. However, in this case history and presence of snake bite marks with respiratory distress, restlessness and sudden death were clear indications of snake bite.

On the basis of history and necropsy findings, it was concluded that the animal died of snake bite, which most of the time is not diagnosed and reported. It is suggested that some precautionary measures should be adopted to control the snake population near animal sheds. One of the most effective methods of controlling snake numbers is to reduce their food supply (rodents) and shelter. Moreover, snake population could be controlled by searching their hides and killing them by clubbing or shooting. Some chemicals such as nicotine sulphate, Strychnine sulfate and Calcium cyanide can also be used to kill snakes however; these chemicals may affect other animals (Prasadand Koley, 2006).

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