

Case Report

A Case Report on Lumpy Skin Disease in A Cow in Damot Sore District, Wolaita Zone, Southern Ethiopia

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Abstract

Lumpy skin disease (LSD) is a disease responsible for huge economic losses in the cattle producing industries, particularly in Africa. A local breed cow with nodular eruptions on different body parts was examined at Gununo veterinary clinic, Wolaita sodo, on April 2, 2024. The cow was febrile with a rectal body temperature of 40.4°C and had a flare-up of small to large sized circumscribed nodules on different body parts and the neck area in particular. Besides, there was lameness, swelling of both prescapular and prefemoral lymph nodes. Based on the history and clinical findings the case was diagnosed as Lumpy Skin Disease (LSD). The case was managed vigorously with short-acting oxytetracycline (100 mg/kg/day, IM) for five consecutive days and dexamethasone (0.2 mg/kg/day, IM) for three successive days. The cow was fully recovered three months post-treatment and sold. Hence, opportune treatment of LSD with anti-biotic and anti-inflammatory drugs is indispensable in reducing the losses.

Keywords: Cow; Lumpy skin disease; Treatment

Introduction

Lumpy skin disease is an infectious and occasionally fatal disease of cattle [1]. It is among the major health problems affecting the livestock industry of most developing countries like Ethiopia [2-4]. The disease is caused by lumpy skin disease virus for which Neethling strain is the prototype and transmitted mechanically by arthropod vectors [5-7]. Temporally LSD is shown to be aggregated during the warm and humid months of the year [8], which is directly associated with vector abundance. These authors also revealed the role of husbandry practices such as commingling of animals at communal grazing and watering points in the transmission of LSDV.

Lumpy skin disease lesions may explode from 7 to 14 days post infection under experimental conditions whereas in natural cases it takes 2 to 5 weeks. The disease is manifested by distinguishing firm, circumscribed, few (mild forms) to multiple (severe forms) skin nodules, which sometimes involve mucous membranes of the respiratory system, urogenital system and other internal organs [9,10]. In severe cases continuous high pyrexia (40°C to 41.5°C), depression and anorexia may ensue [11]. Subsequently, milk production lessens, abortion, temporary or permanent sterility, damage to hide and deaths will occur which further contribute to a momentous economic loss [12,13].

The clinical cases of LSD can be confirmed using conventional or real-time PCR methods using tissue or blood [14]. Although

prevention with available vaccine plays significant role in controlling the occurrence of LSD in endemic areas, treatment of clinical cases as early as possible might reduce the complications and economic losses of the disease. These could be achieved through treatment of secondary bacterial complications using a combination of antimicrobial and anti-inflammatory drugs [15,16].

Case Presentation

A local breed cow was examined at Gununo veterinary clinic, Wolaita Sodo, Ethiopia on April 2, 2024, with complaint of nodular eruptions on different body parts. According to the complaints, the feed intake and performance of the animal was also reduced. The animals were kept in communal grazing land with other herds and they were not vaccinated for more than a year. Upon physical examinations, the cow was lethargic and febrile with the rectal body temperature of 40.4°C and 64 beats/min and 36 breaths/min heart and respiratory rates, respectively. There was a flare-up of small to large sized circumscribed nodules on different body parts and the neck area in particular. The nodules were also seen on the front and hind legs. Some nodules coalesced and form larger nodules. Besides, there was lameness, swelling of both prescapular and prefemoral lymph nodes. The tentative diagnosis was established as Lumpy Skin Disease (LSD) based on the history, clinical findings and eruption of similar cases in other areas.

Clinical examinations and findings

On clinical examination the cow was having temperature 40.4°C, respiratory rate 36 breaths/min and pulse rate 64 beats/min. Skin nodules with average diameter of 0.4 cm was seen all over the skin. The cow was depressed and the limbs were swollen and pits on palpation. Prescapular and prefemorallymph node was swollen and hot (Figure 1).

Diagnosis

Diagnosis and its differential diagnosis: Diagnosis of LSDV is performed by observation of characteristic clinical signs. The differential diagnoses are photosensitization, Pseudo lumpy skin

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Figure 1: An arrow showing that subcutaneous skin nodule due to lumpy skin disease.

disease; Bovine herpes virus, Besnoitiosis, Insect bites and allergic reactions, Demodicosis and Onchocerciasis.

Treatment and management

The treatment of the cow was aimed at reducing pain to the animal and losses of the disease. Hence, therapy of 10% Oxytetracycline (Shanghai Thongren Pharmaceutical Co., Ltd, China) at 100 mg/kg/day for five successive days and Dexamethasone (Sokar Healthcare Pvt Ltd. Gujarat India) 0.2 mg/kg/day for three consecutive days were managed I.M. The owner was also advised to segregate and nurse the animal at home until fully recovered. Feed intake has been recommencing gradually (reported by owner) and also rectal body temperature was dropped to 39.7°C and 38.5°C after 24- and 48-hours post-treatment, respectively (at clinic), however the nodules were present during the courses of therapy. After a month later the cow was fully recovered and nodules were also disappeared but with scars on the skin. A week after recovery, the owner reported that he sold his cow.

Discussion

Lumpy skin disease is enzootic in Africa, mainly a disease of cattle with 20% morbidity and 2% case fatality [17]. Based on the clinical signs, history and laboratory result, the current incident was confirmed as LSD which is in agreement with Al-Salih [18], Mauldin and Peters Kennedy [19] reports. According to these authors, infected animals may show fever commonly rises to 40°C to 41.5°C, lacrimation, nasal discharge, anorexia, dysgalactia, general depression and a disinclination to move. The usual manifestations of LSD are multiple firm circumscribed nodules developed in the skin of the animals in which head, neck, the perineum, the genitalia, udder, and the limbs are principally involved. The regional lymph nodes are easily palpable and enlarged 3-5 times their normal size. Most cases may complicate or extend to other underlying tissues or internal organs and may sequel in economically significant disorders [20]. LSD is not associated with high mortalities (1% to 3%) however, the economic losses accompanying LSD eruption is higher. The losses are significant due to decreased feed intake, milk production, weight conversion, abortion and infertility, and damaged hides [21-25]. Therefore, systemic antibiotic and anti-inflammatory drugs are obligatory for skin infections, cellulitis or pneumonia, and considerably to avoid further complications and economic losses.

In the present case report, 10% Oxytetracycline and Dexamethasone were managed; consequently, fever, anorexia, nodular lesions and other deviations were remarkably improved but the skin healed with scar. Similarly, a treatment trial conducted by Salib and

Osman [26] with the aim of preventing LSD complications and saving the life has been successful using a combination of antimicrobials, anti-inflammatory, supportive therapy and antiseptic solutions. According to these authors, the complications encountered during the trial have been recovered within 3 days to 2 weeks. However, the treatments do not guarantee full recovery as the skin nodular restoration prolonged and healed with scar.

Conclusion

In conclusion, lumpy skin disease is very important viral disease of cattle which brings significant economic problem and characterized by distinctive nodular lesions principally on the skin, hence reduces hide quality. The treatment of LSD (its complications) is costly as well as does not ensure full recovery therefore; prevention is more beneficial to avoid the substantial economic losses due to hide damages, loss of milk due to mastitis and loss of animal product due to death. Vaccination of cattle was effective control measures in preventing the spread of LSD.

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