



Lumpy Skin Disease

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Abstract

Lumpy skin disease or LSD is a disease of cattle and buffaloes causing high morbidity rates in animals. In the year 2022, the disease caused a wide spread havoc throughout the Indian subcontinent affecting thousands of animals. Clinically the disease is manifested by nodules on skin along with fever and anorexia. Treatment is largely based on relieving the symptoms of the animals and providing them with balanced diet. Prevention of this disease is must as once spread, it transmits to other animals at a very high speed thus causing severe decrease in their productivity.

Keywords: Viral Disease; Morbidity; Fever; Nodules; Productivity

Introduction

Lumpy skin disease (LSD) is a viral disease of the economic importance affecting bovines and buffaloes and is caused by lumpy skin disease virus (LSDV), a member of Capripoxvirus genus of Poxviridae family [1]. It is a burning topic these days due to its recent outbreak which leads to huge loss in economy. The disease spreads by means of arthropod vectors and causes high morbidity and low mortality. Fever, anorexia, and characteristic nodules are the clinical findings of this disease. LSD is endemic in Africa and Middle East countries but is spreading to other parts of the world nowadays. It has been recently reported from China and Bangladesh sharing borders with India. Vaccinating the animals along with adopting strict quarantine measures could be effective for preventing the spread of the disease [1].

Spread

The common stable fly (*Stomoxys calcitrans*), the Aedes mosquito, have the ability to spread the LSDV. Direct contact is other source of infection. Infected animals may be viraemic for only a few days however viraemia may last for up to two weeks. Animals showing lesions excrete LSDV in saliva, as well as in nasal and ocular discharges. Infectious LSDV remains viable inside crusts, particularly when these drop off from the skin lesions from the body. Field experience shows that when healthy cattle are introduced to LSDV-infected holdings after stamping out, they become infected within a week or two which shows that the virus persists either in vectors, the environment, or both. Semen of infected bulls also

contains virus, so natural mating or artificial insemination can also be the source of infection for females, Therefore Infected pregnant cows are known to deliver calves with skin lesions. Moreover, the virus may be transmitted to suckling calves through milk or through the lesions in the teats [2].

Clinical signs and symptoms

The incubation period of this disease varies from one to five weeks. Clinical signs include:

- Clinically, the disease is characterized by a generalized cutaneous eruption of round, firm nodules, varying from 0.5 cm to 5.0 cm in diameter. Nodules also appear on oral, nasal, and genital mucous membranes, and there is enlargement of the superficial lymph nodes. The number of nodular lesions varies from a few in mild form of the disease, to multiple lesions in severely infected animals. Necrotic plaques in the mucous membranes of the oral and nasal cavities are also observed. Typically, the centre of the lesion ulcerates and a scab forms on top [3].
- Lacrimation and nasal discharge are first manifestation of the disease. Lymph nodes become enlarged and are easily palpable.
- High fever (>40.50C) may persist for approximately a week.
- Sometimes ulcers develop in the cornea leading to blindness in most severe cases.

- Pneumonia can also occur which is caused by the virus or secondary bacterial infections. Mastitis can also be observed with a sharp decrease in the milk yield of animal.
- Postmortem examination can reveal the presence of pox lesions throughout the entire digestive and respiratory tracts.

Prevention

Measures at an affected farm holding should include:

- Separate the suspected cases from the rest of the herd which is healthy.
- Collect samples of animals showing clinical signs of the disease and send it to laboratory for diagnosis. The sample for diagnosis could be a blood sample, nasal secretion or scab scraping from the nodular lesions on the skin or mucous membrane of the animal.
- As lumpy skin disease is a reportable disease, therefore if we encounter any case in the farm premises we should immediately isolate the affected animals and report the upper concerned authorities.
- We should completely separate healthy animals from the infected or separated animals even during grazing [4].
- Neighboring farmers and those who have bought or sold animals from/to the affected farm recently should be checked for LSDV. Sampling of the animals should also be done.
- The farm where a case has been reported should be exempted from any sort of animal or human visits until necessary.
- Disinfection is must and should be adopted by all the farms having or suspecting LSD outbreak.

Treatment and control

Following control measures as well as treatment should be followed to control LSD incidences

- Animal movement restrain - In order to lessen the impact of the outbreak and to control LSD, the movement of animals to and from the infected area should be completely exempted. This will check the transmission or spread of LSD.
- Restriction of affected animals and persons dealing with such animals - Movement of people to and from the affected area should be restricted. The animal handlers and those attending the affected animals should be told to maintain distance from the animals.
- Vaccination: The infected villages should be identified so that precautionary plans are carried out in those specific areas and ring vaccination carried out in and around the villages. Animals should be vaccinated with available Goat pox vaccine or with GTPV vaccine as per the guidelines. However, vaccination should not be done in affected animals. Vaccination of healthy cattle should be completed at the earliest with proper documentation in the high risk areas like borders of affected districts.

- Biosecurity measures: Immediate isolation of sick animal from the healthy animals should be done.
 - Symptomatic treatment of affected animals may be carried out with all precautions. Soft feed and fodder should be provided to sick animals.
 - Clinical surveillance against LSD should be intensified.
 - Disinfection of premises should be done at regular intervals.
 - Hygiene practices should be followed at the animal farm.
 - Farms with sick animals should be visited regularly by the field veterinarians until all the cases are demolished. The veterinary staff should take all precautionary, hygienic measures to prevent further spread of disease.
 - Carcass should be disposed of by deep burial method observing all hygienic measures.
- Vector control: Vector population (ticks, flies, mosquitoes, fleas) in farm premises and animal body should be checked using the insecticide. Repellents and other chemical disinfection and cleaning measures should be adopted.
- Disinfection and cleaning measures: Affected Premises, vehicles going through the affected animal holdings should be carried out with appropriate chemicals / disinfectants.
- Awareness programme: Campaign should be taken up to make the public aware of the disease and development of SOPs and training material in local language as per guidelines for effective awareness to all stake holders and VOs and to conduct regular trainings for all state holders.

Conclusion

There are a lot of diseases like lumpy skin disease where a lot of research has not been done due to its less prevalence. But now as the disease is progressing to spread and causing huge economic losses to the farmers, research for the production of vaccine and proper treatment of the disease is going on. The time upto which proper treatment of the disease is not found it will re-emerge and affect animals. Therefore only the preventive measures can be undertaken to control the loss it can cause to the animal owners or farmers.

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