

Lumpy skin disease (knopvelsiekte)

Etiology

Lumpy skin disease (LSD) is a severe systemic disease of cattle associated with the Neethling poxvirus, a Capripoxvirus.

It has close antigenic relationship to sheeppox and goatpox viruses, which are in the same genus.

Epidemiology

- Morbidity rates can reach 80% during epizootics, but typically range from 10% - 30% in enzootic areas.
- **The virus is present in the nasal and lacrimal secretions, semen, and milk of infected animals.**
- **transmission, by an arthropod vector. LSD virus has been isolated from *S. calcitrans*.**
- **Transmission via infected semen used in artificial breeding.**
- **All ages and types of cattle are susceptible, although very young calves and lactating and malnourished cattle develop more severe clinical disease.**
- **peaks in the late summer and early autumn.**

pathogenesis

- Subcutaneous or intradermal inoculation of cattle with LSDV results in the development of a localized swelling at the site of inoculation after 4-7 days and enlargement of the regional lymph nodes while generalized eruption of skin nodules usually occurs 7-19 days after inoculation.
- -. Viraemia occurred after the initial febrile reaction and persisted for two weeks.
- Viral replication in pericytes, endothelial cells and probably other cells in blood vessel and lymph vessel walls causes vasculitis and lymphagitis in some vessels in affected areas. In severe cases infarction may result.

Clinical Findings

- The incubation period is 4–14 days.

- A subcutaneous injection of infected material produces a painful swelling and then fever, lacrimation,
- nasal discharge, and hypersalivation, lameness.
- Multiple intradermal nodules appear suddenly about a week later, often initially on the perineum.
- They are round and firm, 1 to 4 cm in diameter, and flattened, They vary from a few to hundreds and, in most cases, are confined to the skin.
- The nodules are well circumscribed, round, slightly raised, firm, and painful and involve the entire cutis and the mucosa of the GI, respiratory, and genital tracts.
- in the mouth, as plaques and then ulcers, causing salivation;
- on the conjunctiva, causing severe lacrimation; and on the prepuce or vulva, spreading to mucosal surfaces.
- In most cases the nodules disappear rapidly, but they may persist as hard lumps or become moist and necrotic, then slough.
- Lymph nodes draining the affected area become enlarged, and local edema can occur, particularly of the limbs.
- Pregnant cows may abort.
- Nodules may develop on the muzzle and within the nasal and buccal mucous membranes.
- The skin nodules contain a firm, creamy-gray or yellow mass of tissue.
- Regional lymph nodes are swollen, and edema develops in the udder, brisket, and legs

Differential Diagnosis

- The disease may be confused with
 - 1-pseudo-lumpy skin disease, which is caused by (bovine herpesvirus 2).
 - 2--Dermatophilus congolensis (streptothricosis)
 - {Dermatophilosis, also called Streptothricosis
 - 3-delayed hypersensitivity reactions following **foot-and-mouth disease vaccinations;**
 - 4- insect bites;
 - 5- globidiosis,

6-demodicosis.(Laboratory confirmation is desirable)

7-Onchocerciasis.

(Onchocerciasis is a parasitic disease caused by the filarial worm *Onchocerca volvulus* transmitted by repeated bites of infected blackflies.

Treatment

Rx

- Administration of antibiotics to control secondary infection and
- good nursing care are recommended.

Control

- Quarantine restrictions are of limited use.
- Vaccination with attenuated virus offers the most promising method of control.
- The viruses of goatpox and sheeppox passed in tissue culture also have been used.
- Slaughter of affected and in-contact animals, destruction of contaminated hides, and vaccination of at-risk animals is a common approach when the disease is introduced to a previously free country