

Lumpy Skin Disease.....LSD....(Neethling)..

(pseudourticaria)(exanthema nodularis bovis)

Lumpy skin disease is a an infectious eruptive انفجاري disease of cattle caused by a virus belong to poxviridae family .The disease characterized by nodules present on the skin and mucous membranes of respiratory and reproductive organs with enlargement of superficial L.N. and occasionally death .

Etiology....

The disease is caused by a virus in the genus *Capripoxvirus* and Neethling poxvirus of the family Poxviridae

Epidemiology...

- 1- The disease is primarily a disease of cattle. buffaloes can also affected
- 2-Its highly distributed disease with high morbidity and low mortality rate
- 3-Most cases are believed to result from transmission by an arthropod vector such as *Stomoxys* Flies.However mosquitoes such as *Aedes* and *Culex* play a good role in transmission too
- 4- All ages and types of cattle are susceptible to the causative virus and its more common at summer and outman
- 5-The disease can also be transmitted through ingestion of contaminated food and water with infected saliva but Direct contact could be a minor source of infection .
- 6-The disease cause economical losses through
 - a-Decrease animals production
 - b-Secondary mastitis
 - c-Damaged to hides which affected leather industries .
 - d-Loss of body condition
 - e-Abortion during febrile stages
 - f- loss of fertility in affected cows and bulls

Pathogenesis....

In general there is viremia accompanied by a febrile reaction, and localization in the skin occurs with development of inflammatory nodules.

Clinical findings....

- 1-The incubation period in the field is thought to be 2-5 weeks,less or more some times depending on the virulence of the virus and the animal condition .
- 2- Fever (40-41 c) is the initial sign which may last for over a week

3-Fever are accompanied by in appetite, lacrimation, salivation nasal discharge, enlargement of superficial L.N and lameness.

4-Following the fever multiple nodules were developed on skin .

- Nodules are round ,firm , flattened easily palpated 1-7 cm in diameter or more ,They vary in number from a few to hundreds
- These nodules are penetrate the full thickness of the skin(dermis and, epidermis, subcutaneous tissue, and sometimes the underlying muscle).
- They are particularly common on the head, neck, udder, genitalia, perineum and legs and some time on udder and teats and may lead to mastitis . Although the nodules may exudates serum initially, but they might develop a characteristic inverted conical zone of necrosis later .

5-In sever cases Nodules may also developed in the nostrils, turbinates, trachea and lungs causing mucopurulent nasal discharge, sever inflammation, ulcerations ,respiratory obstruction ,stenosis, snoring and pneumonia

Lesions on conjunctivae may results in sever lacrimation Rhinitis, conjunctivitis and keratitis ,

In rare cases lesions may developed in gastro intestinal tract .

6-Enlargment and edematous of superficial lymph nodes

7-Inflammation and necrosis of the tendons, or severe edema and swelling of the brisket and legs, can result in lameness.

8-Feed intake decreases in affected cattle, milk yield can drop markedly, and animals may become emaciated

9-Abortion will occur in pregnant animals which will have prolonged anestrus period with temporary or permanent sterility in both cows and bulls

10-Few animals may die, but the majority slowly recover. Recovery can take several months, and some skin lesions may take a year or two to resolve. Deep holes or scars are often left in the skin

Clinical pathology...

1-Isolation of the causative virus and identification with electron microscope

2- Biopsy from skin nodules or lymph nodes can be used for PCR

3- In direct immuno-fluorescence test and ELISA

Differential diagnosis

1-Bovine herpes mammillitis

2-Urticaria

3- *Hypoderma bovis* infestation

4- Cutaneous tuberculosis

5-skin form Theileriosis

Treatment ...

No specific treatment ,but we can use

1-Flunixin as anti inflammatory and anti pyretic

2-Broad spectrum antibiotic such as oxytetracycline or chloramphenicol

Control...

1-limitation of transmission of the diseases & control of insects

2-Vaccination ..

a-lamb kidney culture vaccine

b- Capri pox vaccine give good immunity

c-A freeze-dried, living attenuated virus vaccine