FRIEDRICH-LOEFFLER-INSTITUT
FLI
Bundesforschungsinstitut für Tiergesundheit
Federal Research Institute for Animal Health

Lumpy Skin Disease
(Dermatitis nodularis)

Susceptible Species

The disease affects cattle holdings; water buffaloes may also become infected.

Distribution Area

Lumpy Skin Disease (LSD) occurs in most African countries and has been present in Turkey for the last few years. In August 2015, the virus was diagnosed in herds in Greece. In spring 2016, Bulgaria and Macedonia reported first outbreaks and in the course of 2016 the animal disease was detected in other Balkan states. A further spread, also northwards, must be expected. This means that with LSD a disease which so far has not been endemic in the EU might establish and also represent a threat for German cattle herds.

Causative Agent

The clinical picture of LSD, also called *Dermatitis nodularis*, is caused by the Lumpy Skin Disease Virus (LSDV) which belongs to the genus *Capripox* within the *Poxviridae* family.

Transmission

Transmission of the virus, most likely strictly mechanical, mainly occurs by blood-sucking insects. Indirect transmission by food or water contaminated with saliva of infected animals, contaminated tools or persons (also iatrogenic transmission) is also possible. Trade with animals from affected areas may lead to introduction of LSD into so far non-affected regions. Although as a rule morbidity (5-45 %) and mortality (1-5 %) are moderate, the economic damage caused by production losses of milk and hides as well as decreased weight gain in infected cattle may be considerable. In addition, strict restriction measures are imposed if an outbreak occurs in a previously disease-free area. LSD is notifiable in Germany and belongs to the OIE-listed animal diseases.

Clinical Picture

Clinically diseased animals show fever and later on typical skin lesions, in particular of the perineum and scrotum. These nodular lesions may also be generalized, often in combination with lesions of mucous membranes. Usually, the lymph nodes in the

affected areas are swollen; in pregnant animals abortions may occur. It is important that subclinical and asymptomatic courses of disease also may occur in viraemic animals. After experimental infection clinical symptoms are seen in only 50 % of inoculated animals. Clinically inapparent animals make early detection of the disease difficult and may promote unnoticed spread and transmission of the pathogen.

Diagnostics

Suitable diagnostic material are skin punch biopsies of skin lesions, EDTA blood, nasal and salivary swabs. Detection of viral DNA by probe-based real-time PCR is very reliable. At the National Reference Laboratory for LSD several published PCR methods are available for safe laboratory diagnostic confirmation of suspect cases.

Similar Clinical Pictures

As differential diagnoses the following pictures of disease with similar clinical symptoms are relevant: Allergies, Besnoitiosis, dermal form of Enzootic Bovine Leukosis, Bovine Herpes Mammilitis (Bovine Herpesvirus 2), *Stomatitis papulosa* (Parapoxvirus bovis 1)

Control

So far, culling of affected herds, implementation of protection and surveillance zones as well as ring vaccinations have not yet led to the eradication of the disease in Greece and other Balkan states. Live vaccines are not licensed in the EU yet, but may be used in the frame of emergency vaccination programs based on an EU Commission Implementing Decision.

In suspect cases suitable samples must be sent without delay to the National Reference Laboratory (Dr. Bernd Hoffmann, Tel. 038351-71201 or 71506; eMail: bernd.hoffmann@fli.de).

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