

First clinical identification of pseudo-lumpy skin disease in France

Première identification clinique d'une pseudo-dermatose nodulaire contagieuse en France

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Abstract

Since the first cases of lumpy skin disease (LSD) were observed in France on 29 June 2025, the measures implemented to limit the spread of this disease have proven effective in the two departments of Savoie in the French Alps. However, subsequent outbreaks in other close (Ain, Rhône, Jura) or remote departments (Pyrénées Orientales), as well as in Catalonia (Spain), show that we were not immune to the illegal movement of infected animals, transported to disease-free areas. The increase in suspected cases of LSD that tested negative, even in disease free geographical areas far from confirmed outbreaks, led to the first observation in France of pseudo-lumpy skin disease, which is caused by a herpesvirus and has a benign course that would not have alerted farmers outside the context of LSD.

Keywords: lumpy skin disease, pseudo-lumpy skin disease, alphaherpesvirus, BoHV-2

Résumé

Depuis les premiers cas de dermatose nodulaire contagieuse (DNC) observés en France le 29 juin 2025, les mesures mises en œuvre pour limiter la propagation de cette maladie se sont avérées efficaces dans les deux départements de Savoie, dans les Alpes françaises. Cependant, des foyers épidémiques ultérieurs dans d'autres départements, proches (Ain, Rhône, Jura) ou éloignés (Pyrénées-Orientales), ainsi qu'en Catalogne (Espagne), montrent que nous n'étions pas à l'abri des mouvements illégaux d'animaux infectés, transportés vers des zones indemnes. L'augmentation des cas suspects de DNC dont les tests se sont révélés négatifs, même dans des zones géographiques indemnes et éloignées des foyers confirmés, a conduit à la première observation en France d'un cas de pseudo-dermatose nodulaire contagieuse, infection herpétique à évolution bénigne qui n'aurait pas alerté les éleveurs en dehors du contexte de la DNC.

Mots-clés : dermatose nodulaire contagieuse, pseudo-dermatose nodulaire contagieuse, alphaherpèsvirus, BoHV-2

Citation

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Introduction

Since lumpy skin disease (LSD) was first observed in France on 29 June 2025, the measures implemented to limit the spread of this disease have proven effective. No further cases were reported after 21 August 2025 in Savoie and Haute-Savoie (8th week), the only departments affected at the time. However, subsequent outbreaks in other close (Ain, Rhône, Jura) or remote departments (Pyrénées-Orientales), as well as in Catalonia (Spain), show that we were not immune to the illegal movement of infected animals. These new cases outside Savoie may explain the fear of farmers when skin lesions of uncertain etiology appear in their herds, even in disease-free geographical areas far from confirmed outbreaks or in the absence of any other symptoms that would justify calling for a veterinary diagnosis.

Increase in negative suspected cases of LSD

The increase in suspected cases of LSD that tested negative during the 5th, 6th, and 13th weeks of the French LSD epizootic reflects farmers' concerns about this new disease. Similarly, the large number of suspected cases in the 13th week, following the declaration of the first and only outbreak in Lyon during the 12th week, was observed 100 km from Savoie (Figure 1).

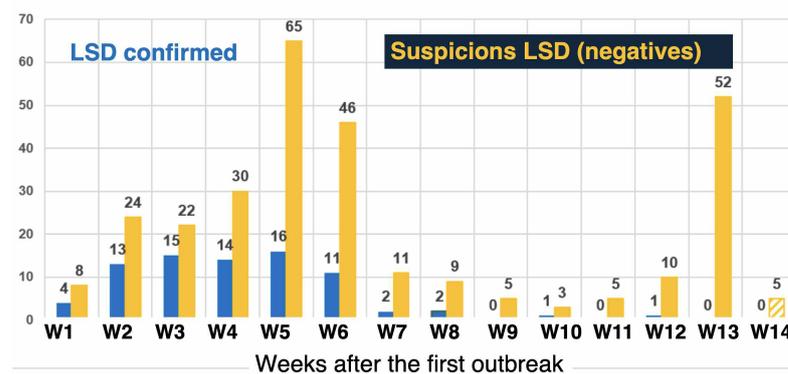


Figure 1. Lumpy skin disease (LSD): weekly updates on suspected LSD cases and confirmed outbreaks in France since June 29, 2025. Health situation as of October 1, 2025 (<https://agriculture.gouv.fr/dermatose-nodulaire-contagieuse-des-bovins-dnc-point-de-situation>).

Clinical identification of a case of pseudo-lumpy skin disease

It was at that time, in early September, that a suspected case of LSD was reported on a farm with 700 dairy cows more than 450 km from the Lyon outbreak, in the Verdun region (Meuse), with the following symptoms: transient hyperthermia (39 to 40 °C) followed by the appearance of several skin nodules. However, the progression did not seem alarming, as the cows retained their appetite, and there was no mortality or decrease in milk production.

Some of the skin lesions had an intact central area surrounded by a circular ring, giving them a punched out appearance and forming a raised, almost flat surface. When the affected skin areas were grasped, a slight thickening could be felt, without any nodules being noticeable. These lesions could vary: skin edema resembling papules, sometimes significant due to their coalescence, forming irregular lesions (Figure 2), small, very visible, dark colored rounded areas (Figure 3). At the end of their evolution, they are easy to remove, leaving a hairless scarred area of skin indicating the absence of an ulcerative lesion (Figure 4). Lymph node hypertrophy was observed at the end of the evolution (Figure 5). These lesions heal without treatment within 3 to 4 weeks (Figure 6) (Watanabe *et al.* 2017).



Figure 2. Pseudo-lumpy skin disease lesions with skin edema resembling papules, sometimes coalescent (2a).

Sometimes, these are very distinct, rounded areas that may resemble ringworm (2b) (photos by Matthieu Henry).





Figure 3. Various pseudo-lumpy skin disease lesions. Some detach, leaving dark, hairless, rounded areas on the animal's skin (photo by Matthieu Henry).



Figure 4. At the end of the disease progression, the removal of the lesion (4a) causes no pain to the animal, leaving a hairless scarred area of skin measuring 1.25 to 2.5 cm in diameter (4b) (photos by Matthieu Henry).



Figure 5. In this cow, hypertrophy of the lymph nodes along the neck can be observed (photo by Matthieu Henry).



Figure 6. In this cow (6a and 6b), the favorable progression of the skin condition can be observed over a period of 3 weeks (photos by Matthieu Henry).



Although the nodules were not as large and rounded with a distinct lump as those reported in LSD, without papulo-vesiculo-pustules with a crust specific to poxviruses, and despite the benign appearance of this infection, it was justified to rule out any suspicion of LSD, as there are attenuated forms of LSD. As the PCR test for LSD proved negative, as did the test for ringworm, where the lesions are sometimes similar, the clinical suspicion of pseudo-lumpy skin disease (PLSD) seemed the most likely hypothesis. PLSD is a herpesvirus infection caused by BoHV-2. It is characterized by lesions that primarily affect the superficial layers of the skin. In contrast, LSD involves lesions that are often deep enough to expose underlying tissue. Additionally, LSD typically presents with milder symptoms and a shorter recovery time compared to PLSD. This hypothesis was confirmed by a histological examination of skin samples sent to the National Veterinary School of Toulouse; analyses are ongoing to identify the viral strain.

Other less similar skin conditions could also be considered in this differential diagnosis, including dermatophilosis, cutaneous leucosis, bovine papular stomatitis and pseudo-cowpox (both caused by parapoxviruses), cowpox, ehrlichiosis, demodicosis, besnoitiosis, hypodermosis, photosensitization, urticaria, cutaneous tuberculosis, and onchocerciasis. It should be noted that only the current context of LSD, a new and highly contagious exotic disease in France, could justify resorting to laboratory testing to confirm a case of PLSD observed in the field, the benign nature of which does not necessarily prompt the farmer to call for help.

BoHV-2 alphaherpesvirus infection in cattle

BoHV-2 infection is associated with two distinct clinical syndromes in cattle: a mammary form associated with localized and painful ulcers on the teats of dairy cows, hence the name ulcerative mammillitis (Bovine herpes mammillitis), or a generalized form (PLSD), characterized by a variable number of circumscribed superficial skin lesions scattered throughout the body comparable to LSD but with a benign course. The most common manifestation of BoHV-2 infection is the localized ulcerative disease of the teats and udder of dairy cows or the muzzle of suckling calves (Kemp *et al.* 2008).

The herpetic origin of ulcerative teat ulcers was demonstrated in England in 1963 (Martin *et al.* 1966). Herpes mammillitis is known in many countries worldwide. It was only later that intravenous inoculation of this herpesvirus was shown to cause a generalized infection similar to a disease first described in South Africa as pseudo-lumpy skin disease (PLSD). PLSD was then linked to a virus called Allerton, whose cytopathogenic effect is accompanied by a benign progression compared to LSD (Castrucci *et al.* 1978). PLSD, considered rare, was likely underestimated due to its benign progression.

BoHV-2 is found worldwide and is believed to be transmitted by biting insects (stable flies [*Stomoxys calcitrans*] and Tabanidae). Present in a latent state in animals, this virus can be reactivated during times of stress, such as two weeks after calving, when lactation begins, etc. (Martin & Scott 1979). In its generalized form, the course is benign and resembles ringworm, but with raised lesions measuring 1 to 2 mm and circular swellings (0.5 to 2 cm in diameter). These lesions form a kind of scab that is very easy to remove, even by rubbing. Healing is spontaneous without scarring, and it does not require treatment in the absence of a secondary skin infection.

Laboratory diagnosis

Detection of the BoHV-2 virus or its DNA

To isolate the virus, the skin sample must be taken early, within the first week of PLSD onset (before the appearance of neutralizing antibodies) (Woods *et al.* 1996), but viral DNA can be detected by PCR (d'Offay *et al.* 2003). However, it should be noted that surveillance of LSD in Italy has revealed cases of viral co-infections by epitheliotropic viruses (zoonotic parapoxvirus, bovine papillomavirus, and BoHV-2) in skin lesions in cattle (Gallina *et al.* 2020).

Serological tests

Serological surveys have shown that 10–30% of cattle in herds with a history of skin disease may be seropositive, but an equal percentage of cattle in herds with no history of skin disease may also be seropositive for BoHV-2 (Castrucci *et al.* 1978).

Histopathology examination

Histological examination reveals intranuclear inclusion bodies, characteristic of herpesvirus infection. In contrast, the capripoxvirus associated with LSD features intracytoplasmic inclusions (Figure 7).



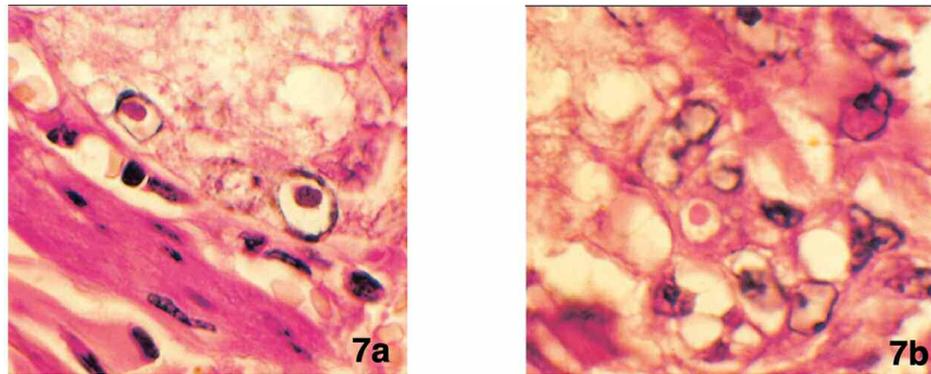


Figure 7. Histological examination of skin lesions can distinguish between BoHV-2 infection, characterized by intranuclear inclusion bodies (7a), and the intracytoplasmic inclusions typically observed in LSD, caused by a capripoxvirus (7b) (Coetzer & Tuppurainen 2004).

Conclusion

To our knowledge, this is the first published report of clinical diagnosis of PLSD in France. This infection is a benign disease that can go unnoticed and that resolves without sequelae. It appears to be rare, but it may be underestimated due to the absence of symptoms that would cause concern to the farmer. Certainly, the current context of the potential risk of LSD when skin lesions appear in a cattle herd will justify the farmer calling for a reassuring differential diagnosis. Finally, unlike LSD, this herpesvirus can reappear in the herd due to the presence of latent carriers.

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Conflicts of interest

The authors declare that they have no conflict of interest.

References

- Castrucci, G., Frigeri, F., Cilli, V., Rampichini, L., Ranucci, S., & Poli, G. (1978). Distribution of Bovid herpesvirus 2 in calves inoculated intravenously. *American Journal of Veterinary Research*, 39(6), 943–947.
- Coetzer, J. A. W., & Tuppurainen, E. Lumpy skin disease. Adapted from Coetzer, J. A. W. (2004). Lumpy skin disease. In J. A. W. Coetzer & R. C. Tustin (Eds.), *Infectious diseases of livestock* (Vol. 2, pp. 1268–1276). Oxford University Press Southern Africa. Available at <https://pdfs.semanticscholar.org/5209/23c36b3e10225ac508c6e1fcb838a1d3f34.pdf>
- Gallina, L., Savini, F., Canziani, S., Frasnelli, M., Lavazza, A., Scagliarini, A., & Lelli, D. (2020). Bovine Papillomatosis Hiding a Zoonotic Infection: Epitheliotropic Viruses in Bovine Skin Lesions. *Pathogens (Basel, Switzerland)*, 9(7), 583. <https://doi.org/10.3390/pathogens9070583>
- Kemp, R., Holliman, A., & Nettleton, P. F. (2008). Atypical bovine herpes mammillitis affecting cows and calves. *The Veterinary Record*, 163(4), 119–121. <https://doi.org/10.1136/vr.163.4.119>
- Martin, W. B., Martin, B., Hay, D., & Lauder, I. M. (1966). Bovine ulcerative mammillitis caused by a herpesvirus. *The Veterinary Record*, 78(14), 494–497. <https://doi.org/10.1136/vr.78.14.494>
- Martin, W. B., & Scott, F. M. (1979). Latent infection of cattle with bovid herpesvirus 2. *Archives of Virology*, 60(1), 51–58. <https://doi.org/10.1007/BF01318097>
- d'Offay, J. M., Floyd, J. G., Jr, Eberle, R., Saliki, J. T., Brock, K. V., D'Andrea, G. H., & McMillan, K. L. (2003). Use of a polymerase chain reaction assay to detect bovine herpesvirus type 2 DNA in skin lesions from cattle suspected to have pseudo-lumpy skin disease. *Journal of the American Veterinary Medical Association*, 222(10), 1404–1407. <https://doi.org/10.2460/javma.2003.222.1404>
- Watanabe, T. T. N., Moeller, R. B., Jr, Crossley, B. M., & Blanchard, P. C. (2017). Outbreaks of bovine herpesvirus 2 infections in calves causing ear and facial skin lesions. *Journal of Veterinary Diagnostic Investigation*, 29(5), 686–690. <https://doi.org/10.1177/1040638717704480>
- Woods, J. A., Herring, J. A., Nettleton, P. F., Kreuger, N., Scott, F. M., & Reid, H. W. (1996). Isolation of bovine herpesvirus-2 (BHV-2) from a case of pseudo-lumpy skin disease in the United Kingdom. *The Veterinary Record*, 138(5), 113–114. <https://doi.org/10.1136/vr.138.5.113>

