

**First report of digestive form of contagious ecthyma in yeanning: A case report**

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**Abstract:** Contagious ecthyma is an infectious dermatitis of sheep and goats that affects primarily the lips of young animals. The disease is usually more severe in goats than in sheep. Humans are occasionally affected, and the disease has been reported in dogs that have eaten infected carcasses. A yeanning referred with high fever (42C), anorexia, depression, mucopurulent discharge from nasal cavity, conjunctivitis and abnormal respiratory sounds (wheeze) with proliferative lesions on gum and obvious lesions on tongue. Histological samples were obtained from gingival and lingual mucosa and sent for pathology laboratory and finally diagnosis approaches to ORF.

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**Keywords:** contagious ecthyma, digestive form, yeanning.

**Introduction:**

Contagious ecthyma, also known as orf or sore mouth, is a *zoonotic* disease, which means that it is easily transmitted from animals to humans. It induces acute pustular lesions in the skin of goats, sheep, and wild ruminants worldwide. Young animals are the most susceptible to contracting the disease. Kids and lambs can contract sore mouth after a few weeks of birth. However, sore mouth outbreaks in young animals are most frequent during postweaning (De la Concha-Bermejillo et al., 1999 and 2003). Sore mouth is caused by a poxvirus related to the pseudocowpox and bovine papular stomatitis virus family. The virus is epitheliotropic, which means that it has an affinity for the skin; infection occurs by direct contact. The period of incubation is relatively short. Susceptible animals usually develop the first signs of the disease 4 to 7 days after exposure that persists for 1 to 2 weeks or for longer periods. The disease affects sheep and goats; it is marked by an increase in incidence and severity if not controlled among small ruminant herds. Sore mouth outbreaks occur more frequently during periods of extreme temperatures such as late summer and winter (Fenner et al., 1987). The disease initially presents itself as papules (elevation of the skin) that progresses to blisters (fluid-filled pouches) or pustules before encrusting. These lesions are found in the skin of the lips. They can spread around the outside and inside of the mouth, face, lips, ears, vulva, testis, scrotum, teats, and feet, usually in the interdigital region. Extensive lesions on the feet can lead to lameness in adults and young animals. The infection is spread by direct and

indirect contact from infected animals or by contact with infected tissue or saliva containing the virus (Hawayek and Rubeiz, 2007).

During the course of the disease, blisters eventually break down to release more of the virus and later develop into wet pus-like (suppurative) scabs. These lesions can persist for 3 weeks and can become a site for the development of secondary bacterial infections. Scab tissues are extremely painful, to the point of preventing sick animals from eating. Because infected kids present lesions on their gums and lips, does and ewes can acquire lesions on their udder. The lesions on the udder are due to direct contamination during nursing that causes mastitis (inflammation of the mammary gland) in does and ewes. Severe to moderate enlargement of the lymph nodes, arthritis, and pneumonia resulting from sore mouth has been reported (ICTV, 2006).

Most animals acquire immunity after contracting the disease; however, subsequent outbreaks in herds are common with a less severe form of the disease.

**Case description:**

Diagnosis is based on the characteristics and location of the lesions, as well as a herd history of previous outbreaks. A definitive diagnosis is based on viral isolation and an immunologic test. However, we received a 3-weeks old male yeanning with high fever (42C), anorexia, depression, mucopurulent discharge from nasal cavity, conjunctivitis and abnormal respiratory sounds (wheeze) with proliferative lesions on gum and obvious lesions on tongue (figures 1-3).

These signs were appeared of 4 days ago. For final step of diagnosis, histological samples were obtained from gingival and lingual mucosa and sent for pathology laboratory (figs 1-2).

Diagnosis approaches to ORF. After diagnosis, we aimed to treatment with enrofloxacin and flunixin meglumine and fluid therapy but, animal did not alive because of disease severity. After that, the outbreak has been occurred in the herd.



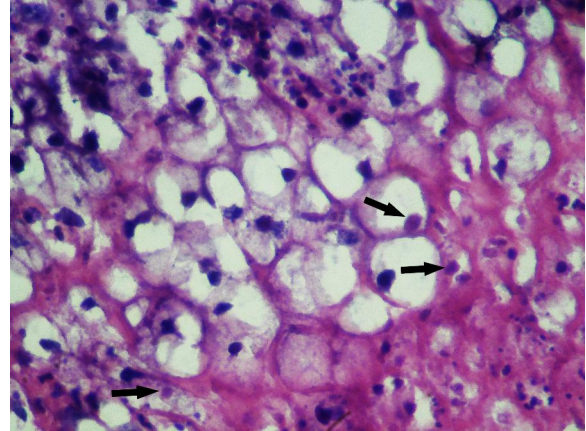
**Fig 1:** lesions on lower lip.



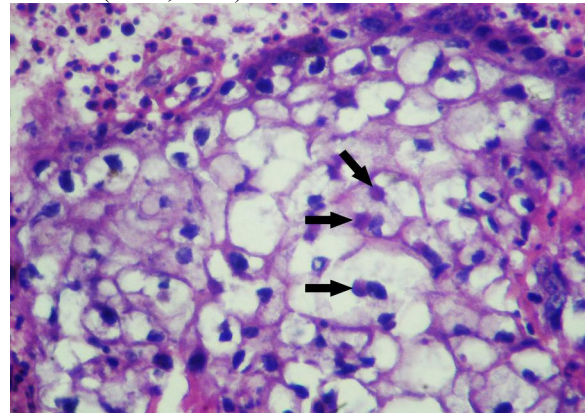
**Fig 2:** a 3-weeks old yeanling with depression and weight losses.



**Fig 3:** lesions on tongue.



**Fig 1:** Photomicrograph from the popular lesions of nasal cavity. Proliferation of epithelial cells and hydropic degeneration of these cells which have inclusion bodies in theirselves cytoplasm (arrows) are obvious (H&E; 250x).



**Fig 2:** Photomicrograph from the popular lesions of nasal cavity. Notice to the cloudy swelling and existence of basophilic intracytoplasmic inclusion bodies (arrows). The presences of degenerative neutrophils in this area show necrotic changes in the epithelia cells (H&E; 250x).

**Discussion and Conclusion:**

The primary lesion develops on the skin of the lips and frequently extends to the mucosa of the mouth. Occasionally lesions are found on the feet, usually in the interdigital region and around the coronet. Ewes nursing infected lambs may develop lesions on the udder. In young lambs, the initial lesion may develop on the gum below the incisor teeth (ISU, 2000). The lesions develop as papules and progress through vesicular and pustular stages before encrusting. Coalescence of numerous discrete lesions often leads to the formation of large scabs, and the proliferation of dermal tissue produces a verrucose mass under them. When the lesion extends to the oral mucosa, secondary necrobacillosis (Necrobacillosis:

Introduction) frequently develops (Kahn and Line, 2003).

During the course of the disease (1-4 wk), the scabs drop off and the tissues heal without scarring. During active stages of infection, more severely affected lambs fail to eat normally and lose condition. Extensive lesions on the feet lead to lameness. Mastitis may occur in ewes with lesions on the udder.

The lesion is characteristic. The disease must be differentiated from ulcerative dermatosis (Ulcerative Dermatitis of Sheep: Introduction), which produces tissue destruction and crateriform ulcers. Ecthyma usually affects younger animals than does ulcerative dermatosis, although this criterion can only be used presumptively. A positive differentiation may be obtained by inoculating susceptible and ecthyma-immunized sheep (Klein and Tryland, 2005).

In term of treatment and control, antibacterials may help combat secondary infection. In endemic areas, appropriate repellents and larvicides should be applied to the lesions. The virus is transmissible to humans, and the lesions, usually confined to the hands and face, are more proliferative and occasionally very distressing. Veterinarians and sheep handlers should exercise reasonable protective precautions. Diagnosis in humans is established by transmitting the virus to sheep; a complement-fixation test may be of value (Kuhl et al., 2003).

Sheep that have recovered from natural infection are highly resistant to reinfection. Despite a multiplicity of immunogenic virus strains, the presently used commercial single-strain vaccines have produced fair immunity in all parts of the USA (with an occasional exception). Vaccine breaks appear to be due to the virulence of the infecting strain rather than to differences in antigenicity of the vaccine. Sheep immunized against contagious ecthyma remain susceptible to ulcerative dermatosis (CDC, 2006; Acha and Szyfres, 2003).

Vaccines should be used cautiously to avoid contaminating uninfected premises, and vaccinated animals should be segregated from unprotected stock until the scabs have fallen off. A small amount of the vaccine is brushed over light scarifications of the skin, usually on the inside of the thigh. Lambs should be vaccinated when ~1 mo old. For best results, a second vaccination ~2-3 mo later is suggested. Nonimmunized lambs should be vaccinated before entering infected feedlots. Experimental work suggests that parenteral administration of virulent vaccine induces better immunity than does the current procedure (CDC, 2006).

2/24/2013

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