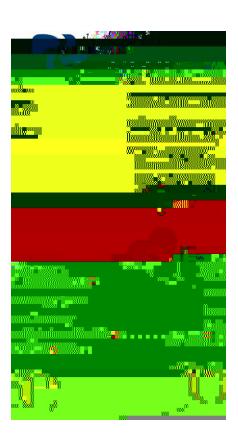
Orf, Ecthyma Contagiosum, Contagious Pustular Dermatitis, Contagious Pustular Stomatitis, Infectious Labial Dermatitis, Soremouth, Scabby Mouth

Content Update: April 14, 2007

Last Reviewed: June 1, 2007



#### **Importance**

Contagious ecthyma is a highly contagious, zoonotic, viral skin disease that affects sheep, goats and some other domesticated and wild ruminants. The skin lesions are painful and often occur on the mouth and muzzle, where they can cause anorexia or starvation. Lesions on the udder may result in the abandonment of offspring, and foot lesions can cause transient lameness. Secondary bacterial infections can occur and, in rare cases, the lesions may extend into the internal organs. Severe generalized infections have been described in Boer and Boer cross goats. Although contagious ecthyma usually resolves spontaneously and the mortality rate is generally low, fatality rates up to 10% have been reported.

Most infections in humans are localized and heal spontaneously; however, large, poorly healing lesions can occur in people who are immunosuppressed.

#### **Etiology**

Contagious ecthyma results from infection by the orf virus, a member of the genus *Parapoxvirus* in the family Poxviridae.

#### **Geographic Distribution**

Contagious ecthyma has been found worldwide in all countries that raise sheep. In the U.S., this disease is seen most often in the Western states.

#### **Transmission**

The orf virus, which is found in skin lesions and scabs, is thought to enter the skin through cuts and abrasions. This virus can be carried by clinically normal sheep as well as sick animals. It can be transmitted by direct contact or on fomites. The orf virus remains viable on the wool and hides for approximately one month after the lesions have healed. It is very resistant to inactivation in the environment and has been recovered from dried crusts after 12 years.

Contagious ecthyma vaccines contain live virus and can infect humans. Recently vaccinated animals can also transmit infections to humans.

#### **Disinfection**

The best disinfectants for the poxviruses are detergents, hypochlorite, alkalis, Virkon® and glutaraldehyde.

#### Infections in Humans

#### **Incubation Period**

The incubation period in humans is 3 to 7 days.

#### Clinical Signs

In humans, contagious ecthyma usually occurs as a single skin lesion or a few lesions. The initial lesion is a small, firm, red to blue papule at the site of virus penetration, most often a finger, hand or other exposed part of the body. The papule develops

Last Reviewed: June 2007

#### **Diagnostic Tests**

Infections in animals are usually diagnosed symptomatically. The diagnosis can be confirmed by electron microscopy of the scabs, which should be collected from animals in earlier stages of the disease. PCR tests are available from some laboratories.

Uncommonly used tests include virus isolation and serology. Virus isolation can be attempted in a variety of cell cultures or embryonated eggs, but the orf virus grows slowly and cannot always be isolated. Serological tests include serum neutralization, agar gel immunodiffusion (AGID), complement fixation and agglutination. ELISA tests have been developed but are rarely used for diagnosis.

#### **Treatment**

There is no specific treatment for contagious ecthyma. Diathermy and cryosurgery have been used to treat intraoral lesions in lambs but may not be economical. Repellents can be used to keep flies away from the wounds, and antibiotics are given for secondary infections. Supportive care, including tube feeding, may be necessary.

#### **Prevention**

To prevent contagious ecthyma from entering an uninfected herd, new animals should be quarantined; some car-

- De la Concha-Bermejillo A, Ermel RW, Zhang MZ, Guo J. Contagious ecthyma (orf) virulence factors and vaccine failure [online]. In: United States Animal Health Association 1999 Proceedings; 1999; 1999 Oct 7-14; San Diego, CA. Available at: http://www.usaha.org/speeches/speech99/s99conch.html.\* Accessed 28 Sept 2004.
- De la Concha-Bermejillo A, Guo J, Zhang Z, Waldron D. Severe persistent orf in young goats. Vet Diagn Invest. 2003;15:423-431.
- Fenner F, Bachmann PA, Gibbs EPJ, Murphy FA, Studdert MJ, White DO. Veterinary virology. San Diego, CA: Academic Press Inc.; 1987.Orf; p. 397.
- Hawayek LH, Rubeiz N. Orf [online]. eMedicine; 2007 Jan. Available at: http://www.emedicine.com/derm/topic605.htm. Accessed16 Apr 2007.
- International Committee on Taxonomy of Viruses [ICTV]. Universal virus database, version 4. 00.058.1.02.001. Orf virus [online]. ICTV; 2006. Available at: http://www.ncbi.nlm.nih.gov/ICTVdb/ICTVdB. Accessed 16 Apr 2007.
- Iowa State University [ISU], University Extension. Contagious ecthyma. ISU; 2000. Sheep Health Factsheet 1. 1 p. Available at: http://www.extension.iastate.edu/Publications/PM829X1.pdf. Accessed 16 Apr 2007.
- Kahn CM, Line S, editors. The Merck veterinary manual [online]. Whitehouse Station, NJ: Merck and Co; 2003. Contagious ecthyma. Available at: http://www.merckvetmanual.com/mvm/index.jsp?cfile=htm/bc/71000.htm. Accessed 16 Apr 2007.
- Klein J, Tryland M. Characterisation of parapoxviruses isolated from Norwegian semi-domesticated reindeer (Rangifer tarandus tarandus