

SWINE VESICULAR DISEASE

- [Definition](#)
- [Etiology](#)
- [Host Range](#)
- [Geographic Distribution](#)
- [Transmission](#)
- [Incubation Period](#)
- [Clinical Signs](#)
- [Gross Lesions](#)
- [Morbidity and Mortality](#)
- [Diagnosis](#)
- [Differential Diagnosis](#)
- [Treatment](#)
- [Vaccination](#)
- [Control and Eradication](#)
- [Public Health](#)
- [References](#)
- [FAD Table of Contents](#)

Definition [top](#)

Swine vesicular disease (SVD) is an acute, contagious viral disease of swine caused by an enterovirus and characterized by fever and vesicles with subsequent erosions in the mouth and on the snout, feet, and teats.

Etiology [top](#)

Swine vesicular disease virus is in the enterovirus group of picornaviruses and is closely related to the human enterovirus Coxsackie B-5 and unrelated to known porcine enteroviruses. Some researchers believe this is a case where a human pathogen transferred to pigs through the eating of human feces. The virion is a roughly spherical 28 nm single-stranded RNA virus. This pathogen is resistant over a wide pH range (2.5-12), relatively resistant to heat (inactivated at 157° F [69° C]), and persists for a long time (up to 2 years) in salted, dried, and smoked meat products.

Host Range [top](#)

Pigs are the only natural host. Baby mice can be experimentally infected, and

there has been accidental laboratory infection of humans.

Geographic Distribution [top](#)

Swine vesicular disease first occurred in Italy and was subsequently recognized in Hong Kong, England, Scotland, Wales, Japan, Malta, Austria, Belgium, France, the Netherlands, Germany, Poland, Switzerland, Greece, and Spain. Outbreaks in the 1990's were reported in Italy, Spain, and Portugal.

Transmission [top](#)

The disease can be introduced into a herd by feeding garbage containing infected meat scraps, by introducing infected animals, or by contacting infected feces (e.g., an improperly cleaned truck).

Recent outbreaks in Europe appeared after the introduction of animals that had no clinical sign of SVD, which indicates that there is a subclinical form of the disease. After the initial infection, the disease spreads through contact of susceptible pigs with infected pigs and infected feces.

Incubation Period [top](#)

Signs of SVD develop in 2 to 3 days after eating contaminated feed and in 2 to 7 days after contact with infected pigs.

Clinical Signs [top](#)

Clinical signs are very similar to those of foot-and-mouth disease and other vesicular diseases. There is a fever, vesicles in the mouth and on the snout and feet, and lameness, all of which are grossly indistinguishable from FMD. More suggestive of SVD is an unsteady gait, shivering, and chorea — (jerking) — type leg movements due to an encephalitis.

Gross Lesions [top](#)

Vesicles are indistinguishable from those of foot-and-mouth disease, vesicular stomatitis, and vesicular exanthema of swine (Fig.124, 125). See the foot-and-mouth disease chapter.

Morbidity and Mortality [top](#)

Morbidity in SVD is lower, and lesions are less severe, than in foot-and-mouth disease. There is essentially no mortality in SVD.

Diagnosis [top](#)

See chapter on foot-and-mouth disease.

Serology is complicated by cross reactions with other undefined porcine enteroviruses.

Differential Diagnosis [top](#)

Differential diagnosis for SVD should include foot-and-mouth disease, vesicular stomatitis, vesicular exanthema of swine, and chemical and thermal burns.

Vaccination [top](#)

There is no vaccine.

Control and Eradication [top](#)

Prevention measures are similar to those for FMD: control of animals imported from infected areas, and sanitary disposal of garbage from international aircraft and ships

Eradication measures consist of quarantining infected farms and areas, slaughtering and disposing of infected and contact pigs, and cleaning and disinfecting infected premises.

Public Health [top](#)

Human infection has been reported in laboratory personnel working with the virus. Caution should be taken when working with infected material.

GUIDE TO THE LITERATURE [top](#)

1. McKERCHER, P.D., MORGAN, D.O., McVICAR, J.W., and SHUOT, N.J. 1980. Thermal Processing to Inactivate Viruses in Meat Products. In Proc. 85th Ann. Mtg., U.S. Anim. Health Assoc. pp. 320-328.

2. McKERCHER, P.D., and CALLIS, J.J. 1983. Residual Viruses in Fresh and Cured Meat. In Proc. Ann. Mtg. Livestock Conserv. Inst., pp. 143-146.
 3. Mengeling, W.L., Penny, R.H.C., Scholl, E. and Straw, B. 1980. In Diseases of swine, P.D. Leman and R.D. Glock, eds., Ames, IA: Iowa State University Press.
 4. GRAVES, J.H. 1973. Serological relationship of swine vesicular disease virus and coxsackie B5 virus. *Nature (Lond.)*, 245:314-315.
 5. LOXAM, J.G., and HEDGER, R.S. 1983. Swine vesicular disease: clinical signs, diagnosis, epidemiology and control. *Rev. Sci. Tech. Off. Int. Epiz.*, 2(1) :11-24.
 6. SELLERS, R.F., and HERNIMAN, K.A.J. 1974. The airborne excretion by pigs of swine vesicular disease virus. *J. Hyg. (Camb.)*, 72:61-65.
-

C.A. Mebus, USDA, APHIS,VS Retired, Southold, NY
