

## SWINE ERYSIPELAS

Erysipelas is an infectious disease caused by *Erysipelothrix rhusiopathiae* seen mainly in growing pigs and characterized clinically by sudden death, fever, arthritis, and skin lesions. The disease may be acute, subacute, or chronic.

### Etiology

*E rhusiopathiae* is a gram-positive bacillus. It can survive for several months in animal tissue, eg, frozen or chilled meat, cured and smoked ham, and dry blood. It can survive in swine feces for up to 6 months at temperatures below 12 °C.

On farms where the organism is endemic, pigs are exposed naturally to *E rhusiopathiae* when they are young; their maternal antibodies provide a degree of active immunity without visible disease. The organism is excreted by infected pigs in feces and/or oronasal secretions and survives for short periods in most soils. Recovered pigs and those chronically infected may be carriers of the organism, possibly for life. The mode of entry is by ingestion and through skin abrasions. Following ingestion, the organism most likely enters the body via the tonsils or lymphoid tissue of the GI tract.

### Clinical Findings

Pigs with the acute septicemic form may die suddenly without previous signs. This occurs most frequently in finishing pigs (45-90 kg). **Acutely infected pigs** are febrile (40-42°C), walk stiffly on their toes, lie on their sternums separately rather than piling in groups, and are reluctant to move. They may shift weight from foot to foot when standing. Anorexia and thirst are common. Skin discoloration may vary from widespread erythema and purplish discoloration of the ears, snout, and abdomen, to diamond-shaped skin lesions particularly the lateral and dorsal parts. They may disappear or progress to a more chronic type of lesion such as diamond-skin disease. If untreated, necrosis and separation of large areas of skin can occur, but more commonly, the tips of the ears and tail may become necrotic and slough.

**Clinical disease** is usually sporadic, and affects individuals or small groups. Mortality is 0-100%, and death may occur up to 6 days after the first signs of illness. Acutely affected pregnant sows may abort, probably due to the fever, and suckling sows may show agalactia. Untreated pigs may develop the **chronic form**, usually characterized by chronic arthritis, vegetative valvular endocarditis, or both. Chronic arthritis, the most common form of chronic infection, produces mild to severe lameness; the affected joints may be difficult to detect but tend to become hot and painful to touch and visibly enlarged. Mortality in chronic cases is low.

### Diagnosis

Acute erysipelas is difficult to diagnose in individual pigs showing only fever, poor appetite, and listlessness; however, in outbreaks involving several animals, the presence of skin lesions and lameness is likely to be seen in at least some cases and would support a clinical diagnosis. Erysipelas responds extremely well to penicillin—a marked improvement within 24 hours also supports the diagnosis. The typical diamond-shaped skin lesions are diagnostic. Arthritis and endocarditis are difficult to diagnose in live animals because other agents can cause similar syndromes. An ELISA has been developed and is considered reliable for chronic infections on a herd basis.

### Treatment

Penicillin is the drug of choice for the treatment of acutely affected pigs. The drug should be given daily for 2-3 days; alternatively, a long-acting form may be used. Improvement is usually seen in 24 hr. Treatment of chronic infection is usually not cost effective, and such pigs should be culled.

### Prevention

Prevention is best achieved by regular vaccination using killed bacterins which protects growing pigs from acute disease until they reach market age. An oral vaccine of low virulence is also used. Young breeding stock should be vaccinated twice at intervals of 3-5 weeks before entering the herd, and then revaccinated every 6 months or after each litter (sows). Piglets born to vaccinated sows will be protected for 10-12 weeks. Vaccination raises the level of immunity but does not provide complete protection. Good sanitation, efficient disposal of feces, and regular disinfection of pens is also important in the prevention of erysipelas.