Swine Erysipelas
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Introduction

Swine erysipelas is an infectious disease caused by the bacterium *Erysipelothrix rhusiopathiae* seen mainly in growing pigs and characterised clinically by sudden death, fever, skin lesions, and arthritis. The fever can induce abortion in pregnant gilts and sows. While there are twenty-five recognised serovars of *Erysipelothrix* (1-25), the organisms may vary in their ability to cause disease (virulence) both between serovars and within a serovar. Most cases of disease in Australian pigs are associated with serovars 1 and 2.

Up to 90% of pigs may carry the bacterium in their tonsils, but such organisms may not necessarily be virulent strains or serovars. Certain serovars that are considered to contain only non-pathogenic strains are now classified as *Erysipelothrix tonsillarum*.

Disease due to *E. rhusiopathiae* is uncommon in pigs under 8 weeks of age because of maternal antibody protection provided by the sow via colostrum. *E. rhusiopathiae* also causes polyarthritis in sheep and lambs and serious mortality in turkeys. These infections are associated with a wider range of serovars than those that typically cause disease in pigs. In humans, infection causes erysipeloid, a local skin lesion, which occurs mainly as an occupational hazard of abattoir workers, veterinarians, laboratory workers, etc. The organism is occasionally isolated from cases of endocarditis in humans and rarely causes acute septicemic disease.

In the pig, the organism multiplies in the body and invades the bloodstream to produce a septicemia. The rapidity of multiplication and level of immunity then decides the clinical picture.

Stress factors such as overstocking, mixing pigs after weaning, and sudden changes in temperature can trigger clinical erysipelas.

Environmental contamination is common because bacteria are excreted via saliva, nasal secretions, faeces, and urine. *E. rhusiopathiae* can survive for weeks outside the pig. Ecoshelters with deep litter bedding on earth bases can allow an environmental build-up of bacteria.

Clinical Signs

Clinical signs of swine erysipelas can be divided into acute, subacute, and chronic forms. Subclinical infection can also occur where no disease is apparent, but may lead to chronic disease.

Pigs with the acute septicaemic form may die suddenly without showing any clinical signs. Acutely infected pigs have a fever, walk stiffly on their toes, spend a lot of time lying down separate from other pigs, and resent being disturbed. Anorexia and thirst are common. Skin lesions may vary from red to purple widespread discolouration of the ears, snout, and abdomen to diamond-shaped skin lesions almost anywhere on the body.

Clinical signs of the subacute form include characteristic skin lesions, inappetance, and a mild fever. In this form, the skin lesions may not persist for more than a few days.

The chronic form may follow acute or subacute disease as well as subclinical infection and is characterised most commonly by arthritis. Signs of heart problems due to infection of the heart valves may be evident occasionally and will be most
obvious after exertion, which may lead to sudden death.

**Diagnosis**

‘Diamond-skin’ lesions are pathognomonic for swine erysipelas. Acute erysipelas cannot easily be differentiated clinically from other septicaemic diseases such as *Actinobacillus suis*, but the combination of sudden death in previously normal pigs, fever, stiff gait, and a reluctance to move, but quite responsive to humans (bright demeanour) is highly suggestive.

Isolation of *E. rhusiopathiae* from acutely affected pigs provides a definitive laboratory diagnosis of swine erysipelas.

**Treatment**

The treatment of choice is Penicillin. Treatment early in the course of disease usually produces a dramatic improvement within 24-36 hours. There is no practical treatment for chronic swine erysipelas.

**Prevention**

All gilts and young boars should be vaccinated twice 2-4 weeks apart (according to manufacturer’s instructions) before entering the breeding herd. Sows should be vaccinated 3-4 weeks prior to farrowing and boars should be vaccinated every 6 months. Progeny may need vaccination if there is a high challenge.

If disease breakdown occurs despite a vaccination program, review hygiene and management practices and consider changing to all-in-all-out production systems.