

Diamond Skin Disease (*Erysipelothrix rhusiopathiae*)

Definition

Erysipelothrix rhusiopathiae is a non-motile, gram positive, facultative anaerobe associated with fever, arthritis, diamond skin lesions, and sudden death in pigs. It is present worldwide and has economic importance wherever swine are raised. This disease may also infect humans and manifest as local skin lesions and endocarditis.

Pathogenesis

Erysipelothrix is found in any area contaminated with feces, urine, or secretions from carriers. Infected birds and livestock may serve as a mode of transmission but their role in the spread of disease is unclear. Infection occurs through ingestion of the organism and bacterial invasion through the gastrointestinal tract, lymphatic tissues, and skin abrasions. Bacteria gain access to the bloodstream and cause a pronounced septicemia within 6-8 days of infection. Organisms spread throughout the body and produce an enzyme called neuraminidase, which causes widespread vascular and cellular damage. Vascular damage results in thrombosis of the microcirculation and leads to the well demarcated pathognomonic diamond skin lesions seen with this disease. Joint lesions begin as acute synovitis and lead to fibrinous exudates with fibrosis and damage to articular cartilage. Less commonly, microemboli of blood vessels within the heart will develop into a fibrinous valvular endocarditis.

Clinical Signs

Pigs present with a fever, lameness, anorexia, and well demarcated diamond shaped skin lesions on the abdomen.

Confirmation

Well demarcated diamond to rhomboid shaped skin lesions on the face or abdomen are pathognomonic for this disease. Petechiae and congestion may be present on multiple organs, erosive lesions can be found on articular cartilage, and valvular endocarditis may be seen.

Treatment

Vaccination with a killed bacterin, improved sanitation, and depopulation of infected pigs are used to control this disease. Hyperimmune serum is effective in decreasing the severity of this disease and response to antibiotic therapy is rapid and rewarding.