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An outbreak of Acute Swine Erysipelase in A Herd in Iran

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Erysipelothrix insidiosa has been known as the cause of swine erysipelas and rhumatoid arthritis. The morbidity and mortality rates as well as the clinical and pathological manifestations have previously been studied .

Erysipelothrix insidiosa has been recorded from a variety of sources such as sheep , poultry , cattle and horses in area where swine exists (1 , 2 , 6 , 8 , 9).

Infection in man have recorded in those handling fish and infected meat in abattoirs (4 , 5 , 7) .

This paper with the clinico pathological aspects of the disease in infected pigs showing polyarthritis and skin lesions as the main symptoms.

History of outbreak :

The history started with a report of high mortality among pigs in a farm located at 12 Km, west of Hessarak , Iran .

In this farm, which has been established since 1954, seven to eight thousand head of swine are usually kept . No serious illness had been reported among pigs until 1972 when mortalities occured bacteriological works confirmed the outbreak to be initiated by swine erysipelas and owner was notified .

In July 1976 , the farm owner reported again a mortality of 200 head of swine in his piggery and submitted a sick piglet to the Razi Institute . This animal was slaughtered and a complete necropsy as well bacteriological examinations were carried out . After receiving the report this farm has been kept under close surveillance and the following date were collected .

325 head piglets died during these period . All of the affected animals showed skin lesion as well as polyarthritis, but remaining piglets in the farm appeared to

be healthy . Samples were collected from sick piglets for bacteriological examina tions .

Laboratory Investigations :

On arrival to the laboratory , spleen , lungs and affected subcutaneous were subjected to bacteriological examinations . Synovial fluid was aseptically with a pasteur pipette and 0.2 ml inoculated into serum broth media and on the withdrawn surface of blood agar plates containing 5% rabbit blood . These cultures were then incubated under aerobic condition at 37°C for 24 houss .

Cultures were also made from heart blood and other organs such as liver, and lungs of any carcase received from the infected herd in every occasion . All cultures were incubated at 37°C for 24 to 36 hours . Various differential media were used to study the biochemical properties of the isolated bacteria .

Saline suspension of spleen , subcutaneous erythemtous tissue and the isolated bacteria were injected subcutaneously into white mice .

RESULTS

Cultural characteristics :

Growth characteristics on all plates were identical and consisted of minutes, colourless, translucent colonies .

Organisms from these colonies were short, gram positive rods which produced acid but not gas , in glucose , galactose , lactose, and fructose . No fermentation occurred in arabinose , xylose , mannitol , sorbitol , trehalose , and salicin . Hydrogen sulfide was produced , but indole and citrate were negative.

Autopsy and gross pathological findings :

The skin was red with a formation of typical diamond shaped lesions on the body (F ig 1) .

The submaxillary lymph nodes were slightly swollen , edematous and congested . The heart showed diffuse congestion and a few petechiae observed on the lungs , which were also congested . The liver and kidneys showed some congestion with necrotic foci on the surface . The mucosal of the stomach was covered with a watery mucosa fluid was reddish in colour . There was enteritis through out the intestinal tract .

The synovial fluids of the joints were in excess , but no thickening no the membrane was observed (Fig 2) . The spleen was somewhat enlarged (Fig 3).

Erysipelothrix insidisa was isolated from various tissues and joints of all carcases .

Pathogenicity of the isolated bacteria

8 mice were given 0 . 2 ml of the 24 hours broth culture subcutaneously which died after 24 to 48 hours and Erysipelothrix insidiosa was recovered from the internal organs .

Summary and Conclusions

Laboratory and clinico - pathological investigations were made on a case of swine erysipelas occurring in a farm near Hessarak , Iran and the isolated bacteria was found to be pathogenic for white mice . The disease had undoub tedly existed in this farm for a number of years , at in a chronic form without being considered as a serious problem by the owner .

The present report emphasises the fact chronic nature of the disease may at the time transfer to an acute outbreak .

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Fig. 1. A 9 months old pig showing skin lesions;

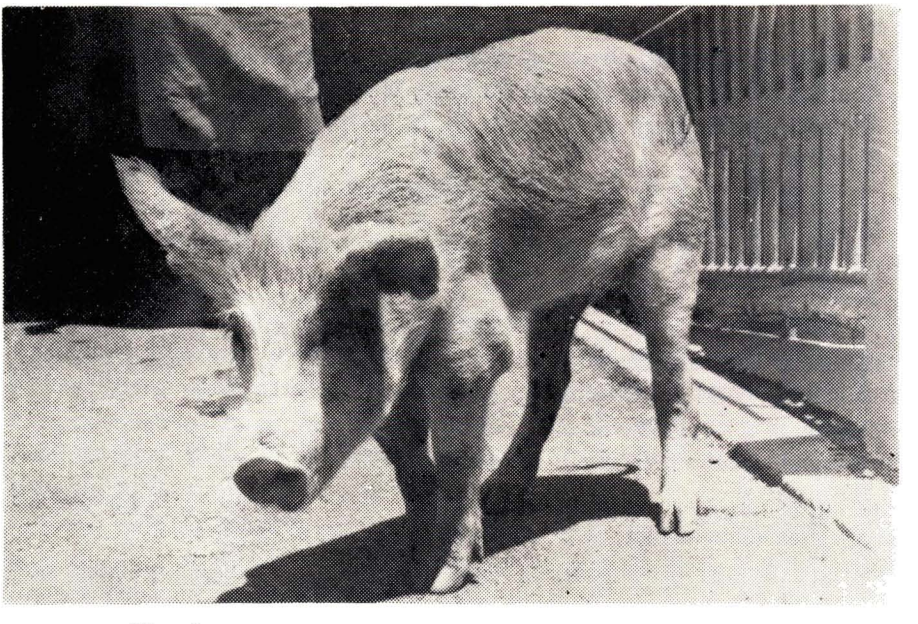

Fig. 2. A 9 months old pig shows arthritis.

Fig. 3. A cospicuous enlargement of the spleen.