UNUSUAL LESIONS IN SWINE BRUCELLIASIS

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The entire thesis of the paper can be stated briefly in three premises, with conclusions pertaining to an unusual or heretofore undescribed bone lesion in swine suffering from Brucelliasis (porcine infectious abortion).

1. Swine Brucelliasis (porcine infectious abortion) has been recognized as a spontaneous disease in hogs on Illinois farms over a period of approximately ten years. The initial infection in many herds coming to our attention is characterized by expulsion of immature litters. Infected herds, however, do not continue to abort. Many aborting sows (porcine infectious abortion) may not subsequently abort but carry their litters to maturity. Therefore, following the initial outbreak in herds, abortion may occur only rarely or not at all. The disease in such infected herds can be accurately determined only by the application of the agglutination test, or by bacteriologic examination of the tissues of infected animals.

2. The agglutination test for Brucelliasis when applied to the blood serum of several hundred breeding hogs on Illinois farms, without reference to the history of previous abortion, suggests that approximately five percent of the animals either have been infected, or harbored the infection at the time tested. Gross pathologic lesions of Brucelliasis in swine have rarely been recognized by the clinician. Infection of the reproductive organs of the male may be associated with orchitis and abscess formation in the testes. In the pregnant female, placentitis constitutes the outstanding gross pathological change, but this lesion is not specific.

3. In our observations bone lesions may be associated with Brucelliasis, in support of which the following data is presented. On a farm in McLean County, Illinois, where hogs have been raised for a period of 40 years, an increasing number of the breeding animals have in the last decade developed symptoms of lameness and stiffness (fig. 1). A clinical examination of the affected animals revealed distinct swellings of the articulations of the extremities (fig. 2). The other

animals suffering from difficult locomotion (stiffness, soreness, and lameness) failed to show clinical arthritic involvements. At autopsy, the pigs showing clinical arthritic involvements were found to suffer from pyogenic arthritis with an abundance of creamy, yellow pus in and distending the articular capsule (fig. 2). The bursa adjacent to the articulation were also involved, while the articular surfaces showed focal erosions. One other animal that displayed marked symptoms of lameness failed to reveal any involvement of the articulations at autopsy. An examination of the bones of the legs bisected longitudinally revealed multiple abscesses in the epiphysis of the long bones (fig. 3 and 4). The specificity of these suppurative

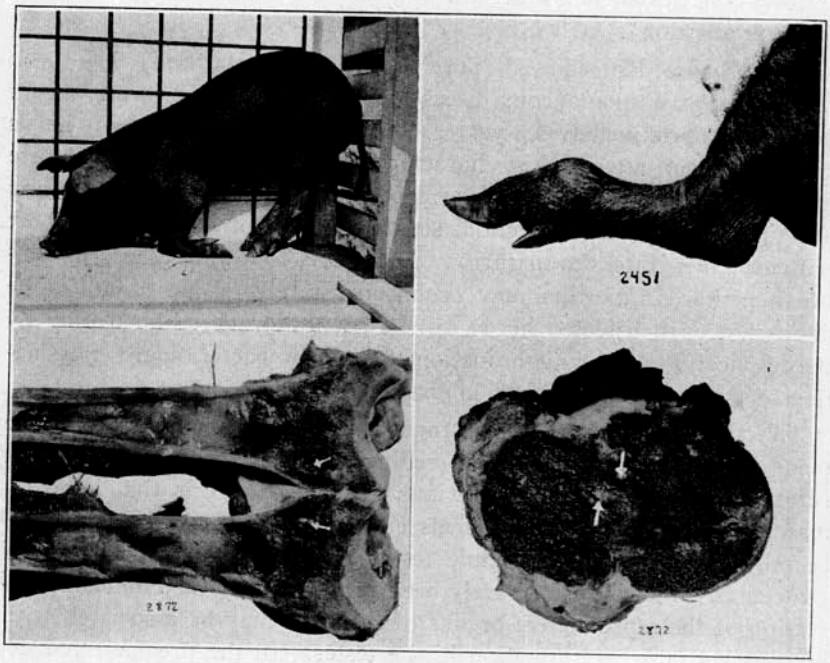

FIG. 1. *(Above, left)* A pig affected with a Brucella osteomyelitis. Note the enlargement of proximal extremity of the radius at the cubital articulation. The painful bone lesions prompt the animal to walk or rest on the knees with a portion of the weight supported by the head.

FIG. 2. *(Above, right)* A pig affected with Brucella arthritis. A metacarpo-phalangeal swelling was soft and fluctuated on palpation. Autopsy revealed a pyogenic arthritis with erosions of the articular cartilage.

FIG. 3. *(Below, left)* Longitudinal section of the left radius showing Brucella osteomyelitis (pig shown in Fig. 1). Note the necrotic foci (arrow points) in the epiphysis of radius. The articular cartilage of the cubital articulation is normal.

FIG. 4. *(Below, right)* Cross-section of the head of humerus (pig shown in Fig. 1). Note the multiple circumscribed abscesses in bone marrow.

osteomyelitic lesions was suggested by the positive serum agglutination reaction in dilution of 1 to 800 as well as by isolation of the porcine type of Brucella from the pus found in the bone lesions.

Conclusions: As a result of the above observation, it is apparent that arthritis and osteomyelitis in swine may cause marked symptoms of lameness and stiffness. These inflammatory pyogenic bone lesions with multiple necrotic foci in the epiphysis of the long bones harboring Brucella suis Traum suggests the possible significance of this bacterial infection in a new rôle, distinct from invasion of the reproductive organs.