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Corynebacterium Psuedotuberculosis in a Gilt

W. J. Kilpatrick, V. M. 3

May 10, 1947, a 1-year old Duroc gilt was brought to the Stange Memorial Clinic with an abscess of the right scapular region, with a fistulous tract discharging pus over the right shoulder area. The temperature of the gilt was elevated to 104.8° F.

May 12, 1947, the right shoulder area was cleaned and shaved, the skin in the area was infiltrated with 2 percent procaine hydrochloride. The fistulous tract was probed and an opening was made at the lower extent of the abscess to establish drainage. A seton was put in place and the wound was irrigated with liquid Bipp. Following the original treatment, the wound was irrigated daily with potassium permanganate: 3000, and Bipp was injected into the abscess.

May 31, 1947, the gilt was brought to the post mortem laboratory and destroyed. Post mortem examination revealed caseous lymphadenitis, a healing abscess in the scapular region, purulent pneumonia, pericardial adhesions, and chronic purulent periulvitis. Most of the peripheral lymph nodes showed chronic purulent lymphadenitis. Ascarids and lungworms were also found.

May 12, 1947, following the external cleaning of the right shoulder area, a sterile swab was inserted into the abscess to obtain samples of the exudate for bacteriological cultures. By streaking the exudate on blood agar plates, the organism Corynebacterium pseudotuberculosis was isolated and identified. A gram negative rod, resembling Pasteurella hemolytica, was also isolated, but was regarded as being of secondary importance.

During the post mortem examination, smears from the prefemoral lymph nodes were made on slides during the post mortem examination, showed gram positive rods with distinct metachromatic granules.

Colonies of Corynebacterium pseudotuberculosis on the blood agar plates were dry, crumbly, and orange colored. The organism isolated from the exudate of the abscess on May 12, produced acid without gas from dextrose and maltose, did not ferment sucrose, salicin, mannite, raffinose, inulin, trehalose, or sorbitol. Indol was not produced and nitrates were not reduced. Growth extended up the sides of the tubes from the surface of fluid media; some of the surface growth settled to the bottom of the tube, forming a coarse, granular sediment. When this organism was examined again two weeks later, it did not ferment dextrose or maltose during an observation period of two weeks. The organism isolated from the prefemoral lymph nodes during the post mortem examination did not ferment dextrose or maltose, and was in every other respect identical with the organism isolated from the abscess.

Although the organism did not ferment carbohydrates in the manner attributed to it in classical descriptions, it was regarded as Corynebacterium pseudotuberculosis because of its staining properties, orange colored dry colonies, tube growth, sedimentation, and other growth characteristics.

The presence of Corynebacterium pseudotuberculosis in swine is rare. No previous cases are believed to have been reported. The post mortem picture was similar to that presented by caseous lymphadenitis in sheep, a disease also caused by Corynebacterium pseudotuberculosis, and characterized by caseation necrosis in the lymph nodes. Corynebacterium pseudotuberculosis also is the etiological agent of ulcerative lymphangitis of horses. In deer, the organism causes subcutaneous abscesses on the extremities.

References: