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Anthrax On The Increase

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ACCORDING to the latest figures compiled by Dr. Paul C. Bennett, supervisor of the Iowa State Diagnostic Laboratory, there has been a sudden upsurge in the number of cases of anthrax in the state of Iowa. A survey of the diagnostic records from the years 1939 to 1950 shows that only six cases were definitely diagnosed as anthrax. A breakdown of these cases reveals that four occurred in swine and two in cattle. These figures do not include the years 1940 and 1941 since no report was available for this two year period.

During the year 1951, 14 cases of anthrax from 11 different counties were definitely diagnosed at the Iowa State Diagnostic Laboratory. Ten of these cases occurred in swine and the other four occurred in bovines. It should be kept in mind that these figures do not include all the reported cases of anthrax that were diagnosed in the entire state of Iowa.

According to a news release dated April 10, 1952, from the office of the state Secretary of Agriculture, 30 cases of anthrax have been identified in 27 counties in the state to date this year. The number of cases reported during the entire year of 1951 was only 14.

As far as can be determined, the distribution of these cases is fairly general over the entire state. Of the 14 cases diagnosed during 1951, only one case gave any indication of a previous outbreak of anthrax on the farm. The farm had been in the possession of the same family for the entire period of time and the owner recalled having had an outbreak on the premises 25 years prior to this case.

Diagnosis

According to Dr. Bennett, the biggest problem of field diagnosis occurs in swine. Occasionally, spontaneous recoveries have been known to occur, this somewhat complicating the diagnosis. The primary lesion noted in swine is an inflammatory edema of the jowls and throat. If more than one or two animals in a herd of swine show this lesion, one of the animals should immediately be sacrificed for diagnostic purposes. A small portion of the edematous throat tissue and the anterior cervical lymph nodes should be sent to the nearest diagnostic laboratory. Direct smears from this edematous tissue may fail to reveal any anthrax organisms whereas animal inoculation may prove the case to be positive. If anthrax is definitely suspected, the entire carcass should be destroyed, including feces and exudates. Anthrax may be transferred to dogs and other swine if they are allowed to eat any of the dead carcass.

This problem of diagnosis does not occur in the bovine because the disease is usually of an acute nature and the animal is dead in from 10 to 36 hours. The relatively short course of the disease in the bovine, in addition to autopsy lesions of black tarry non-clotting blood, bloody
exudate at the body openings, lack of rigor mortis, hemorrhages throughout the body, and enlargement of the spleen, should make the diagnosis rather definite to the veterinarian. If a laboratory diagnosis is desired, a section of the spleen or a sample of blood are the best specimens to submit for diagnostic purposes.

When submitting a tissue specimen for possible anthrax identification, it should be put in a tightly sealed non-breakable container, then packed in ice, properly marked, and immediately sent to the nearest diagnostic laboratory for examination. A complete history of the case should accompany the specimen.

The question now arises as to just why the sudden increase in the incidence of anthrax in swine, especially since this animal is not considered a naturally susceptible host. This question was recently answered through research carried out in the state of Ohio when they were able to isolate the anthrax organisms directly from some foreign bone meal. Ohio, Illinois, Indiana, Wisconsin, as well as Iowa have been affected by this sudden increase in the incidence of anthrax in swine.

Control Measures

Since the anthrax spores have definitely been identified in foreign bone meal in other states, the Secretary of Agriculture of Iowa has established an order of quarantine against all foreign bone meal shipped into or within this state. Under this quarantine no bone meal, or bones in any form, or animal products, imported from any foreign country intended for use as animal feeds, including mineral feeds, or as fertilizers shall be moved into or within the state of Iowa. As to the disposal of animals which have died of anthrax or are suspected of having died from anthrax, the quarantine states that they shall not be removed from the premises on which they died but shall be promptly disposed of by:

a. Total burning
b. Partial burning, covering generously with quick lime and burying not less than six feet below the surface of the ground.

c. Without burning by covering generously with quick lime and burying not less than six feet below the surface of the ground.

Complete burning is recognized as the best method of disposal of an anthrax carcass. Provisions have been made whereby written permission may be obtained from the secretary of agriculture to move any of the foreign bone meal already on hand to a rendering plant for adequate sterilization. This embargo was dated April 9, 1952.

Other states which have recently established an order of quarantine against the importation of bone meal include Indiana, Illinois, Ohio, Alabama, Tennessee, Wisconsin, Michigan, Nebraska, Kentucky, and West Virginia. Virginia and Kentucky have also placed a quarantine on all food producing animals shipped into their respective states unless accompanied by an official health certificate, which, in addition to the previously adopted provisions for import regulation, shall include a statement that such domestic animals originated directly from counties in the state of origin in which no anthrax has been diagnosed for a period of 12 months immediately preceding such importation. They also state that domestic animals which have been vaccinated with spore vaccine as an immunizing agent against anthrax may not be imported into their respective states within six weeks after such vaccination.

One must remember that large quantities of bone meal were shipped into the previously mentioned states prior to the embargo. Numerous farmers undoubtedly used some of these contaminated foreign bone meals as fertilizers as well as in animal food supplements. This brings about the problem of wide spread soil contamination with anthrax spores. The general practitioner may expect to see a great increase in the number of cases of anthrax in his territory and should maintain a constant surveillance for possible anthrax cases. Measures should be taken to establish an early diagnosis if any suspicious cases appear, and the practitioner should take all precaution to prevent the spread of this disease.