

VIBRIOSIS OF CATTLE is a widespread venereal disease which causes considerable financial loss to the dairy and beef cattle industries. When the disease is first introduced into a herd the breeding program may be set back 6 months or more. Repeat breeding is the primary manifestation of the infection in heifers and cows. Many of the infected females return in heat 27 or more days after service. These prolonged estrus cycles are probably the result of embryonic death caused by vibrionic endometritis. The estrual mucus is often cloudy in recently infected cattle. The inflammatory lesions in the reproductive organs are not severe enough to produce alterations which can be detected by rectal palpation. Recognizable abortions may occur at any stage of pregnancy, but they are not as prominent a manifestation of the disease as repeat breeding. The majority of cows recover within a few months but bulls appear to harbor the *Vibrio fetus* organism indefinitely. There are no clinical signs of the presence of the organism in the bull.

The disease may spread either by natural service by carrier bulls or by artificial insemination if the semen is not properly treated with antibiotics.

DIAGNOSIS

The most logical approach to the diagnosis of vibriosis is on a herd basis. The vaginal mucus test appears to be the easiest and most reliable method to use for establishing a diagnosis. It is recommended that mucus samples be collected from six to eight heifers which have failed to conceive on several services or which have had an abnormally long estrous cycle. It is preferable to test mucus from heifers because an occasional cow may carry a mucus titer for years. This might not be indicative of active infection. Estrual, metestrual and post-parturient samples should not be submitted for testing. Antibodies are diluted in estrual mucus and such samples may give a false negative reaction. Mucus which contains very much blood may result in a false positive test. Mucus should be collected by inserting a gauze tampon attached to a piece of

BOVINI VIBRIOSI

string into the anterior part of the vagina by means of a small speculum and push rod. The tampon is then withdrawn from the vagina and placed in a glass or plastic vial for shipment to the laboratory. A positive vaginal mucus agglutination reaction may be detected in approximately 40 to 80 days following exposure. The mucus titer usually persists for approximately 7 months. Consequently it is suggested that mucus samples be collected from heifers which have been bred to a suspected carrier bull for the first time at least 2 months, but not over 9 months previously.

In our experience the blood test is less reliable than the mucus test for detecting the presence of vibro agglutinins. We do not recommend it for routine use.

Vibrio organisms may be cultured from uterine, cervical and vaginal fluids and from the prepuce and semen. However due to the difficulties of collecting suitable material, and having it arrive at the laboratory in satisfactory condition, cultures are not recommended for the routine diagnosis of vibriosis.

CONTROL

The purchase of adult cows or bulls is a potential hazard in regard to the possible introduction of vibriosis. The transmission of the disease can be traced frequently to the purchase of mature cows or bulls or to

Dr. McEntee is a 1944 graduate of New York State Veterinary College. He is now with their Department of Pathology and Bacteriology.

Diagnosis, Control, Treatment

Kenneth McEntee, D.V.M.

the use of a borrowed bull. Sexually immature animals appear to be resistant. Mature animals which are introduced from outside herds of unknown status should not be allowed to mate naturally with the rest of the herd. If semen is used from carrier bulls or those of unknown vibrio status the semen should be properly treated with antibiotics. It has been shown that it is safe to use semen from vibrio carrier bulls if 500 units of penicillin and 500 units of streptomycin are added to each milliliter of diluted semen. The semen should be extended at least 1:25 and held for at least 6 hours at refrigerator temperature before use.²

In vibrio infected herds the spread of the disease can be controlled by artificially inseminating with semen from non-infected bulls or semen which is treated as previously described. If artificial insemination cannot be used, the disease can be controlled partially by establishing two breeding units, one composed of virgin heifers to be bred by a clean bull and the other made up of the animals which have been bred by a carrier bull. Only clean animals should be added to the first group. This method is not completely satisfactory because the disease will persist in the infected group and occasionally some of the cows may become reinfected.

TREATMENT

The treatment of vibrio infected cattle without establishing control procedures

for preventing the spread of infection is very discouraging. It is difficult to determine when a previously infected animal is cured and there is a constant threat of infection in virgin heifers and reinfection in recovered cows and bulls. Furthermore, if adequate controls are established, much less treatment will be required.

For the treatment of cows, Adler¹ reported that intrauterine streptomycin therapy was quite successful. He stated that the best treatment was one gram of streptomycin infused into the uterus daily for 3 days or one gram repeated 48 hours later. In his experience an aqueous vehicle was as effective as an oil suspension. Lugol's solution was ineffective and Aureomycin was not as effective as streptomycin. Streptomycin was as effective as a combination of streptomycin and penicillin. According to his observations the stage of the estrous cycle during which streptomycin was infused did not influence recovery.

The treatment of vibrio carrier bulls appears to be less successful. It is not known whether the reported failures are due to reinfection or treatment failure.

SUMMARY

1. Vibriosis of cattle may be diagnosed most readily on a herd basis by testing vaginal mucus from six to eight heifers which have been bred to a suspected carrier bull.
2. The disease may be controlled by artificially inseminating with semen from clean bulls or with semen which is properly treated with streptomycin and penicillin.
3. Cows may be treated with intrauterine infusions of streptomycin.
4. The treatment of bulls has not been perfected.

REFERENCES

1. Adler, H. C. Genital vibriosis in the bovine. (Experimental investigations with a special view to diagnosis, prophylaxis, and treatment.) Thesis. Copenhagen, Denmark. 1957.
2. McEntee, K., D. E. Hughes, and H. L. Gilman. Prevention of vibriosis in inseminated heifers by treating the semen from vibrio infected bulls with penicillin, streptomycin and sulfanilamide. *Cornell Vet.* 44:395-402. 1954.