

Brief communication

MYCOPLASMOSIS: EXPERIMENTAL INOCULATION OF
CALVES WITH A DANISH STRAIN OF MYCOPLASMA
BOVIGENITALIUM

During the fall of 1966 several strains of *Mycoplasma* were isolated from semen samples of bulls. A strain, "K", isolated from a bull with vesiculitis was selected for a series of experiments and proved to be pathogenic for the mammary gland of cows and for the genital tract of bulls (*Ernø 1967, Blom & Ernø 1967*). The "K" strain has now been examined serologically by the author, and it must be considered as belonging to the species *M. bovis genitalium* as determined by complement fixation and indirect haemagglutination tests. This communication reports the results of experimental inoculation of calves.

Materials and methods. Two new-born calves (RDM) were used for the experiments.

1. One calf was infected (March 1967) by intraperitoneal infusion of 7.0 ml of a 72-hour-old broth culture. The number of colony forming units (c.f.u.) per ml was 5×10^7 .

2. The second calf was infected (April 1967) by intravenous infusion of 8 ml of a 72-hour-old broth culture. The number of c.f.u. per ml was 10^7 .

Experiment 1. Clinical and laboratory findings. The calf did not show clinical signs of infection with the exception of a slight rise in temperature, 48 hrs. p.i.; no lesions were found when the calf was slaughtered 13 weeks p.i. Mycoplasmas were never isolated — attempts were made several times from the nasal cavity and the blood — but a definite rise in antibody titer was demonstrated using the indirect haemagglutination test*) from 20 (16 days p.i.) to 640 (13 weeks p.i.). The CF test remained negative throughout the period of observation.

Experiment 2. Clinical findings. The temperature was slightly elevated 48 hrs. p.i. and thereafter the calf remained subfebrile for a week when the temperature rose to 40.4. Temperature remained elevated for 24 hrs., then returned to the subfebrile level. Arthritis and mild diarrhoea occurred 9 days p.i.

*) Worked out for the routine work of the Institute of Medical Microbiology by A. Krogsgaard, M.D.

Pathological and histopathological findings. At necropsy 3 weeks p.i., significant lesions were present in the right carpal and shoulder joints, particularly in capsules where several small, dry abscesses (3—4 mm in diameter) were found. Histopathologically the abscesses were diagnosed as eosinophilic granulomas with central necrosis.

Cultural findings. Mycoplasmas were isolated from the blood 10 days p.i.; post mortem mycoplasmas were isolated from the periarticular abscesses of the right shoulder and carpal joints, from the right carpal joint and from the axillary lymph node.

Serological findings. Antibodies were demonstrated by indirect haemagglutination: 2, 4, 9 and 16 days p.i. the titers were < 2; the titer of the blood sample drawn 3 weeks p.i. was 80. The CF test was consistently negative.

Discussion and conclusions. The "K" strain of *M. bovigenitalium* may be pathogenic when introduced into the blood stream, giving a clinical picture characterized by peri-arthritis, arthritis and slight diarrhoea. Antibodies may be formed even in silent infections, and the indirect haemagglutination test seems to be preferable for clinical-serological purposes, as *M. bovigenitalium* does not appear to ferment glucose, decarboxylize arginine or reduce salts of tetrazolium — which, at least at the present time, excludes use of metabolic inhibition tests. Using the indirect haemagglutination test, antibodies were detectable (Exp. 2) 12 days after severe clinical signs had been observed.

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