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Contagious Equine Metritis

Contagious equine metritis (CEM) is an acute, highly contagious venereal disease of horses (and experimentally of donkeys) characterized by a profuse, mucopurulent vaginal discharge and early return to estrus in most affected mares. Infected stallions and chronically infected mares show no clinical signs. The disease is seen primarily in Europe, but technical challenges in propagation of the causative organism prevent accurate determination of the precise distribution of the disease.

Etiology and Transmission

CEM is caused by the gram-negative, microaerophilic coccobacillus *Taylorella equigenitalis*, also known as the contagious equine metritis organism (CEMO). Important strain differences exist; some strains are resistant to streptomycin (a fact that helps isolate this fastidious, slow-

growing organism from contaminants), whereas others are streptomycin-sensitive. It is best cultured on chocolate Eugon agar at 37°C in an atmosphere of 5%–10% CO₂ in air. *T equigenitalis* is asaccharolytic but is positive for catalase, cytochrome oxidase, and phosphatase and unreactive to other conventional biochemical tests.

CEM is transmitted primarily at mating, but infected fomites (instruments and equipment) also play a role. Undetected infected mares and stallions are the source of new outbreaks. Infected stallions show no signs and harbor the organism in the smegma of the prepuce and the surface of the penis, especially in the urethral fossa. The transmission rate is exceptionally high; virtually every mare mated by an infected stallion becomes infected.

Clinical Findings

In mares, a copious, mucopurulent vaginal discharge is seen 10–14 days after infected matings. Mares may return to estrus after a shortened estrous cycle. Although the discharge subsides after a few days, mares may remain infected for several months. Chronically infected mares show no signs. Most mares do not conceive at the time of infected mating. If they do, they may infect the foal at or shortly after birth. Foals so infected may become carriers of CEMO when they reach sexual maturity.

Lesions:

Lesions consist of edema and hyperemia of the endometrium, the

endocervix, and the vaginal mucosa. The microscopic lesions include invasion of the affected tissues by neutrophils during the acute stage, and by lymphocytes, macrophages, and plasma cells later in the course of the infection.

Diagnosis

Diagnosis depends on isolation of the causative organism. Although other bacterial infections of the genital tract of mares may produce a conspicuous vaginal discharge, this is uncommon, and no other venereal pathogen of the equine reproductive tract is as contagious. In mares, swabs for culture should be taken from the endometrium (preferably during estrus) and from the clitoral fossa and sinuses. Swabs from suspected stallions should be taken from the urethral fossa, the urethra, the preputial cavity, the shaft of the penis, and, if possible, the preejaculatory fluid or ejaculate. Stallions should be sampled at least three times before being declared free of CEMO. Test-mating suspect stallions to susceptible mares that are then screened bacteriologically constitutes a satisfactory way to determine CEM status. All swabs should be placed in a transport medium (preferably Amies with charcoal), kept on ice or at 4°C, and delivered to a qualified laboratory within 24 hr (or frozen if transport will take longer). A variety of serologic tests has been developed, but none is yet capable of reliably detecting the carrier status.

Treatment and Control

Stallions can be treated by thoroughly cleaning the extended penis with chlorhexidine surgical scrub and then applying nitrofurazone ointment. This should be repeated daily for 5 days, and the stallion retested at least 10 days after treatment. Most mares rid themselves of uterine infection after a few weeks. Those that become chronically infected harbor the CEMO in the clitoral fossa or sinuses. They can be treated by thoroughly cleaning the clitoral area with chlorhexidine surgical scrub and then applying nitrofurazone ointment (as for the stallion). In some mares, surgical excision of the clitoral sinuses may be required to rid them of infection.

Control of CEM depends on identification of infected carrier animals and on their treatment or elimination from breeding programs. Strict import regulations exist in many countries to avoid the introduction of CEM, and current prevalence of the disease appears to be low.

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