JOURNAL OF CLINICAL MICROBIOLOGY, Sep. 1985, p. 448
0095-1137/85/090448-01$02.00/0

Vol. 23, No. 3

Enteritis Caused by *Pasteurella pneumotropica* Infection in Hamsters

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Received 22 April 1985/Accepted 20 May 1985

***Pasteurella pneumotropica* was isolated in essentially pure cultures from the bowels of hamsters with enteritis 7 days after parturition. Newly received hamsters showed presence of *P. pneumotropica* in their nasal cavities but not in their uteri, lungs, spleens, or bowels.**

Pasteurella pneumotropica was first isolated and characterized by Jawetz (3). Jawetz and Baker (4) described the pathogenesis of the lesions associated with *P. pneumotropica* in mice. The high carrier rate in apparently healthy rodents and the association of *P. pneumotropica* with a variety of pathogenic conditions were reported (1, 2, 5–7). Our report describes an occurrence of enteritis caused by this bacterium in hamsters.

Recently we received term-pregnant hamsters carrying *P. pneumotropica* in their nasal cavities but not in their lungs, spleens, uteri, or bowels (Table 1).

Seven days after parturition, 11 hamsters presented with prolapsed rectums, rectal discharge, and enteritis. Ten days after parturition, the same hamsters began to cannibalize their pups and were sacrificed.

Swabs from the nasal cavities and specimens of the lungs, spleens, uteri, and bowels were aseptically collected from all 11 hamsters and delivered to the bacteriology laboratory for immediate processing. Swabs from the nasal cavities were streaked onto 5% sheep blood agar (GIBCO Laboratories) and chocolate agar.

Tissue specimens were aseptically transferred to sterile blenders containing 100 ml of tryptic soy broth (Difco Laboratories) and were ground for approximately 5 min. With a sterile cotton swab the ground tissue specimens were plated onto 5% sheep blood agar, chocolate agar, eosin-methylene blue agar, MacConkey agar, salmonella-shigella agar, and Campy blood agar (GIBCO). All plates were incubated aerobically at 37°C for 48 h except the Campy blood agar plate, which was incubated at 42°C for 48 h in a GasPak jar (BBL Microbiology Systems) containing a Campy II Pak (BBL).

P. pneumotropica was isolated in essentially pure cultures from the nasal cavities and bowels of all hamsters with clinical signs of enteritis (Table 1). All isolates grew well on sheep blood agar and on chocolate agar, but weakly on MacConkey agar. Isolates were identified by using conventional biochemical reactions by the method of Brennan et al. (2). Results showed that all isolates were indole and oxidase positive. Additional biochemical reactions included the following: positive results for glucose, sucrose, maltose, lactose, ornithine decarboxylase, and urease; negative results for mannitol, citrate, inositol, and gelatin liquefaction.

The relationship between *P. pneumotropica* isolation and infection in a variety of animal species is well documented (1, 2, 5–7). Our report describes a first occurrence of this infection in hamsters. Because this bacterium was carried in the nasal cavity before illness, transmission to the gastrointestinal tract was probable. This mode of transmission was suggested by Blackmore and Casillo (1) for an incidence of uterine infection caused by *P. pneumotropica*.

TABLE 1. Incidence of *P. pneumotropica*

Site of isolation	No. of hamsters (no. tested/no. positive)	
	Carrying *P. pneumotropica*[a]	With enteritis
Nasal cavity	10/10[b]	11/11
Bowel	0/2[c]	11/11
Lungs	0/2	0/11
Spleen	0/2	0/11
Uterus	0/2	0/11

[a] Total received, 50; all were clinically healthy.
[b] Randomly sampled nasal swabs.
[c] From randomly sampled nasal swabs for tissue isolation.

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