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**Animal Health
Fact Sheet**



CAT PLAGUE— VETERINARIANS CAUTION

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AH/General/03

Plague is caused by the bacterial agent, *Yersinia pestis*. There are three forms; bubonic, septicemic, and pneumonic. Canines are highly resistant to infection.

CLINICAL SIGNS

- Lethargy
- Anorexia
- High fever

All three forms usually have all three of these signs and the bubonic form has enlarged lymph nodes as well (buboes; lymphadenopathy; lymphadenitis), especially in the submandibular lymph nodes. Some of these may abscess. Both the bubonic and septicemic forms may also become pneumonic in cats and this increases the risk of spread to man.

There may occasionally be oral lesions or coughing, etc.

TRANSMISSION

- Aerosol (pneumonic form)
- Cat bites and scratches
- Rodent fleas, carried temporarily by the cat
- Draining abscesses

DIFFERENTIAL DIAGNOSIS

- Cat bite abscesses
- FIP/FELV
- Tularemia
- Other diseases causing general signs as above

PRECAUTIONS IN SUSPECT CASES

- Wear mask and gloves
- Treat (dust) for fleas
- Isolate
- Contact the Utah Department of Health, Bureau of Epidemiology, Communicable

Disease Control Program (801-538-6191), prior to treatment, collecting samples or performing a necropsy
Begin on prophylactic antibiotics, after sample collection (oral tetracycline or aminoglycosides)

COLLECTING SAMPLES

Lymph node aspirate in sterile tube with saline Whole blood (red top tube)

If necropsy: liver, spleen, LN biopsy, lung (fresh and formalin).

Send samples to: Utah Dept. of Health, Division of Laboratory Services. Contact as above at 538-6191.

CDC IDENTIFIES CATS AS POTENTIAL VECTORS OF HUMAN PLAGUE

(JAVMA 191:406-409; Aug 15, 1987)

Plague has been in the news from several areas in the much from world. The Center for Disease Control has become especially concerned about two aspects of plague (and these concerns affect veterinarians in Utah very directly); first, plague has been increasing in recent years in the western states and second, cats are being recognized more often as being associated with human plague cases.

The increase in human cases is rather dramatic in the western states.(1) Although the numbers are still low, it becomes very important if you are one of those numbers affected by this serious disease.

Until 1977, cats had not been reported as sources of human plague infection. But since then, cats have been identified as the source of plague infection in a number of cases (2) and one of those occurred in Utah. A point that is especially concerning is that “the proportion of human plague cases with primary pneumonic plague has been substantially higher among cat associated cases”(2). And the pneumonic form is especially serious and contagious, even to other humans.

Both veterinarians and their assistants have been infected with plague. The following description paints a vivid picture of why we should be concerned enough to take at least some precautions and begin to consider plague as part of a differential diagnosis in sick cats. A personal experience from a veterinarian is described below.

For Pam Muhonen, a part-time practitioner (Lyons, Colorado) and mother of two small children, the risk of plague is very real. It nearly killed her. Had she arrived at the hospital two hours later than she did—suffering from kidney pain, flu-like symptoms, a fever of 105 degrees F and in septic shock —doctors say she would have been dead.

Muhonen contracted the deadly infection ... five days before presentation of clinical signs during her Saturday shift at the veterinary hospital. That day, a walk-in client brought in a semi-feral cat that was near death. To Muhonen, the cat physically looked like a classic FIP/FELV case and questioned the client for history prior to treatment.

The client didn't know the cat's history and didn't want to run lab tests, as he did not want to invest money in the cat...

“The unnerving thing about this cat's presentation, now that I think about it, was he had no symptoms of a classic case (of plague),” Muhonen says. “He had no bubos, no cough, so plague was quite low on my differential list. He did have a small raw area on his lip, as small as the tip of my little finger, but it wasn't much.”

Muhonen says doctors believe she contracted the infection from aerosolized *Y. pestis* expelled from the cat when it mewed. “The cat was so far gone that it wasn't even able to cough,”

she recalls. "When they did a chest X-ray on me, the location of infection was in my upper right lung, which suggests I inhaled it."

After the client and cat left the practice, Muhonen thought nothing more of the visit. On Wednesday, after spending time with her children and running errands, she became suddenly, violently ill with what she thought was a severe case of the flu. By the time she got to the hospital that evening, she was in septic shock and soon slipped into a coma. Twenty-four hours after her symptoms appeared, she went into both respiratory and heart failure and was hooked up to a ventilator.

"For me, the adventure was over before I even knew I was in it," Muhonen says. "I had no clue how ill I was. For several days they didn't suspect plague, but I was fortunate because they brought in an internal medicine specialist. Because I was a veterinarian, that was fourth or fifth on her differential list."

While Muhonen is nearly 100 percent recovered a year after the fact, it was a long road to make it where she is today. Due to her persistent high fever and lack of mobility in the coma, she rapidly lost muscle mass. She again had to learn to walk and breathe and rebuild her muscle mass and strength. . . .

"I still practice on cats; I still have two cats," she says. "I still enjoy feline practice. . . . I just take precautions. Believe me it's worth being careful. . . ."

When treating suspect cats, follow CDC recommendations and wear gloves, eye protection and respiratory protection. Though it may not be foolproof, it is still better than nothing, Muhonen points out.

Muhonen says if the signalment of a sick feline is suspicious . . . put plague on your differential list and send in a blood sample for testing. Don't mess around or be casual about it she says. Encourage owners to let you do lab tests. Tell them it is for your safety and theirs, she says.

"Explain that this (is) a rare, serious disease not only for you but for them and also everyone else who has been around the cat," Muhonen says. "Even if the owner doesn't want to and the signalment fits and you're suspicious, take blood anyway for the sake of the owner, you, your staff and those around you."

"It's worth the extra effort. It's not worth dying for."(2)

References:

1. Werner, S. B., et al. Emerging Infectious Diseases; Human Plague—United States, 1993–1994. *Morbidity and Mortality Weekly Report (CDC)* 43(#13):242–244 (April 8, 1994).
2. Suttell, R. D. CDC pinpoints cats as vectors of human plague. *DVM Newsmagazine*, June 1994, pg. 1, 15, 16.

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