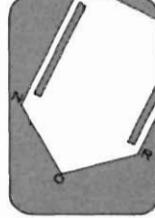


9. Jenson, H. E. *Stereoscopic Atlas of Clinical Ophthalmology of Domestic Animals*, St. Louis: C. V. Mosby Co., 1971.
10. Jubb, K. V., Saunders, L. Z. and Coates, H. V., "The Intraocular lesions of Canine distemper", *J. Comp. Path & Therap.* Vol. 67, 1957, pp. 21-9.
11. Magrane, Wm. G., *Canine Ophthalmology*, Philadelphia: Lea and Febiger, 1971.
12. Parry, H. *Brit. Journal Ophthal.* Vol. 37, 1953 p. 37, Vol.38, p. 295.
13. Paton, H. J. et al. *Atlas of Eye Surgery* 2nd ed. New York: McGraw-Hill Book Co., 1962, pp. 162-5
14. Rubin, L. F. *Atlas of Veterinary Ophthalmology*, Philadelphia: Lea and Febiger, 1973.
15. Rubin, L. F. "Correction of retinal detachment in a dog", *JAVMA* Vol. 157, Aug. 15, 1970, pp. 461-6.
16. Vainisi, S. J. *The Canine and Feline Ocular Fundus* AAHA publication, 1965.

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Will the Real Feline Respiratory Disease Please Stand Up?

by
Char Slindee*

Feline respiratory diseases are a serious and frustrating problem to cat owners and veterinarians alike. They are highly contagious and difficult to treat. In recent years, a number of agents have been recognized as causing or contributing to different forms of respiratory disease. Complicating the problem, the clinical signs of each are very similar, requiring laboratory facilities for specific diagnosis. The vet-

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erinarian must be aware of the organisms most commonly encountered in order to gain the most value from a preventative program of vaccination.

In the past, "pneumonitis" was thought to be almost synonymous with feline respiratory disease. Recent extensive research indicates this disease, caused by a chlamydia, actually plays a much less significant role. Numerous agents producing indistinguishable clinical signs have been rec-

ognized, the two most important being feline viral rhinotracheitis (FVR) and feline picornavirus infection (FPI). Feline viral rhinotracheitis, caused by a single serotype of herpesvirus, may be responsible for up to half of all the cases of feline respiratory disease. Feline picornavirus infection also causes an acute respiratory infection and can be due to one of many serotypes of picornaviruses. Other etiologies of lesser importance include feline pneumonitis, reovirus, parainfluenza virus, and mycoplasma and bacteria as secondary invaders.

The epidemiologies of feline respiratory diseases are quite similar, but attention will be focused on the two most significant agents. The route of infection is either oral or nasal, by direct contact, fomites, or aerosol exposure. Infective droplets are easily produced by the sneezing associated with the disease. The incubation period of from one to several days and the disease course, lasting up to several days or weeks, depends on the dose and the virus involved. In the case of both FVR and FPI, the virus is shed in the saliva, nasal and ocular discharges, and feces. In FPI, virus is also shed in the urine.

An important aspect of both these diseases is the presence of the carrier state. Cats recovered from FVR will shed the virus intermittently from the pharynx for many months. Feline picornavirus infection carriers can shed virus continuously from the throat and in the feces for almost a year. Female cats surviving the infection as kittens may pass the virus to their kittens. Finally, severe stress caused by another viral or bacterial infection can reactivate the disease in carrier animals.

The only way of specifically diagnosing any of these diseases involves laboratory tests. This may be valuable to determine the prognosis or possibly indicate specific treatment. Giemsa-stained smears of ocular or nasal scrapings may be helpful in identification. The herpesvirus of FVR produce red-staining intranuclear inclusion bodies, as opposed to the cytoplasmic inclusions of pneumonitis and the large, blue-staining cytoplasmic inclusions of

reovirus. The picornaviruses do not produce inclusion bodies. Another technique is viral isolation which is best accomplished from a pharyngeal swab. Immunofluorescence is a quick and convenient test in laboratories thus equipped. This can be done with nasal scrapings submitted on a slide.

Treatment of feline respiratory disease is primarily symptomatic. Broad-spectrum antibiotics are effective against secondary bacterial infection and chlamydia. Eye ointments with antibiotics should be used with conjunctivitis. Corticosteroids here are contraindicated unless there is a specific need, as they may contribute to an ulcerative keratitis. Fluids are advisable for severe infections and oxygen can be administered in severe respiratory distress. The A- and B-vitamins, and possibly vitamin C, can be helpful since diseased cats may have low levels.

Good nursing care is extremely important. The crusted nasal discharge should be cleaned from the nares to facilitate drainage and to allow the cat to smell its food or it will not eat. Use of a vaporizer may decrease the swelling of the nasal membranes and loosen the discharge. Baby foods offered during the illness may be more readily accepted by the cat than the regular diet.

The best method of prevention is by vaccination, if efficacious products are available. The first feline respiratory vaccine on the market was for pneumonitis but its ability to produce a satisfactory immunity is quite controversial. The very recently developed FVR vaccine¹ seems to be safe and protective. This is a much needed vaccine, as FVR is the most pathogenic of the respiratory diseases, causing severe upper respiratory infection and occasionally abortion. Feline picornavirus infections are milder than FVR, but if pneumonia develops secondarily the mortality can be high, especially in young kittens. Unfortunately, the many possible serotypes of FPI make development of a vaccine unlikely. The rest of the feline

¹FVR Vaccine,® Pitman-Moore, Washington Crossing, NJ.

respiratory disease agents have not been shown to be significant enough to warrant development of a vaccine.

Because there are so few vaccines available, the primary method of arrest of the diseases is control in catteries, animal shelters, and research facilities. This includes for the most part elimination of stress to the cats and establishing proper air flow in the room, preferably with low humidity. It is best to intersperse cats with dogs and isolate any coughing or sneezing cats. Further, disinfection of dishes and washing hands between handling cats is of value.

New cats should be isolated for at least two weeks and observed closely. This procedure will not detect chronic carriers, however. Since carrier queens may transmit the virus to the kittens, one could wean the kittens early while they are still protected by maternal antibodies.

Although the respiratory diseases cannot be distinguished clinically and are treated similarly the significant predomi-

nance of FVR and FPI, as opposed to pneumonitis, should be recognized. This suggests the possibility of using FVR vaccine to reduce the incidence of feline respiratory diseases where it is indicated, such as in catteries or pet shops. The other practical aspects of epidemiology, treatment, and control have been summarized according to the most recent data available.

Bibliography

- Bittle, J. "Feline Viral Rhinotracheitis (FVR) Vaccine Development", *Practicing Veterinarian*, Part I, July-Aug. 1974, pp. 14-15, Part II, Sept.-Oct. 1974, p. 9.
- Bittle, J. and Rubic, W. "Studies of Feline Viral Rhinotracheitis Vaccine". *VM/SAC*, Vol. 69, No. 12, Dec. 1974, pp. 1503-1505.
- "Feline Infectious Diseases Report", *JAVMA*, Vol. 158, No. 6, Mar. 15, 1971, pp. 955-973.
- "Feline Practice Survey—A Consensus Report by Practitioners". *Feline Practice*, Vol. 2, No. 4, July-Aug. 1972, pp. 32-40.
- Kahn, D. "Upper Respiratory Pathogens in Cats: How Close are we to a vaccine?" *Feline Practice*, Vol. 2, No. 4, July-Aug. 1972, pp. 22-29.
- Ott, R. "The Practitioner's Complete Guide to Upper Respiratory Infection in Cats", *Feline Practice*, Vol. 2, No. 4, July-Aug. 1972, pp. 10-21.
- Scott, F. Evaluation of a Feline Viral Rhinotracheitis Vaccine. *Feline Practice*, Vol. 5, No. 1, Jan.-Feb. 1975, pp. 17-22.
- Scott, F. and Gillespie, J. *Feline Viral Diseases*. *Scope*, Vol. XVII, No. 1, 1973, pp. 6-11.

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