

Feline Enteritis

BY C. D. STEIN¹

IN its disastrous effects on young animals and its high mortality rate, feline enteritis is the counterpart of distemper of dogs. Here is a description of the disease and an account of such control measures as are available.

FELINE ENTERITIS is an acute, specific, infectious, highly contagious disease of cats, usually young cats, commonly known as infectious gastroenteritis and feline distemper.² It is also referred to as croupous enteritis, epizootic enteritis, malignant panleucopenia, infectious feline agranulocytosis, and feline typhus. The disease, which is world-wide in distribution, occurs in all parts of the United States in cats of all breeds and at all seasons, but it appears to be most prevalent during the cold damp weather of early spring and late autumn. It is considered to be the most serious disease encountered in cats and takes its greatest death toll among kittens and young cats. It often occurs as an epizootic (corresponding to an epidemic among human beings) affecting and rapidly decimating the entire young cat population in certain districts. The occurrence of the disease has recently been reported by Torres (11) in wild as well as domestic cats in Brazil.

Feline enteritis is characterized principally by its sudden onset, highly contagious nature, rapid and violent course, profound alterations in the blood, and frequent fatal termination, and by its predilection for young cats. Although the symptoms are variable, those most characteristic are high fever, loss of appetite, enteritis (acute inflammation of the intestinal tract), a marked decrease of white blood cells, rapid loss of flesh, great depression, diarrhea, vomiting, and sometimes a discharge from the eyes and nose. Affected cats manifest extreme soreness of the abdomen and may assume a peculiar

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² The term, "feline distemper" is also used to designate a mild infectious disease of young cats, characterized by catarrhal inflammation of the mucous membranes, known as feline influenza. Kirk (5)² and Salsbery (10) consider feline distemper to be an entirely distinct disease. Hindle and Findlay (4), on the other hand, describe an infectious disease of cats due to a filtrable virus with symptoms similar to feline infectious enteritis as feline distemper.

³ Italic numbers in parentheses refer to Literature Cited, p. 1133.

characteristic position, lying flat on the abdomen with head lowered, forelegs spread laterally, and hind legs stretched out. Roughening of the coat, complete loss of appetite, sudden elevation of temperature, and depression are usually the first symptoms observed. These may be followed by severe diarrhea, the stool sometimes being streaked with blood, vomiting, extreme weakness, marked emaciation, complete exhaustion, and death.

The incubation period, that is, the time between exposure to the infection and the appearance of the first symptoms, is 5 to 6 days under experimental conditions and 6 to 8 days or longer in natural infection. The course of the disease is usually very rapid, affected animals sometimes dying in 24 to 48 hours, and in especially acute cases, particularly in kittens, it is often so rapid that death may occur before any well-marked symptoms develop. Cases of this type, particularly when several cats in the same neighborhood are similarly affected, are frequently mistaken by the owners for poisoning. The mortality is high, often exceeding 80 percent.

As a rule definite lesions, or tissue alterations, mainly in the intestinal tract, are observed on post mortem examination, though in some cases such lesions may be slight or lacking. Inflammation of the small and large intestines is usually present, varying in intensity from simple congestion to a well-marked hemorrhagic enteritis involving all or a portion of the intestinal tract. The mesenteric lymph glands (in the intestinal region) may be congested and show an infiltration of blood due to hemorrhages. Moderate congestion of the liver, spleen, and kidneys may also be observed in some cases.

Devitalizing influences that decrease the resistance of kittens, such as rickets, parasitic infestation (particularly hookworms), insanitary, poorly ventilated quarters, and undernourishment, are predisposing factors to feline infectious enteritis.

The causative agent is a filtrable virus. Verge and Cristoforoni (13) in 1928 were the first to establish this fact, and others have confirmed the finding.⁴

A highly infectious and acute disease of young cats, due to a filtrable virus, characterized by marked changes in the blood, with clinical symptoms of enteritis, and considered to be identical with feline enteritis, has been described under different names by various investigators,⁵ all of whom have pointed out that in addition to enteritis, leucopenia (a decrease in the white blood cells) is a more or less constant finding of considerable diagnostic importance in this disease.

As already noted, the disease frequently occurs as an epizootic and is so highly contagious that it spreads rapidly when once established. Natural infection may occur by direct contact of healthy with diseased cats or by exposure to contaminated quarters, bedding, utensils, or other articles that have been in contact with infected cats. Macchiavello and Bezerra Coutinho (9) were the first workers to present

⁴ Hindle and Findley (4) in 1932, Urban (12) in 1933, Leasure, Lienhardt, and Taberner (8) in 1934, and Salsbery (19) in 1938.

⁵ By Macchiavello and Bezerra Coutinho (9) as infectious adenomyelocytosis; by Lawrence and Syverton (6) as spontaneous agranulocytosis; by Lawrence, Syverton, Shaw, and Smith (7) as infectious agranulocytosis; by Hammon and Enders (2, 3) as malignant panleucopenia; and by Torres (11) as feline gastroenteritis.

evidence that fleas may harbor the virus, and recently Torres (11) reported evidence definitely indicating that fleas may play an important role in the spread of the disease.

According to Leasure, Lienhardt, and Taberner (8), who made an extensive study of this disease, the virus is found in the urine, feces, and blood and remains alive for a considerable length of time. They reported that virus kept under refrigeration at 42° F. and also virus kept at room temperature (50° to 85° F.) remained virulent for 91 days.

The successful immunization of cats against this disease under experimental conditions, either by the use of tissue vaccine treated with formalin (formalized) prepared from the organs of infected cats or by the simultaneous injection of feline infectious enteritis virus and homologous hyperimmune antiserum (prepared with material from cats), has been reported.⁶ As a result of studies on immunization against malignant panleucopenia (now considered identical with feline infectious enteritis), Enders and Hammon (1) reported evidence to indicate that resistance to the disease in susceptible cats can be induced by the injection of formalized suspensions of organs from infected cats. They also reported that the serum of cats that have recovered from the infection, as well as that of animals immunized against the disease, will protect susceptible cats for a limited time against subsequent exposure. Biological products (vaccines, antisera, and bacterins) are commercially available for use in the treatment and prevention of the disease. While the Department of Agriculture has carried on no experiments to determine the relative merits of these products, reports from the practicing veterinarians indicate that these biologics may have some value if properly applied.

From the field of small-animal practice it has been reported that: (1) Improvement is often noted in sick cats following the administration of repeated large doses of homologous feline enteritis serum and that the administration of such serum is the best prophylactic (preventive) measure for healthy cats during an epidemic of the disease. (2) If treatment with serum is commenced in the early stages of the disease before the temperature begins to drop, a large percentage of cases can be saved. For best results, treatment with a combination of homologous feline enteritis antiserum injected into the abdominal cavity and mixed antibacterial feline serum injected under the skin is recommended. (3) Complete protection of young kittens against the disease during hospital exposure can be assured by prophylactic doses of 2 to 3 cubic centimeters of serum obtained from immune adult cats that have been exposed to the disease.

No specific medicinal treatment is known for this disease. Affected cats should be isolated and placed in warm, dry quarters. If animals show an inclination to take nourishment, a diet of broth, milk, and raw eggs should be supplied. The administration of biologics and drugs for the treatment and relief of affected cats should be undertaken only by a qualified veterinarian.

In controlling outbreaks of the disease, immediate isolation of sick animals from healthy ones and a prompt and thorough cleaning and

⁶By Urbain (12). Leasure, Lienhardt, and Taberner (8), and Salsbery (10).

disinfection of premises are of first importance. To prevent new cats brought into the house from acquiring infectious enteritis after an outbreak, it is necessary to eradicate the infection from the premises. To accomplish this, it is essential that all objects that have come in contact with diseased cats, as well as the quarters occupied by them, be thoroughly cleaned and disinfected. All litter and bedding should be burned. A period of at least 2 to 3 months should elapse before restocking with healthy cats.

Since it has been definitely shown that fleas may transmit the disease from infected to susceptible cats, necessary steps should also be taken to eliminate flea infestation, both in the house and on cats.

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