Canine Distemper

Basics

OVERVIEW

- Contagious disease that appears suddenly (acute) or over a moderate amount of time (known as “subacute”), characterized by fever and a variety of signs involving the eyes, central nervous system, and respiratory, urogenital, and gastrointestinal tracts; often a fatal disease
- Caused by the canine distemper virus
- Affects many different species of the order Carnivora; mortality rate varies greatly among species

SIGNALMENT/DESCRIPTION OF PET

Species

- Most species of the order Carnivora—including dogs, fox, wolves, hyenas, weasels, ferrets, mink, raccoons, skunks, and civets
- Large cats in California zoos and in Tanzania

Mean Age and Range

- Young, especially unvaccinated, animals are more susceptible to infection than are adults

SIGNS/OBSERVED CHANGES IN THE PET

- Fever—first fever occurs 3–6 days after infection, may go undetected; second fever several days later (and intermittent thereafter), usually associated with discharge from the nose and eyes, depression, and lack of appetite (known as “anorexia”)
- Gastrointestinal and/or respiratory signs follow, often enhanced by secondary bacterial infection
- Central nervous system signs—occur in many infected dogs; often, but not always, after generalized (systemic) disease; depends on the virus strain; either sudden (acute) gray or white matter disease (“gray matter” is the nerve tissue of the brain and spinal cord that contains the nerve cell bodies; “white matter” is the part of the brain and spinal cord that contains nerve fibers covered with myelin, a fatty covering that increases conduction of nerve impulses)
- Gray-matter disease—affects the brain and spinal cord; may cause inflammation of the meninges (the membranes covering the brain and spinal cord; inflammation of the meninges known as “meningitis”), seizures, stupor, hysteria, and wobbly, incoordinated or “drunken” appearing gait or movement (known as “ataxia”); dogs may die in 2–3 weeks; some dogs recover (associated with prompt immune response), while others progress to develop white-matter disease; “gray matter” is the nerve tissue of the brain and spinal cord that contains the nerve cell bodies; “white matter” is the part of the brain and spinal cord that contains nerve fibers covered with myelin, a fatty covering that increases conduction of nerve impulses
• White-matter disease—variable signs of disease involving multiple locations of the central nervous system; commonly see weakness and wobbly, incoordinated or “drunken” appearing gait or movement (ataxia) secondary to spinal cord disease; occasionally may see twitching or contraction of a group of muscles (known as “myoclonus”); some dogs die 4–5 weeks after initial infection; some dogs may recover with minimal central nervous system injury
• Inflammation of the optic nerve (the nerve that runs from the back of the eye to the brain; condition known as “optic neuritis”) and lesions in the back of the eye (known as the “retina”) may occur
• Hardening of the footpads (known as “hyperkeratosis”) and nose—some virus strains; but relatively uncommon
• Abnormal development of the enamel layer of the teeth (known as “enamel hypoplasia”) after neonatal infection is common

CAUSES
• Canine distemper virus (closely related to the measles virus and the seal and dolphin distemper viruses)
• Incompletely altered, modified live canine distemper virus vaccines (rare)

RISK FACTORS
• Contact of animals that have not been vaccinated or have not responded to vaccinations with animals that are infected with canine distemper virus (dogs or wild carnivores)

Treatment

HEALTH CARE
• Inpatient treatment in isolation, to prevent infection of other dogs
• Supportive treatment
• Intravenous fluids—cases with lack of appetite (anorexia) and diarrhea
• Once fever and secondary bacterial infections are controlled, pets usually begin to eat again
• Carefully clean away discharges from the nose and eyes

ACTIVITY
• Limited

DIET
• Depends on the extent of gastrointestinal involvement

Medications
Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive
• Antiviral drugs—none known to be effective in treating canine distemper viral infections
• Antibiotics—to reduce secondary bacterial infection, because canine distemper virus decreases the ability of the dog to develop a normal immune response (known as “immunosuppression”)
• Medication to control seizures (known as “anticonvulsant therapy”)—phenobarbital, potassium bromide

Follow-Up Care

PATIENT MONITORING
• Monitor for signs of pneumonia or dehydration from diarrhea in the sudden (acute) phase of the disease
• Monitor for central nervous system signs, because seizures often follow

PREVENTIONS AND AVOIDANCE
• Routine vaccination against canine distemper virus is key to prevention and avoidance; series of vaccinations administered initially followed by periodic booster vaccinations, as directed by your pet's veterinarian
• Avoid infection of puppies by isolation to prevent infection from wildlife (such as raccoons, fox, skunks) or from canine distemper virus-infected dogs

POSSIBLE COMPLICATIONS
Secondary bacterial infections, frequently involve the respiratory and gastrointestinal systems
Possibility of occurrence of central nervous system signs for 2–3 months after discharge from the eyes and nose has subsided
Seizures
Death

EXPECTED COURSE AND PROGNOSIS
Depend on the strain of virus and the individual host response—dog may be infected, but have no signs of disease (known as a “subclinical infection”) or have signs of disease involving various areas of the body; the infection may be fatal or non-fatal
Mild central nervous system signs—pet may recover; twitching or contraction of a group of muscles (myoclonus) may continue for several months or indefinitely
Death—2 weeks–3 months after infection; mortality rate approximately 50%
Euthanasia—owner may elect euthanasia, if or when nervous system signs develop; indicated when uncontrollable seizures occur
Fully recovered dogs are not carriers, as they do not shed canine distemper virus

Key Points
Mortality rate is about 50%
Dogs that appear to recover from early signs (such as discharge from the eyes and nose) may later develop fatal central nervous system signs
Fully recovered dogs are not carriers, as they do not shed canine distemper virus
Routine vaccination against canine distemper virus is key to prevention and avoidance; series of vaccinations administered initially followed by periodic booster vaccinations, as directed by your pet's veterinarian

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