

Herpes Virus Infection in Dogs : A Cause of Puppy Death

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Canine herpesvirus is generally referred to as CHV, and is a leading cause of puppy deaths, especially in puppies one to three weeks of age. We have all heard of breeders saying something like this - 'The puppies were fine this morning, but then they stopped eating and died before I could do anything!' Anytime puppies die in this fashion, there is a reason to suspect CHV.

Transmission
Canine herpesvirus is a viral disease that affects many puppies, causing sporadic deaths and occasionally the death of an entire litter. The virus lives in the reproductive and respiratory tracts of male and female dogs and can be sexually transmitted. The virus persists in the female's vaginal secretions and the male's semen. As in many herpes infections found in other species, adult animals can live for years with no apparent signs; these are called 'asymptomatic carriers.' This means the adult male and female dogs can remain infected and transmit the disease for years while showing no signs of disease themselves.

Puppies can become infected several ways. The virus can cross the placenta and infect them while they are still within the uterus, or they may become exposed from vaginal secretions during birth. The virus can also become airborne from nasal secretions of the mother, so once born, the pup can actually inhale the virus while breathing. Puppies can easily spread the virus from one to another. Lastly, the virus can be transmitted by eating infected materials.

Symptoms

Once exposed, it generally takes about a week for symptoms to appear. With this in mind, you can easily see why 1 to 3 week-old puppies are at the highest risk. Severely infected individuals will become depressed, stop nursing, and cry. Their feces will be soft and yellow-green. Their livers enlarge and their abdomens are painful. The liver becomes damaged and can no longer function normally. Some puppies develop respiratory signs and nasal discharge. Others develop a rash on their abdomen. Hemorrhages such as nose bleeds and small bruises on the mucous membranes or skin may appear. Some puppies will show nervous system signs such as blindness and staggering. Puppies usually die within 24-48 hours of showing signs of disease.

Not all pups exposed at birth become ill, and many show no signs at all or develop only a slight congestion and recover within a few days. Puppies exposed after six weeks of age have a better chance of recovery. Older puppies develop the disease by coming in contact with the mother's infected, but normal-appearing, nasal secretions. Those that live often develop into carrier adults just like their parents.

It appears that the virus thrives best at a temperature of around 99°F, so this may help to explain why older puppies are at less risk since their body temperature is usually around 101.5°F, and that of younger puppies is lower.

Adult carriers typically exhibit no obvious symptoms, however, small blister-like lesions may occasionally be noted on the vaginal wall.

Making a diagnosis

Canine herpesvirus is one of the leading causes of death in newborn puppies. Once the above signs develop, death often follows in 48 hours. The disease spreads rapidly through the litter as infected puppies are highly contagious. We suspect many cases of herpes are wrongly diagnosed as disorders such as parvovirus and coronavirus.

Autopsies of deceased puppies by a veterinary pathologist will reveal the characteristic herpes lesions. Diagnostic hemorrhagic lesions will be found within the kidney and liver, and the lungs will usually be congested. The affected organs will have cells containing characteristic signs of the disease.

Treatment and prevention

Currently there is no specific treatment for canine herpes. All treatment is aimed at supportive care. Older puppies can be force-fed and treated with anti-diarrheal medication. The survival rate of puppies less than three weeks old is poor. Severely infected puppies will die rapidly. The remaining puppies should be kept warm (100°F) until the virus has run its course. It is hoped that a vaccination will be developed to protect against this disease.

As a preventive practice, one should make sure the environmental temperature of the puppies is kept warm with whelping boxes, heat lamps, etc.

In conclusion, anytime one sees upper respiratory infections in puppies less than 8 weeks of age, CHV should be considered. Also, CHV is a leading cause of death in 1 to 3 week-old pups, and even older puppies may die. The deaths will occur suddenly, with little or no warning, and one pup or even an entire litter may perish within a 24-hour period. This is especially disheartening when yesterday the litter appeared happy and healthy, and today some are ill or have already died. Remember, the mother may be a carrier and future litters may be affected unless she develops a natural immunity. There is no treatment for her or for the puppies.