Herpes is a viral disease of dogs both of respiratory and reproductive organs. This lecture presents diagnostic procedures and treatments.
Suspected Infected Pups Receiving Treatment
2 Deceased Pups
One Is Herpes Infected
Herpes Infected Pup
Pathologic Lungs
2nd Pup
Genetic Defect

Thursday, September 26, 13
Treated Herpes Survivors
7 Weeks Old
Infected Litter
4th Pup Infected with Herpes
Autopsy Confirms Herpes
HERPESVIRUS INFECTION IN

Fatal illness generally occurs in pups less than one month old; however, occasional cases have been observed in dogs as old as four months of age. Clinical features of the disease consist of the sudden death of apparently healthy puppies after a brief period of illness that usually lasts no more than 24 hours. Most commonly, pups are affected between the first and third weeks of life, with occasional fatal cases occurring after the third week. The disease is most common in puppies one to three weeks of age, but occasionally it occurs in puppies up to five weeks. Viremia is associated with the period during which the puppy’s temperature is optimal for Herpes virus replication (95° to 96° F). Healthy puppies become acutely ill, stop nursing, and cry continuously; death occurs within several hours following onset of signs. In puppies that recover, the virus may remain latent for several months, and shedding can recur following corticosteroid therapy. Diagnosis is based on clinical The Orient Express / June 1989 (first printed in 1965)

From a report by Leland E. Carmichael, D.V.M.
In a letter to the editor, Dr. John Smith raises concerns about the recent increase in health-related issues in the community. He argues that the pressure on healthcare providers to manage increasing patient loads has led to a decrease in the quality of care provided. Dr. Smith suggests that more resources need to be allocated to healthcare facilities to ensure adequate care for all patients.'
Deceased Herpes Litter
All dead pups should be autopsied. Cause of death cannot always be decided but best chance of finding cause.
Lesions of Kidneys and Intestines
Lungs & Stomach
There is a severe diffuse subacute and hemorrhagic bronchitis, bronchiolitis and interstitial pneumonia*. The other tissues are normal. The pneumonitis in this and littermate pup look like viral pneumononitis*
Lungs, Intestines & Stomach
Litter Deaths
HISTOPATHOLOGIC REPORT:

- There is a severe diffuse subacute bronchitis, bronchiolitis and interstitial pneumonitis. All other tissues are normal.

DIAGNOSIS: Pneumonitis
Lungs & Intestines
Lungs
Lungs
Lungs & Intestines
Lungs & Intestines
Kidney
Lungs & Stomach
Lungs & Intestines
Lungs & Intestines
Bloated Stomach & Kidney
Herpes abortion

• In the literature section of this disc you will find several fine articles on herpes abortions in dogs.
• This usually occurs at about 52 to 54 days of gestation.
• To date we have found no way to deal with this problem.
Aborted Pup
C-Section Herpes Pup
Aborted Pup
Kidney:
Severe autolysis with acidophilic intranuclear inclusions (in two cells)

Some large areas of kidney parenchyma were relatively intact enabling interpretation. A careful, detailed examination revealed the presence of herpes-compatible inclusions in only 2 cells. Normally, this small number of inclusions would not be clinically significant, however, the fact that this animal was aborted is strong secondary evidence of Herpes infection.
Other Causes of Death

- Distemper
- Hepatitis
- Parvo
- Toxoplasmosis
- E-coli
- Chlamydia
- Anasarca (walrus pup)
- Genetics
Anasarca
Purulent Chest
Parvo Death
Parvo Death
Intestinal Infection
E-Coli Infection
unknown
Enteritis
What do you see
HAPPY PUPPIES
TREATMENTS for pups at risk

- Dr. Bell, DVM
- Acyclovir Treatment

- Dr. Sears DVM
- Anti Viral Serum
Treating at risk litters prevention

INTERNATIONAL LABRADOR DIGEST

CANINE HERPES

Ron Bell, DVM - The Labradors of Borador

This article appeared in the first issue of the ILI) and is copyrighted - it may not be reproduced without written consent.
R. Bell DVM

- Weigh pup 2-3 lbs.
- ACYCLOVIR POWDER IN CAPSULES
- (mix 200 mg capsules in 10 cc of warm water. The powder will not dissolve but is suspended. Give ½ cc (10mg) to each pup very 6 hrs until 3 ½ weeks old.)
- Place in incubator
- Give fluids orally
Having saved pups from certain death does not guarantee that you will not see reproductive lesions in dogs before puberty. We see lesions in the prepuce (balanophthitis) and vaginal lesions. None of these will show signs of respiratory disease. Most survive.
Newborn pups from suspected kennels or dams with herpes virus can be treated with a subcutaneous shot of 1 cc of Antiviral Serum per pup immediately after birth and repeated in 24 hrs. This will reduce the death rate substantially.
Rx of Individual Sick Pups.

- Weigh pup 1 to 3 lbs
- Give 1 cc of **12 hr NDV induced serum** to pups very 12 hrs for 3 treatments
- **LASIX** one drop per Oz orally (to control lung edema)
- **KAON** one drop per Oz orally every 3 hrs (to control loss of K+)
- **CHLOROMYCETIN** 0.05 cc per Oz once (to control secondary lung infection)
- **GANCYCLOVIR** 0.1 cc per pup sub Q every 12 hr's.
- INCUBATOR 96* (keep in for 24 hrs)
- FLUIDS GIVEN ORALLY (sugar water works as well as formula)
Treated Survivor
Treated Survivor
Pound early Spayed Dog
5 months old
Vaginal Lesions Scoped
Vaginal Lesions
Vaginal Lesions
Rx of Acutely Infected Vaginal Lesions

- Vancyclovir given 4 times daily for one week.
- This will reduce but not eliminate vaginal lesions.
- Very Expensive
Herpes Unspayed Juveniles
Vaginal Discharge
Herpes Unspayed Juveniles
Herpes Unspayed Juveniles
vulvar lesion
Herpes Unspayed Juveniles
Vulvar Lesions
Herpes Unspayed Juveniles
Vulvar Lesions
Juvenile Infected Vaginas
Scoped Vesicles
Dogs Spayed before Estrus
Dogs Spayed before Estrus
Dogs Spayed before Estrus
Dogs Spayed before Estrus
Dogs Spayed before Estrus
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Thursday, September 26, 13
Dogs Spayed before Estrus
Dogs Spayed before Estrus
Dogs Spayed before Estrus

Thursday, September 26, 13
Dogs Spayed before Estrus
Dogs Spayed before Estrus
Dogs Spayed before Estrus
Acyclovir treatment of herpes vulva
Pre Treatment
Post Treatment
1 week
Preputial herpes in male
Preputial herpes in male
Scoped Prepuce
Preputial herpes in male
Scoped Prepuce
Juvenile Infected Vaginas
Scoped Vesicles
ASK THE BOARD
What is your recommendation for a prepubertal puppy with “puppy vaginitis”?  

- Spontaneous recovery usually occurs after the first estrous cycle in these cases. I often prescribe a dilute chlorhexidine solution to pacify the pet owner. In my experience, spaying the pet before the first estrus solves the problem.

Ronald E. Whitford, D.V.M.  Clarksville, Tennessee

88 Veterinary forum August 1997

- In my Opinion “this is contradictory advise”
Juvenile dogs with or without lesions
Juvenile dogs with or without lesions

DO NOT SPAY
Juvenile dogs with or without lesions

- Always allow **AT LEAST ONE** heat cycle before spaying.
- No effective treatment for Herpes after spaying.
- Cannot tell if they are infected when no lesions appear.
- Many Veterinarians will not agree.
- New Vaccines may help!
- Vancyclovir helps does not eliminate lesions.
Fax shows NEGATIVE IgG/IgM

<table>
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<th>Test Name</th>
<th>Outside Reference Range</th>
<th>Within Reference Range</th>
<th>Unit of Measure</th>
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<tr>
<td>CANINE HERPES IgG AB</td>
<td></td>
<td>NEGATIVE</td>
<td></td>
<td></td>
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<tr>
<td>CANINE HERPES IgM AB</td>
<td></td>
<td>NEGATIVE</td>
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</table>
Dear Dr. A. W. Sears,

Thank you for your interest in publishing your protocol on treating canine distemper virus infection within the *Journal of the American Animal Hospital Association*. I have *read your protocol summary titled Cellular Immunity Serum Protocol* and cannot accept your article as currently submitted. For publication consideration, information must follow the guidelines for authors as detailed in various issues of *JAAHA*. It is also imperative that any suggested, 'new' treatment recommendations be validated through appropriately designed and carried out research protocols before it is disseminated as a valid clinical treatment option for readership consideration. This includes ensuring that the research methodology used meet recognized standards of animal care (usually through the review and acceptance by standing committees on animal care at the respective institution where such investigative work is carried out). This latter point is especially relevant to your protocol because of the off-label use of Newcastle virus vaccine and the induction of shock in recipient dogs.

Unfortunately your article, as submitted, does not meet any of these requirements.

If I can be of any further assistance, please feel free to contact me, either through the e-mail address above or via AAHA at 800-252-2242; ext. 402.

Sincerely,

Walt Ingwersen, DVM, DVSc, Diplomate ACVIM Editor, *JAAHA*
Herpes damage in 4 mo old dog
Vaginal Drainage
Herpes Infected
Herpes Infected Abdominal Ascites
No Lesion Found
Interstitial Cystitis Herpes
Interstitial cystitis

- This disease responds to treatment
- Serum 3 cc per lb
- Penicillin ½ cc + prednisone 1 cc
- Repeat for 2-3 days.
- Condition clears.
- Strongly suspect herpes infection
Respiratory Form
Respiratory herpes

- Treat with serum 2 cc per kg every 12 hrs for 3 treatments.
- Highly contagious.
- Isolate any contact dogs and treat pre-emptively.
- New vaccine from Merial may help.
X-Ray of Lung with Herpes
Dear Dr. Sears,

I have been searching the internet trying to find out more about canine herpes virus. A friend lost 6 out of 7 puppies to the virus. I know for sure that it was the herpes virus because she had autopsies done.
Ganciclovir
Clyde S. Crumpacker, M.D.

GANCICLOVIR is a nucleoside analogue of guanosine, a homologue of acyclovir, and the first antiviral drug to be effective in the treatment of cytomegalovirus (CMV) disease in humans. It inhibits not only all the herpes viruses but also the transformation of normal cord-blood in-monocytes by Epstein-Barr virus. In this review, I outline ganciclovir's mechanisms of action and resistance and discuss the clinical effectiveness of intravenous and oral ganciclovir.
LABORATORY INVESTIGATION REPORT

Steven Thomason, D.V.M.
565 West Avenue I
Lancaster, CA 93534

Case Record No. 119557
Report Date 12/18/84

species Yorkshire Terr. S

necropsy tissues

HISTOPATHOLOGICAL REPORT

Many alveoli in the lung are flooded with blood, with one fibrin clot noted. Neutrophils and macrophages are loosely packed in otherwise patent alveoli at one edge of the section. The liver has only the usual glycogen accumulation seen in young animals. The spleen, kidney, and bladder are unremarkable.

Diagnosis: Acute hemorrhagic pneumonia
Accession No. IRAB43639660  Species Canine
Doctor SEARS  Breed English Setter
Received 05/11/2003  
Reported 05/23/2003 09:01 AM

**Test Requested**

**Results herpes Canine**

Herpes Negative @1:4

TEST PERFORMED AT CORNELL DIAGNOSTIC LABORATORY

This dog has vaginal Herpes lesions
CANINE HERPES IgG AB X CANINE HERPES IgM AB

NEGATIVE NEGATIVE

THS DOG HAS VAGINAL HERPES
Serum is toxic to cell cultures & so it is not possible to determine if the titer is positive at lower dilutions.

TEST PERFORMED AT CORNELL DIAGNOSTIC LABORATORY
A serological study of canine herpes virus-1 infection in the English dog population

M. J. Reading, H. J. Field