

Diagnostic Insights

Kansas State Veterinary Diagnostic Laboratory
www.ksvdl.org



Accredited by the American Association of Veterinary Laboratory Diagnosticians

July 2013

Porcine Epidemic Diarrhea Virus (PEDV)

Dr. Dick Hesse

General disease facts:

- PED has been present in Europe and Asia since 1971, but had not previously been reported in the U.S. before 2013.
- PEDV was first discovered in Kansas in 2013.
- PEDV is associated with porcine coronavirus.
- Clinical signs include: vomiting and occasional diarrhea in sows and gilts AND severe diarrhea and vomiting in nursing and recently weaned pigs.
- Clinical signs of PED are indistinguishable from the epidemic form of the disease caused by a different porcine coronavirus, Transmissible Gastroenteritis Virus (TGE).

- There is no cross-protection between the TGE and PED coronaviruses.
- PED is a pig-only disease and does not affect other species, including humans, and it is not a food safety concern.
- Within naïve pig populations, morbidity will likely be near 100 percent, and mortality may range from 50-100 percent in nursing pigs; mortality is reported to be 1-3 percent in fattening pigs and negligible in adults.
- Incubation time is typically less than 36 hours but virus may be shed in feces for up to 11 days.
- Laboratory testing is required for a definitive diagnosis.

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www.ksvdl.org



Canine Sebaceous Adenitis

Dr. Bill Fortney and Dr. Gordon Andrews

The sebaceous glands are located in the dermis and secrete an oily/waxy substance called sebum, to provide moisture and lubricate the skin and hair coat. Sebaceous adenitis (inflammation of the sebaceous glands) is an inflammatory skin disease of unknown cause found in young to middle aged adult dogs and occasionally in cats, rabbits and horses.

Speculated causes include: heritable and developmental inflammatory destruction of sebaceous glands, cell-mediated immune destruction, a cornification abnormality leading to sebaceous duct and gland inflammation, anatomic defect in sebaceous glands leading to lipid leakage and foreign body inflammatory response, and a defect in lipid metabolism leading to a cornification abnormality and sebaceous gland destruction.

The affected sebaceous glands exhibit an acute and chronic inflammation resulting in abnormal keratinization of the skin, a dryness and/or greasiness to the affected skin and coat, and various degrees of alopecia and scaliness. Initially, the affected glands are inflamed, but as the condition progresses, the inflammation eventually leads to permanent destruction of the affected glands.

The condition is usually not pruritic unless there is a secondary bacterial component.

The disease is thought to have a significant genetic factor.

The most commonly listed

dog breeds include the Standard Poodle, Samoyed, American Akita, Vizsla, English Springer Spaniel, Chow Chow, and Weimaraner.

The specific clinical appearance of the skin changes are somewhat dependent on the severity of the disease, the type of hair coat (long coat / short coat) and the breed involved. The slowly progressive disease tends to be



Figure 1

Continued on Page 3

PORCINE EPIDEMIC DIARRHEA VIRUS | continued from Page 1

Diagnostic testing:

- KSVDL is performing Virus isolation (\$35.50/sample) and PCR (\$30.00/sample) on feces and fresh intestinal samples.
- PCR is recommended as the initial screening test

Control & prevention:

- Stringent biosecurity and disinfection procedures are the most effective means of prevention and control.
- Infection is primarily via the fecal-oral route, but short distance aerosol transmission is possible.
- The virus can remain stable in the environment and can be transferred easily on boots, tires, vehicles, and other fomites.

- PEDV is susceptible to Clorox™, Virkon S™, Tek-Trol™, and 1 Stroke Environ™.

Confirmed cases:

- An updated spreadsheet of cases can be found on the AASV website at:

http://www.aasv.org/aasv%20website/Resources/Diseases/PED/LABSUMTOT_WK_STATE.pdf

CANINE SEBACEOUS ADENITIS | continued from Page 2

bilaterally symmetrical affecting the face, head, pinnae, and trunk (Figure 1). The affected areas have patches of alopecia with adherent scaling forming follicular casts or fronds (Figure 2). The associated hairs are dull, dry, brittle, or broken. Some of the short breeds may have a “moth-eaten” appearance to their coat.

Depending on the presentation, the differentials should include: bacterial folliculitis, demodicosis, dermatophytosis, idiopathic seborrhea, follicular dysplasia, and an endocrinopathy.

Diagnosis:

Diagnosis is made by histopathology. Multiple punch biopsies of affected and unaffected skin are recommended to evaluate adequate numbers of pilosebaceous units. Early lesions are characterized by inflammation that centers on sebaceous glands and ranges from mild to severe and is granulomatous to pyogranulomatous. Figure 3 illustrates multifocal inflammation adjacent to hair follicles in areas where sebaceous glands are located. Figure 4 is a higher magnification showing infiltration of the sebaceous glands by small numbers of neutrophils with plasma cells, lymphocytes, and few macrophages located around the periphery. Chronic or late stage disease is characterized by very mild parafollicular inflammation in areas previously occupied by sebaceous glands, or no inflammation with a complete absence of sebaceous glands. Documentation of an absence of sebaceous glands in a minimum of three 6-8 mm punch biopsies is recommended for confirmation of a diagnosis of sebaceous adenitis. Other microscopic changes include epidermal hyperplasia, hyperkeratosis, follicular plugging with keratin and formation of casts or fronds of keratin that surround hair shafts and protrude above the skin surface.

Treatment:

Case management is often difficult. Response to therapy varies depending on the breed, the severity, and stage of disease. In all cases, topical emollients and keratolytic (antiseborrheic) shampoos will be adventitious. In moderate to severe cases, the use of omega-6 / omega-3 fatty acids; or synthetic retinoids; or even cyclosporine therapy may provide some additional benefits. However, when the sebaceous gland has been permanently destroyed, the prognosis is poor and response to therapy much less effective.

References:

Muller and Kirk's Small Animal Dermatology, 5ed. W. B. Saunders; Philadelphia. pp 917 - 922

Gross, TL, Ihrke, PJ, Walder, EJ, Affolter, VK. Skin Diseases of the Dog and Cat: Clinical and Histopathologic Diagnosis, 2nd edition. 2005 Blackwell Science Ltd. pp 186-188



Figure 2

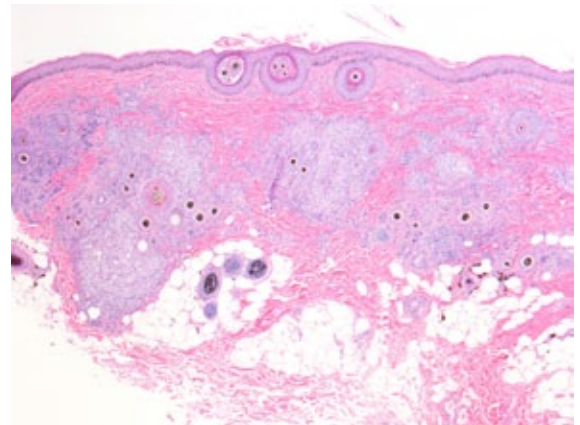


Figure 3

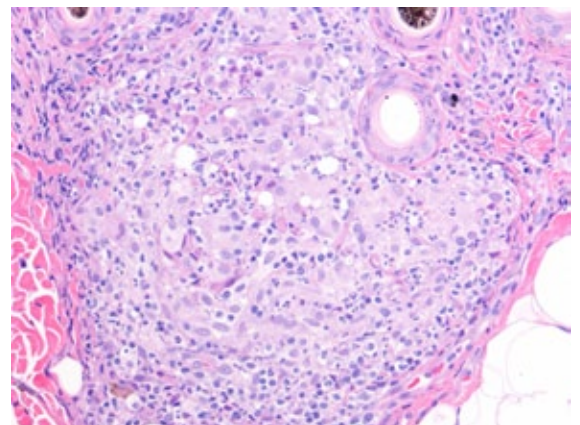
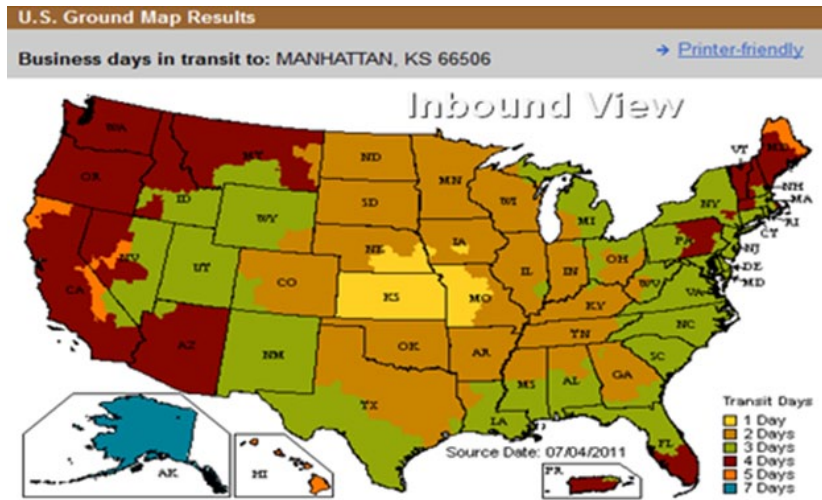


Figure 4



UPS Flat Rate Shipping Discount Expansion!!



The KSVDL now has a discounted flat rate shipping charge of \$6 for samples weighing less than 15 lbs. being shipped from KSVDL clients living in Kansas and portions of Nebraska and Missouri to the diagnostic laboratory (yellow area on the map).

The rest of the contiguous U.S. areas also qualify for this discount, the only difference is these shipments are not guaranteed overnight delivery. The expected transit time from these areas are listed at the bottom of the map. For many diagnostic specimens, the expected transit times will be acceptable, if packaged appropriately.

Summary of discount shipping program:

- ✓ Any package < 15 lbs.
- ✓ \$6 per package
- ✓ Free UPS pickup
- ✓ Guaranteed overnight delivery from designated area (yellow) on map.
- ✓ This offering does NOT include Saturday delivery
- ✓ Flat rate is available for all other areas of the U.S.—no overnight guarantee
- ✓ Ship normal UPS GROUND

For more information concerning this shipping discount program, please call the KSVDL at 866-512-5650 and ask for Leah or Holly.

Appropriate Sample Packaging for Shipment

Most veterinary diagnostic samples fall under the Category B Infectious Substance category as set forth by the U.S. Department of Transportation.

Samples in this category are required to be shipped using a three-layer container system as described below:

1. Primary Container
Blood tube, trich pouch, etc.
2. Secondary Container
Primary container wrapped in absorbent material (paper towels, newspaper, etc.) and placed in a plastic bag
3. Outer Container
Primary and secondary container placed in a cardboard box in an appropriate container to maintain sample integrity/quality – some couriers require a cardboard outer container for Styrofoam coolers.

To ensure rapid, reliable shipping to the KSVDL, please use our pre-made UPS shipping labels. Using these labels guarantees overnight delivery (except Saturday delivery) and costs only \$6.00 for packages under 15 lbs.

For shipping label information, please call KSVDL Client Care toll free at 866-512-5650 and ask for Holly or Leah or Kelsey.

For further information about sample handling and shipping please visit our website at: www.ksvdl.org.



Canine Brucellosis ME Tube Agglutination Test (ME-TAT)

Dr. Bill Fortney and Dr. Jen Lehr

Canine Brucellosis remains an important infectious reproductive disease in Kansas and the nation. Brucellosis testing is a critical component in both the diagnosis and prevention of this disease.

Traditionally an in-house rapid slide agglutination test (RSAT) card test has been used as a screening tool for diagnosing canine Brucellosis. The KSVDL used the D-Tec CB™ canine Brucellosis antibody test produced by Synbiotics Corporation for several years. However, since the discontinuation of the **D-Tec CB™** kit, the KSVDL (along with other diagnostic laboratories) were forced to forward our canine brucellosis samples to the National Veterinary Services Laboratories (NVSL) in Ames, IA for testing. The NVSL uses a mercaptoethanol tube agglutination test (ME TAT). While an excellent serological test, the increased numbers of samples received by the NSVDL has resulted in significant delays in reporting of the final test results to our clients.

In recognition of the importance of timely reporting of final test results, the KSVDL serology laboratory has developed and validated a ME TAT antibody test. The ME TAT test can detect antibodies to *Brucellosis canis* as early as 4 weeks post-infection. The high sensitivity of this test makes it a good screening test; however any positive results should always be confirmed with additional diagnostics.

- Cost: \$8.20 per sample
- Schedule: Monday and Wednesday
- Results: 1-2 business days

For more information on all of our Canine Brucellosis tests, fees, schedules, and sample submissions, please visit our website at www.ksvdl.org

KSVDL Specializations

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RECEIVING & NECROPSY: DR. KELLI ALMES
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SEROLOGY: DR. RICHARD HESSE
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TOXICOLOGY: DR. DEON van der MERWE
785-532-4333

VIROLOGY: DR. RICHARD HESSE
785-532-4457



Bovine Trichomoniasis Veterinarian Certification

Veterinarians are now able to become certified online to collect and submit samples for Trich testing in Kansas.

The certification program contains three parts: 1) a review of Trichomoniasis, appropriate sample collection and handling; 2) a summary of the new proposed Kansas Trichomoniasis regulations; and 3) a multiple choice test.

Veterinarians must view the first two parts of the program AND receive a 100 percent grade on the

multiple choice test. The test may be taken multiple times.

Veterinarians who complete the online certification will be notified by the KDAH of their certification status.

Certification is valid for 5 years.

The certification program can be found at:
www.ksvdl.org and follow the link Veterinarian Trich Certification

Developing, Delivering Accurate, Innovative Diagnostic Services

The mission of the Kansas State Veterinary Diagnostic Laboratory (KSVDL) is to develop and deliver accurate, innovative, and timely diagnostic and consultative services to the veterinary and animal health community while providing support for teaching, training and research programs.

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Continuing Education

www.vet.ksu.edu/CE/Conference.htm

Nov. 9, 2013

KVMA Fall Conference

Test Results and Schedules

Lab results may be accessed online 24 hours a day, 7 days a week!

To set up an account go to:

www.ksvdl.org

KSVDL will be closed on the following days:

Labor Day: Monday Sept. 2, 2013

To receive this newsletter by e-mail, contact: DlabOffice@vet.k-state.edu