DiagnosticInsights
Kansas State Veterinary Diagnostic Laboratory
www.ksvdl.org

Accredited by the American Association of Veterinary Laboratory Diagnosticians January 2014

3rd Annual KSVDL Conference on Animal Diagnostics and Field Applications

Program:

- **Immune Development in the Young Calf: Review and Update**
  Dr. Amelia Woolums, University of Georgia
- **Vaccination and Other Management Tools for Optimal Immunity in Preweaning Calves, Part I**
  Dr. Amelia Woolums, University of Georgia
- **Vaccination and Other Management Tools for Optimal Immunity in Preweaning Calves, Part II**
  Dr. Amelia Woolums, University of Georgia
- **Using Titers to Help Diagnose Reproductive and Respiratory Disease in Cattle**
  Dr. Dick Hesse, KSVDL
  Dr. Brian Lubbers, KSVDL
  Dr. Gary Anderson, KSVDL
- **Panel Discussion on Autogenous Vaccines**
  Dr. Mike Apley, KSU-CVM
  Dr. Randall Spare, Ashland Veterinary Center
  Dr. Mark Spire, Merck Animal Health
  Dr. Doug Stine, Newport Laboratories
  Dr. Amelia Woolums, University of Georgia

Date: Saturday February 8, 2014

Time: 9 a.m. to 3 p.m.

Place: Hilton Garden Inn, Manhattan, KS

Registration is $100

For more information, please contact:

Office of Continuing Education and Events
College of Veterinary Medicine
Trotter 2-A
Manhattan, KS 66506
vmce@vet.k-state.edu
785-532-4528

Inside this issue:

To set up an account go to:
www.ksvdl.org

Canine Brucellosis Case Report, Part I

Dr. Jen Lehr

Canine brucellosis remains an important disease throughout the Midwest including Kansas. Often the clinical signs of brucellosis may be mistaken for other diseases that are encountered more often. It is important to remain vigilant and test all suspect canines and breeding animals. Early identification of dogs with canine brucellosis is essential to prevent disease spread to all adjacent breeding stock, pet dogs, and humans. Although typically thought of as a disease of breeding dogs or dogs housed in kennels, the disease may occur in pet canines as well. This was demonstrated by a recent case at KSVDL.

A veterinarian in Kansas was presented with a nine-month old mixed breed intact male dog. The dog was recently adopted from out of state, and unfortunately a history was not available. The new owner bred dogs and although this canine was not to be part of her breeding stock, she requested a canine brucellosis test prior to the introduction of this dog into her kennel.

To the surprise of all involved, the dog tested positive by tube agglutination testing (TAT). This result was confirmed through testing at the National Veterinary Service Laboratory (NVSL). Although there are many unanswered questions about this case it illustrates the importance of testing all dogs that may be in contact with breeding animals. This dog showed no clinical signs of brucellosis and would have exposed the entire breeding kennel had it not been identified as positive for *Brucella canis*.

Brucella canis is a gram-negative intercellular organism, and it does not survive long outside of its host. Transmission of this disease is through body fluids, particularly aborted tissues and vaginal fluid. A canine may become infected by sniffing or licking infected fluids or tissues, through sexual contact, or in-utero. After infection the bacterium exhibit tropism for reproductive organs. These are immune privileged sites and allow the infection to be maintained for a long time--even for the life of the dog. Many infected canines are asymptomatic, but they can become bacteremic and clinical signs may be associated with these relapses.

Reproductive problems are the most frequently encountered clinical manifestation of the disease. Female

Continued on Page 3

Figure 1. Scrotal dermatitis in a male canine due to Brucella canis infection. (Photo courtesy of Dr. Bill Fortney, KSVLD)

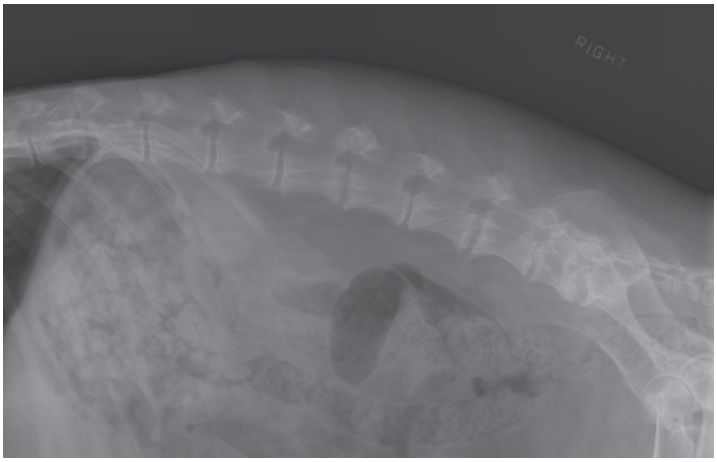

Figure 2. Diskospondylitis in a Brucella canis infected canine. In this case the discs and endplates of vertebrae T12-13, L3-4, L5-6, L6-7 and L7-S1 are affected. (Courtesy of Dr. David Biller, radiologist VHC)

CANINE BRUCELLOSIS | continued from Page 2

canines may not conceive or they may abort. A female may also give birth to clinically normal but infected pups. Clinical signs in males include infertility, epididymitis, orchitis, testicular atrophy, and scrotal dermatitis. (Figure 1 - previous page)

Canine brucellosis rarely causes fever, malaise, generalized lymphadenitis, uveitis or diskospondylitis. (Figure 2 - previous page) These clinical signs are not specific to canine brucellosis and there are a host of differential diagnoses that are likely more common in pet dogs. *Brucella canis* is an important pathogen to rule out in cases of fever of unknown origin and diskospondylitis.

Canine brucellosis is a reportable disease in Kansas. All positive tests run at veterinary diagnostic labs or veterinary clinics in the state are to be reported to the Kansas Department of Agriculture: Division of Animal Health.

BVD Cow-Calf Economic Model Available Through KSVDL

The KSVDL has developed an economic computer model veterinarians can use as a tool to assist their cow-calf producers to estimate the costs and benefits from BVD biosecurity programs.

As with most decisions on the cow-calf operation, biosecurity programs, disease test selection, and testing program composition must be based on economics. As practitioners know, sometimes it is difficult to persuade some producers to modify biosecurity management practices to better assure herd health without some estimate of the potential costs and benefits.

This **Economic** model can be customized to match each producer's cow-calf operation management practices. It allows the producer to enter general herd information concerning both present and contemplated biosecurity practices and testing programs. From these inputs, the model will then provide estimates of the potential economic impact of the selected management practices and biosecurity programs.

If you have questions about using this model with your clients, please contact Dr. Gregg Hanzlicek @ 785-532-4853 or gahanz@vet.k-state.edu.

KSVDL Bovine Respiratory PCR Panel

KSVDL is now offering a PCR panel for both viral and bacterial bovine respiratory pathogens.

The pathogens contained in these panels are:

Bacterial: Mannheimia haemolytica, Pasteurella multocida, Histophilus somni, Bibersteinia trehalosi

Viral: Mycoplasma bovis, BRSV, BCoV, IBR, BVDV

Appropriate samples: lung or lymph tissue or deep nasal (pharyngeal) swabs

Both viral and bacterial PCR panels can be completed from a single tissue sample or swab.

It is important that bacterial swabs NOT be used when submitting for PCR—the gel contained in these swabs inhibits the PCR reaction.

The swabs should be placed in either viral transport media or sterile saline.

Feline Miliary Dermatitis

Dr. Gordon Andrews and Dr. Bill Fortney

Feline Miliary Dermatitis (also known as feline allergic miliary dermatitis, miliary eczema, papulocrusting dermatitis, scabby cat disease) is a common and usually easily recognized dermatological condition seen in cats. Miliary dermatitis is not a specific disease per se, but rather is a hypersensitivity cutaneous reaction pattern characterized by the development of numerous discrete erythematous papules that are covered by tiny red-brown crusts. (Figure 1) The crusted papule is a primary lesion and is not the result of self-trauma. The term "miliary" is derived from the small "millet seed" appearance and feel of the skin lesions. In cats with intact haircoats, the lesions are often more easily palpated than seen.

Pruritis is usually present, and depending on the level of pruritis exhibited and/or "grooming", various degrees of alopecia and excoriation of the skin can be present. While the lesions can occur anywhere, the papular-crusts are typically concentrated on the dorsal lumbosacral area (tail bed), caudomedial thighs, back of the neck, ventral abdomen/groin region.

Histologically, the lesion consists of an area of epidermal hyperplasia (acanthosis) covered by a discrete often tent shaped serocellular crust (Figure 2). There is edema of the epidermis (spongiosis), which can progress to erosion and ulceration with necrosis of the epidermis and infiltration of the epidermis and superficial follicular epithelium with neutrophils and eosinophils, sometimes forming eosinophilic vesicopustules. The superficial to mid-dermis typically contains perivascular to interstitial infiltration with eosinophils and mast cells (Figure 3 - next page).

A diagnosis of miliary dermatitis is not etiologically specific, but rather is an indication of hypersensitivity dermatitis. The hypersensitivity may be due to fleas, atopy, food hypersensitivity, drugs, cheyletiellosis, dermatophytosis; demodicosis, ear mites, and endoparasites. Flea bite allergy/hypersensitivity is the most common cause of feline miliary dermatitis so the initial diagnostic work-up should include a thorough flea examination. When fleas are found or suspected, a

Continued on Page 5

Figure 1: Crusted erythematous papules on a cat with miliary dermatitis.

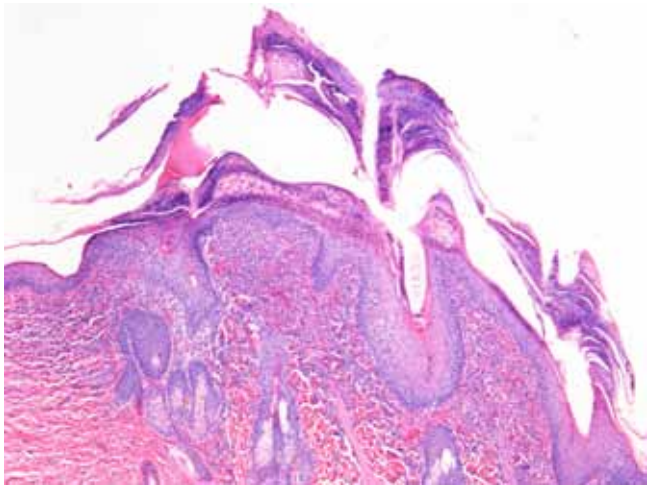

Figure 2: Histopathology of miliary dermatitis. Focal area of epithelial hyperplasia covered by a serocellular crust. The superficial dermis is infiltrated by mixed inflammatory cells including mast cells and eosinophils. H&E stain.

DERMATITIS | continued from Page 4

vigorous long-term flea control program combined with sufficient client education is critical for overall treatment success. If evidence of fleas is not found, then a skin scraping, cytology of a pustule, fecal floatation, a dermatophyte culture, allergy testing, and possible skin biopsy are in order. It is important to remember that histopathology can characterize the lesions as representing hypersensitivity dermatitis, but cannot determine what the patient is allergic to. Finding eosinophils in a skin cytology is good supportive evidence for hypersensitivity dermatitis. Lesion distribution can be diagnostically helpful in determining the cause of the hypersensitivity. Flea allergy tends to affect the neck, dorsum and tail base. Lesions confined to the head and neck are suggestive of food allergy.

Unfortunately in many cases, the patient is only treated empirically and the actually cause is not determined or even pursued. Symptomatic therapies for feline miliary dermatitis include oral fatty acid supplements, antihistamines, systemic corticosteroids, or Atopica® for cats (Novartis).

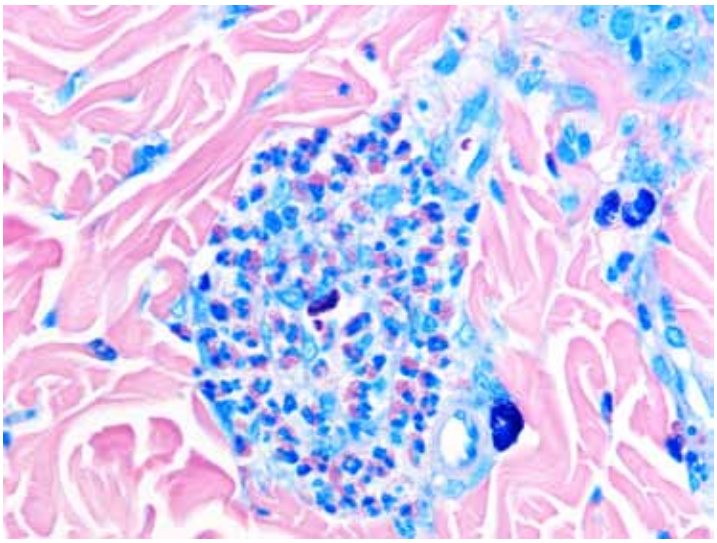

Figure 3. Histopathology of miliary dermatitis. The dermis contains perivascular to interstitial infiltrates of eosinophils and mast cells. Giemsa stain.

KSVDL Specializations

DIRECTOR: DR. GARY ANDERSON
785-532-4454

BACTERIOLOGY: DR. BRIAN LUBBERS
785-532-4012

COMPANION ANIMAL OUTREACH: DR. BILL FORTNEY
785-532-4605

CLINICAL PATHOLOGY: DR. LISA POHLMAN
785-532-4882

COMPARATIVE HEMATOLOGY: DR. GORDON ANDREWS
785-532-4459

FIELD INVESTIGATIONS: DR. GREGG HANZLICEK
785-532-4853

HISTOPATHOLOGY: DR. JAMIE HENNINGSON
785-532-4461

IMMUNOLOGY: DR. MELINDA WILKERSON
785-532-4818

MOLECULAR DIAGNOSTICS: DR. RICHARD OBERST
785-532-4411

PARASITOLOGY: DR. PATRICIA PAYNE
785-532-4604

RABIES: SUSAN MOORE, MS, MT(ASCP)SBB
785-532-4200

RECEIVING & NECROPSY: DR. KELLI ALMES
785-532-3995

SEROLOGY: DR. RICHARD HESSE
785-532-4457

TOXICOLOGY: DR. DEON van der MERWE
785-532-4333

VIROLOGY: DR. RICHARD HESSE
785-532-4457

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.

1800 Denison Avenue
Manhattan, KS 66506

Phone: 785.532.5650
Toll Free: 866.512.5650

Continuing Education

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

Feb. 8, 2014:
Third Annual Conference on Animal Diagnostics and Field Applications: Vaccinology

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 hours:
Closed May 26, Memorial Day

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

KANSAS STATE UNIVERSITY