

Cutaneous Habronemiasis in a Horse

By Dr. Gisell Cino

A one-year-old Quarterhorse was presented to the KSUVHC with a two-month history of two large, ulcerated and necrotic cutaneous masses located in the right axillary region and the ventral thorax, respectively. The masses were partially removed 2 weeks prior to presentation and grew rapidly since then. The masses measured approximately 10 cm in diameter and had been treated with antibiotics and topical medications, but never healed.

Grossly, the masses were raised and ulcerated. The center of the ulcer was necrotic and covered by yellowish-tan granulation tissue. The margins of the ulcer were rounded (Fig.1). On cut sections, the masses were friable, and yellow-white caseous or gritty material was felt through the tissue.

Impression smears from the lesions were submitted for cytopathology and revealed high numbers of eosinophils, along with fewer neutrophils and occasional lymphocytes, consistent with eosinophilic and neutrophilic inflammation.



Figure 1.

Biopsies from both masses were submitted to the KSVDL for microscopic examination. The epidermis over the affected areas is extensively ulcerated and covered by a serocellular crust of fibrin, erythrocytes, eosinophils, and cell debris (Fig 2, asterisk). The remaining epidermis is hyperplastic. The dermis is extensively infiltrated by large numbers of intact and degranulated eosinophils, epithelioid macrophages, plasma cells, and fewer multinucleated giant cells surrounding variable sized flame figures (Fig 2, black arrowhead) and cross sections of nematode larvae (Fig. 2, black arrow). Flame figures are composed of hypereosinophilic collagen fibers (collagenolysis) with cell debris and are occasionally mineralized (Fig 2, insert).

Larvae measure ~50 µm in diameter, have an external cuticle with spines (Fig 3, black arrows), coelomyarian musculature, a muscular esophagus, and intestine. Some dead larvae have mineral deposits along the cuticle.

The microscopic lesions are characteristic of cutaneous habronemiasis, a condition caused by the aberrant deposition of larvae of the spirurid nematodes *Habronema majus* (microstoma), *H. muscae*, and *H. megastoma* by transmitting flies. Common sites of habronemiasis in horses include the legs, ventrum,

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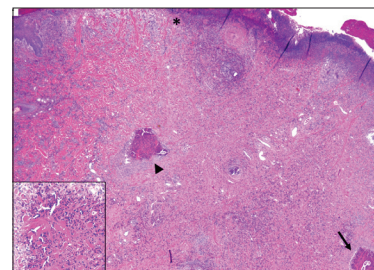


Figure 2.

5th Annual KSVDL Continuing Education Conference

February 6, 2016 • Bluemont Hotel • Manhattan, Kansas

8:00 am: Registration

8:50 am: Welcome: Dr. Gary Anderson

9:00 am: Dermatoses of the Paws and Claws: *You can lick these hands-down!* - Dr. Dana Liska

9:50 am: Break

10:00 am: Controversies and Dilemmas in Veterinary Allergies and Infections - Dr. Dana Liska

10:50 am: Break

11:00 am: Case Presentations of Common Dermatoses: *Bring your phone. It's interactive!* - Dr. Dana Liska

11:50: Lunch and Special guest presentations:

KSU College of Veterinary Medicine Update: Dr. Tammy Beckham

USDA update on Small Animal Exports: Dr. Kim Kirkham

KSVDL Mobile Apps: Mr. Justin Wiebers

Core Vaccine Diagnostic Testing: Dr. William Fortney

1:00 pm: Parasites & Pruritus: A Practical Approach: Dr. Dana Liska

1:50 pm: Break

2:00 pm: Feline Alopecia - Dr. Mary Bagladi

2:50 pm: Questions & Answers

3:00 pm: Adjourn

Approved CE:

**6 Hours of
Small Animal
Dermatology**

For more information call the
Continuing Education Office at
785-532-4528 or visit
www.vet.k-state.edu/KSVDL-Conf/.

Featured Speakers:



Dr. Dana A. Liska received her Doctor of Veterinary Medicine from Kansas State University. Following graduation she completed an internship in medicine, surgery, and critical care at Mission MedVet in Mission, Kansas. Dr. Liska then practiced general, small animal medicine for four years in Helena, Montana. In 2004 she began a dermatology residency at the University of Florida College of Veterinary Medicine. Upon completion of her residency she remained at the University of Florida CVM as a clinical instructor of Dermatology until she moved to the Dallas area to join the Animal Dermatology Referral Clinic. She gained Diplomate status in the American College of Veterinary Dermatology in 2006. Currently she practices at the Animal Dermatology Referral Clinic in Grapevine TX.



Dr. Mary Bagladi-Swanson received her Doctor of Veterinary Medicine from Kansas State University. She then completed a Dermatology Residency at Cornell University. She gained Diplomate status in the American College of Veterinary Dermatology in 2006. Dr. Bagladi-Swanson is Clinical Associate Professor in the Kansas State University College of Veterinary Medicine.

Canine Brucellosis

Dr. William Fortney

Best Practices for *Brucella canis* Prevention and Control in Dog Breeding Facilities, was produced by the USDA United States Department of Agriculture Animal and Plant Health Inspection Service.

This “best practices” document presents a compilation of knowledge garnered from currently available science, technology, population medicine, and biosecurity strategies surrounding the management options of *Brucella canis* infections.

The authors were a group of eight knowledgeable veterinarians who commonly manage cases and lecture on Canine Brucellosis including three faculty from the Kansas State Veterinary Diagnostic Laboratory. Dr. Craig J. Mabray– Kennel Specialist, USDA/APHIS/AC, APHIS Center for Animal Welfare lead the project.

Canine Brucellosis topics include: Pathogenesis; Clinical Signs; Zoonotic Information; Population

Medicine and Biosecurity Considerations; Cleaning and Disinfection; Various Diagnostic Testing; Kennel Screening; Positive Kennel Testing; Re-homing Considerations; Internet Resources; and References.

The authors recommend that laboratory standards be developed for all currently utilized and future diagnostic tests used to identify *B. canis* infection in dogs. They also recommend the implementation of quality control proficiency testing of the currently available tests to validate accuracy, consistency, sensitivity and specificity.

View at: https://www.aphis.usda.gov/animal_welfare/downloads/brucella_canis_prevention.pdf

KSVDL Canine Brucellosis Newsletter References:

2011: January, March

2012: March

2013: July, September

2014: January, March

Continued from page 1

prepuce, urethral process of the penis, and medial canthus of the eyes. Affected horses develop a hypersensitivity response to the larvae characterized by extensive eosinophilic infiltration. Lesions are rapidly progressive and proliferative and consistently pruritic.

Since the gross findings of cutaneous habronemiasis may resemble those of pythiosis, exuberant

granulation tissue, botryomycosis, equine sarcoid, and squamous cell carcinoma, the definitive diagnosis requires biopsy and histologic examination of tissue sections by a pathologist.

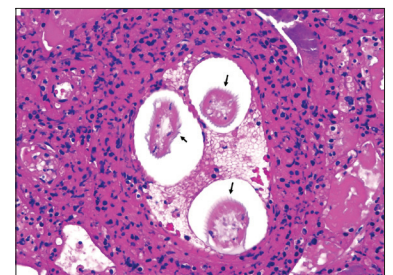


Figure 3.

KSVDL Diagnostic Medicine Internship

- Extensive training in Clinical Pathology methods and interpretations
- Scheduled rotations through other KSVDL laboratories for familiarization with testing procedures and training in test-result interpretations

For more information, visit: ksvdl.org/about/internship-program.html

KSVDL Welcomes Dr. Giselle Cino



We are pleased to announce that Dr. Giselle Cino has joined the KSVDL as an anatomic diagnostic pathologist.

Dr. Cino received her DVM at National University of Asuncion, Paraguay. Since 2010 she has participated in the combined PhD-Residency training program in Anatomic Pathology at KSU in the

Department of Diagnostic Medicine/Pathobiology and Kansas State Veterinary Diagnostic Laboratory, so many of you will already be familiar with Dr. Cino. She obtained her ACVP board certification in September 2014 and is in the final stages of the PhD program.

Her research is focused on characterizing a line of pigs with severe combined immunodeficiency (SCID). Dr. Cino's diagnostic interests are in food animal species with a particular emphasis in diseases of swine.

KSVDL on YouTube

We have posted new videos on the KSVDL YouTube® channel covering the following topics:

- Tissues for Bovine Abortion Diagnosis
<https://www.youtube.com/watch?v=xlqHjIQ3Sps>
- Deep Pharyngeal Swab From Live Cattle
<https://www.youtube.com/watch?v=WB3luk1nQjY>
- Bovine Lung Sampling for Bacterial Culture
https://www.youtube.com/watch?v=Ilz_QiXX0II
- Bovine Lung Sampling for PCR Testing
<https://www.youtube.com/watch?v=8fiBz8yKI30>



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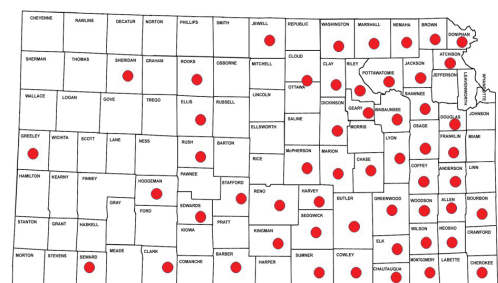
[www.youtube.com/c/
KansasStateVeterinaryDiagnosticLaboratory1](http://www.youtube.com/c/KansasStateVeterinaryDiagnosticLaboratory1)

Diagnostic Disease Trends Maps for Kansas

Updated weekly at www.ksvdl.org!

Disease trend maps include:

- Anaplasmosis
- Canine Brucellosis
- Canine Leptospirosis
- John's
- Rabies
- Rocky Mountain Spotted Fever
- Trichomoniasis
- Tularemia



KSVDL Personnel Activities

Previous Activities:

- Dr. Gary Anderson attended the annual meeting of the American Association of Veterinary Laboratory Diagnosticians (AAVLD) and U.S. Animal Health Association (USAHA) where he chaired the Strategic Planning Committee and co-chaired the AAVLD/USAHA Committee on Diagnostic Laboratory and Veterinary Workforce Development October 22-28.
- Dr. Melinda Wilkerson presented Flow Cytometry and Clonality Cases to Demonstrate Diagnostic Rewards and Challenges at the ACVP/ASVCP/STP annual meeting in Minneapolis.
- The paper titled, Bayesian Geostatistical Analysis and Ecoclimatic Determinants of *Corynebacterium pseudotuberculosis* Infection among Horses by Drs. Courtney Boysen, Elizabeth G. Davis, Laurie A. Beard, Brian V. Lubbers, Ram K. Raghavan was published in PLoS. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0140666>
- Dr. Kelli Almes participated in the KSU Student Chapter of the American Association of Bovine Practitioners rounds and necropsy wet-lab.
- Dr. Gregg Hanzlicek with practitioner Dr. Russ Van Meter conducted a Johne's Risk Assessment for a North Central Kansas cow-calf producer.

Upcoming Activities:

- Dr. Anderson will be participating in a swine research coordination meeting sponsored by the recently established Swine Health Information Center (SHIC) November 17 and 18 in Chicago. The Center's Executive Director, Dr. Paul Sundberg will convene a meeting of USDA and veterinary diagnostic laboratories to discuss and plan emerging and foreign pathogen research that will be supported by the SHIC.
- Dr. Ben Hause will be presenting Metagenomic Analysis, Uses for the Swine Veterinarian at the North Carolina Swine Veterinary Conference in Raleigh, North Carolina.
- Dr. Ben Hause will be presenting a poster titled Metagenomic Analysis of the Virome Associated with Respiratory Disease in Mexican and North American Cattle at the Center of Excellence for Emerging and Zoonotic Animal Diseases Annual Conference in Nebraska City, Nebraska.
- Dr. Ben Hause will present Discovery of a Novel Putative Atypical Porcine Pestivirus in Pigs in the United States at the Conference for Research Workers in Animal Diseases in Chicago, Illinois.
- Dr. Ben Hause will presenting a series of talks titled Research That Matters at the North American PRRS Symposium in Chicago, Illinois.
- Dr. Gregg Hanzlicek will present Anaplasmosis for the Cow-calf Producer at the North Central Kansas State Research and Extension meeting in Beloit, Kansas.
- Dr. Jianfa Bai presented ORF5 Sequencing Indicated PRRS Strain Shifting in the Field at the 96th Annual Conference of Research Workers in Animal Disease in Chicago, Illinois.
- Dr. Gregg Hanzlicek will be presenting BRD Resistance Trends at Kansas State Veterinary Diagnostic Laboratory at the Cattle Feeders Roundtable in Garden City, Kansas.
- Dr. Gregg Hanzlicek will present an Anaplasmosis Informational Discussion at the combined McPherson County, Reno County, Harvey County, and Marion County K-State Research and Extension Meeting in Inman, Kansas.
- Dr. Gregg Hanzlicek will present Johne's Disease Basics for Cow-calf Producers at the Larned Veterinary Clinic's Client Appreciation Dinner in Larned, Kansas.
- Dr. Jianfa Bai will present Co-detection of Different Genotypes of FMDV, ASFV and CSFV with a High-Throughput MassTag System at the Center of Excellence for Emerging and Zoonotic Animal Diseases Annual Conference in Nebraska City, Nebraska

Available Tests

Bovine Respiratory PCR Panel - FALL DISCOUNT

From now through December, KSVDL is offering a 20% discount on the bacterial and viral respiratory PCR panels. The bacterial panel detects *M. haemolytica*, *P. multocida*, *H. somni*, *M. bovis*, and *B. trehalosi*. The viral panel detects, BVDV, BRSV, BCoV, IBR, and includes *M. bovis*.

The test can be completed on either tissue (lymph node or lung) or nasal/pharyngeal swabs. Only one sample is required as a single sample can be utilized for both the viral and bacterial PCR panels. The swab must be either a sterile swab in 0.25 ml of sterile saline or a swab in viral transport media or used with the Copan-Eswab™ system.

A “gel” bacterial swab is not acceptable.

Fall Discount Cost: \$34.00 for either bacterial or viral PCR panel or \$68.00 for both panels.

Bovine Abortion Tissue PCR Panel

KSVDL is now offering a panel that includes testing for five *Leptospira* serovars (*L. canicola*, *L. grippotyphosa*, *L. hardjo*, *L. icterohaemorrhagiae*, *L. pomona*), IBR, BVD type 1 and 2, and *Neospora caninum* in fetal tissue.

Specimens to submit

Fresh tissues that include: placenta, lung, kidney, spleen, skeletal muscle, brain, liver

Days tested: M-F

Estimated turnaround: 1-2 days

Cost: \$42.00

Bluetongue (BT) and Epizootic hemorrhagic disease (EHD) PCR

KSVDL is now offering a PCR panel that includes testing for bluetongue virus and epizootic hemorrhagic virus, which can affect multiple species including sheep, goats, cattle, buffalo, and deer.

The signs of this disease can be mistaken for other vesicular diseases such as vesicular stomatitis (VS) and foot and mouth disease (FMD). KSVDL recommends if a vesicular disease is recognized by a practitioner that they immediately call their state veterinarian.

Specimens to submit: 1-2 ml of EDTA blood (purple top) or 1.0 gram of fresh spleen in a sterile preservative free container.

Days tested: M-F

Estimated turnaround: 1-2 days

Cost: \$42.00

For more information on these test options, please contact KSVDL Client Care at clientcare@vet.k-state.edu or 866-884-3867.

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Twitter.com/KStateVDL



bit.ly/KSVDLYouTube

Developing and 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.k-state.edu/education/continuing/

December 3-5, 2015

Academy of Veterinary Consultants

Kansas City, Missouri

<http://www.avc-beef.org/>

January 16-20, 2016

North American Veterinary Conference

Orlando, Florida

<https://navc.com/conference/>

February 6, 2016

**5th Annual KSVDL Continuing
Education Conference**

Manhattan, Kansas

<http://www.vet.k-state.edu/education/continuing/>

For more information call the Continuing Education
Office at 785-532-4528.

Test Results and Schedules

**Laboratory results available
online, all the time!**

Holiday Schedule:

Thanksgiving: Closed: Thursday, November 26
and Friday, November 27;

Open: Saturday, November 28

Christmas: Closing at noon: Thursday,
December 24;
Closed: Friday, December 25;
Open: Saturday, December 26

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

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