

Diagnostic Insights

Kansas State Veterinary Diagnostic Laboratory
www.ksvdl.org



Accredited by the American Association of Veterinary Laboratory Diagnosticians

March 2014

Epitheliotropic lymphoma

Epitheliotropic lymphoma, also referred to as mycosis fungoides or epitheliotropic T cell lymphoma is a progressive disease characterized by neoplastic infiltration of the epidermis and adnexa. It is a disease of older dogs and cats with no sex or breed predilection. The clinical course varies from a few months up to two years.



Figure 1: Eleven year old pug dog with epitheliotropic lymphoma. The hair is clipped in an area to show the mildly erythematous and scaly skin.

The etiology of the disease is unknown, but the observation that epitheliotropic lymphoma predominately develops in areas commonly affected with allergic conditions, and that some dogs have a history of chronic allergic dermatitis has

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

New PEDV IFA Test Available!

The Kansas State Veterinary Diagnostic Laboratory is now offering an IFA test for PEDV.

Sample: serum

Test days: Monday through Friday

Estimated turnaround: 3-5 days

Cost: \$15.00 per sample

The list of possible titer results:

<1:20, 1:20, 1:40, 1:80, 1:160, 1:320, 1:640, 1:1280, 1:2560, >1:2560

For more information please contact: Dr. Dick Hesse at 785-532-4457 or rhesse@k-state.edu

EPITHELIOTROPIC LYMPHOMA | continued from Page 1

given rise to the hypothesis that chronic antigenic stimulation may initiate a clonal expansion of neoplastic T cells.

The clinical presentation is highly pleomorphic, and can mimic any inflammatory skin disease. The disease has been subdivided into 4 clinical categories based on clinical and gross lesion presentation. Category 1 is “exfoliative erythroderma” and is characterized by generalized erythema, scaling, loss of pigmentation

and alopecia. This category resembles many chronic inflammatory exfoliative skin diseases. Lesions can occur anywhere on the body but most commonly involve the head and trunk. The typical clinical history we receive is a patient with a chronic progressive dermatitis which is nonresponsive to repeated rounds of antibiotic treatment and perhaps partially responsive to steroid treatment. Pruritis is variable when present and can range from mild to severe. Differential diagnoses include sarcoptic mange, atopy, food allergy, vasculitis, and diseases of abnormal cornification. Figure 1 (on page 1) illustrates an 11-year-old pug dog with the exfoliative category of epitheliotropic lymphoma. The clinical history provided was that the dog had non-pruritic scaly skin and poor hair growth. Category 2 is “mucocutaneous localization” and is characterized by erythema, depigmentation, alopecia, erosion and ulceration occurring at mucocutaneous junctions of the mouth, planum nasale, eyelids, anorectal junction, vulva, and prepuce. Differential diagnoses include autoimmune diseases and erythema multiforme. Category 3 is “solitary or multiple plaques or nodules” that may coalesce, are usually erythematous, scaly or crusted and can erode or ulcerate. Lesions may regress as others develop. Differential diagnoses include other cutaneous neoplasms and inflammatory plaques and nodules. Category 4 is “ulcerative disease of the oral mucosa” and

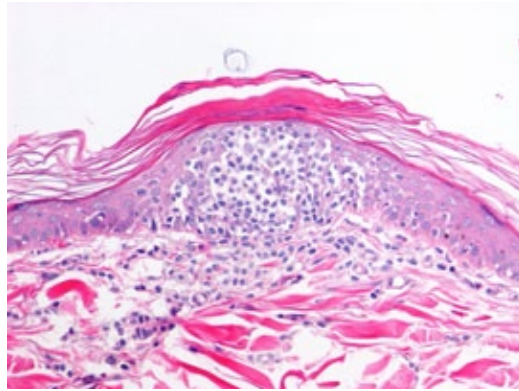


Figure 3. Immunohistochemical staining of the skin from the same patient showing infiltration of CD3 positive T cells (brown staining) into the epidermis, superficial dermis, and the apocrine and sebaceous epithelium.

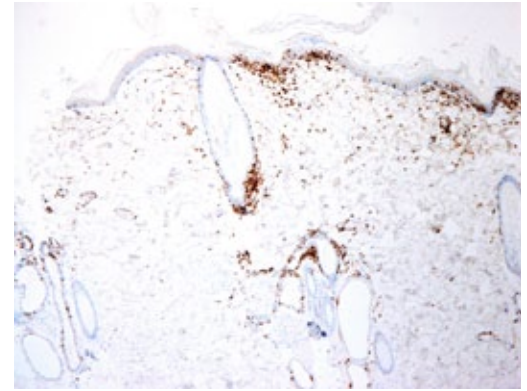


Figure 2. Photomicrograph of the skin from the same patient showing focal infiltration of the epidermis and superficial dermis with neoplastic lymphocytes. The skin surface is covered by moderate amounts of loose to compact keratin.

affects the gingiva, palate or tongue. Ulcers may occur in areas that are palpably thickened or apparently normal mucosa. Differential diagnoses include chronic stomatitis of any etiology and oral autoimmune skin disease.

Diagnosis is by histopathology. Histologic findings are also variable depending on the form and stage of disease, but the key unifying diagnostic feature is infiltration of the epidermal or mucosal epithelium, hair follicle epithelium, and apocrine and sebaceous epithelium by neoplastic lymphocytes (Figure 2). Immunohistochemical staining confirms that the infiltrating neoplastic lymphocytes are T cells (Figure 3).

The prognosis for epitheliotropic lymphoma is poor in spite of treatment. Consultation with a veterinary oncologist is recommended for the most current therapeutic recommendations.

**Follow the link to the
KSVDL YouTube™ Channel!!!**

<http://www.youtube.com/channel/UCtx-llIXqj5PAMQYryXaRhA>

Join us on Facebook!!



Canine Brucellosis Case Report, Part 2

There are several options for the diagnosis of canine brucellosis. Test selection should be based on the nature of the case and the client's intended use of a dog. A canine brucellosis serologic tube ME agglutination test should be used to screen dogs prior to introduction to a breeding colony. In these cases it is most important to identify a dog as negative. This test is highly sensitive in detecting *Brucella canis* antibodies. Antibodies to *B. canis* take 30-45 days to develop after infection so in cases of suspected clinical disease, if a negative result is obtained, the test should be repeated after sufficient time for the immune system to respond. If a positive result is obtained where it is not expected then a different test should be used to confirm the presence of brucellosis before a decision is made to withdraw the dog from the breeding population. Tube agglutination testing is also approved for exporting dogs or semen to most countries. Blood culture of *B. canis* is considered the gold standard for diagnosis of infection. If the culture is not collected in a sterile fashion other faster growing bacteria will over-grow *B. canis*, which grow slowly. This will lead to the culture being called negative because the other bacteria obscure the *Brucella* colonies. Also cultures may be negative in some dogs harboring *B. canis* because of the intermittent bacteremia in the chronic stages of the disease. PCR testing also detects *B. canis* in whole blood samples. Sterile collection is less important, as this test detects RNA and DNA of the organism not their ability to grow. It is limited by the intermittent bacteremia that is one of the hallmarks of this disease. Overall we find about 50% more positive animals with PCR testing compared to culture.

Treatment of *B. canis* infection remains a controversial topic. There is evidence that most dogs never completely clear the disease even with appropriate antibiotic therapy. Dogs that are positive via serology testing (tube agglutination) should be confirmed with either PCR or culture. Dogs are that infected with *B. canis* should not be used for breeding. Male dogs should be castrated and female dogs spayed. If treatment is to be undertaken for a pet dog the client must understand the zoonotic risk. Although

human infection with *B. canis* is not common, it is possible. Clients should be instructed to follow proper hygiene when handling dogs and especially when dealing with aborting bitches.

Canine brucellosis is an important topic whether you work with pet dogs or breeding dogs. This infection can be a silent threat to the health of your canine patients.

** Canine brucellosis is a reportable disease in Kansas. All positive tests results are to be reported to the Kansas Department of Agriculture: Division of Animal Health.

KSVDL now offers both AGID and ELISA testing for Equine Infectious Anemia

AGID

- Test days: Monday, Tuesday, Wednesday
- Estimated turnaround time: 36-48 hours
- Sample must be received by 2 p.m. for same day set up
- Price: \$9.00 per sample

ELISA

- Test days: Monday through Friday
- Estimated turnaround time: 24 hours
- Sample must be received by 2 p.m. for same day results
- Price: \$15.00 per sample

ELISA will be performed on samples arriving with submission forms containing NO test selection.

If you have questions, please call Dr. Gregg Hanzlicek at 785-532-4853 or gahanz@vet.k-state.edu



Free Full Text Journal Articles Available for KSVDL Clients

Many practitioners do not have access to or have to pay for access to full text journal articles. The KSVDL is now offering free full text journal articles from almost any journal as a service to our clients.

As a KSVDL client, if you have articles which you either do not have access or free-access to full text and would like to read them, we will provide a copy at no charge.

Please send your request to: Gregg A. Hanzlicek at either 785-477-2001 (call or text) or gahanz@vet.k-state.edu with the appropriate information.

We will then send the article either as an email attachment or a printed hard copy through regular mail.

How to Request Articles and Searches from the KSUCVM Veterinary Medical Library

As veterinary medical practice becomes more complex, veterinary practitioners are finding the need to do library research before attempting a new treatment or procedure on a patient. Sometimes an article is recommended to the practitioner in a report sent by a veterinary specialist or diagnostic laboratory. The Veterinary Medical Library at Kansas State University's College of Veterinary Medicine frequently gets questions from practitioners for literature searches and copies of articles on many topics in veterinary medicine. Carol Elmore at the Veterinary Medical Library has a fee-based service called Library Research Services which provides searching and delivery of article requests at nominal costs. No search or request is too large or too small. Carol Elmore can be reached by calling the library at 785-532-6006 or emailing her at libresearch@vet.k-state.edu. More information about these library services can be viewed on the Internet at <http://www.vet.k-state.edu/depts/library/info/research.services.htm>.

Veterinarians may prefer to do their own literature searches using the National Library of Medicine's PubMed website at www.pubmed.gov. PubMed is a free service of the National Library of Medicine that provides access to over 22 million MEDLINE citations back to the 1940's plus other citations not indexed in MEDLINE. Although PubMed doesn't index every veterinary journal (currently about 120 veterinary and laboratory animal science journals) it's a good place to start doing research. Carol is happy to answer questions about using PubMed and can be contacted at 785-532-6006.

It is 'Criation' Time



Spring birthing season for camelids has begun. We would like to remind you that KSVDL offers testing to determine adequate passive transfer in crias by radial immunodiffusion (RID). Radial immunodiffusion is the most accurate measurement technique for IgG.

IgG is the antibody most associated with passive transfer of antibodies for dam to cria. Passive transfer occurs most efficiently in the first 24 hours of life. **Therefore samples to detect failure of passive transfer should be collected at 24-48 hours after birth.** This test can also be used to screen adult animals suspected of being immunodeficient.

Sample: 1 ml serum (red-top tube)

Estimated Result Time: within 24 hours of receipt of sample (except on Fridays)

Cost: \$39/sample

Contact person: Dr. Melinda Wilkerson by phone at 785-532-4818 or by e-mail: wilkerns@vet.k-state.edu.



New Swine Tests!!

The KSVDL is now offering PCR tests for Porcine Torovirus and Porcine Deltacoronavirus.

Test specifics

- Species: Porcine
- Samples: feces, fecal swabs, intestine or intestinal contents
 - o Samples can be shipped in a clean zip lock baggy or specimen tube, no transport media is needed
 - o Samples should be shipped on ice to arrive overnight
- Testing days: Monday through Friday
- Result reporting: Positive, negative, week positive with Ct values

For more information, please contact Jianfa Bai at jbai@vet.ksu.edu or 785-532-4332 or KSVDL Client Care at clientcare@vet.k-state.edu or 866-512-5650.

KSVDL Diagnostic Internship

The Kansas State Veterinary Diagnostic Laboratory (KSVDL) invites applications for two 1-year term internship positions. Suitable candidates must have a Doctorate of Veterinary Medicine and an interest in Diagnostic Medicine with a focus on Clinical Pathology. Candidates must demonstrate excellent written and verbal communication skills as well as attention to detail, and practice experience is preferred.

Training in the position will consist of a rotating schedule to include experience within each individual laboratory within KSVDL. Approximately 50 percent of the time after-hours duties will be necessary and include assisting in the Necropsy & Receiving area and setting up microbiologic cultures.

For more information about these positions, please contact Dr. Lisa Pohlman at lpohlman@vet.k-state.edu or 785-532-4882 or Dr. Gregg Hanzlicek at gahanz@vet.k-state.edu or 785-532-4853.

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.

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Continuing Education

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

March 30, 2014

Frank W. Jordan Conference

May 31 – June 3, 2014

76th Annual Conference for Veterinarians
Hilton Garden Inn and Conference Center
– Manhattan, Kansas

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 26th Memorial Day
Closed July 4th Independence Day

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