



DIAGNOSTIC INSIGHTS

MARCH 2018

Dr. Richard Hesse Receives Howard Dunne Memorial Award



Dr. Richard Hesse

Dr. Richard Hesse, professor in the Department of Diagnostic Medicine and Pathobiology in the College of Veterinary Medicine, was presented with the Howard Dunne Memorial Award at the 49th annual meeting of the American Association of Swine Veterinarians (AASV) on March 5 in San Diego, California. This award is given annually to an AASV member who has made a significant contribution and rendered outstanding service to

the AASV and the swine industry.

Dr. Hesse also serves as director of diagnostic virology at the Kansas State Veterinary Diagnostic Laboratory (KSVDL). As director and researcher, Dr. Hesse's most recent focus has been on vaccine development for PCVAD (porcine circovirus2d-associated disease) and the pathobiology of the porcine enteric coronaviruses-porcine epidemic diarrhea virus (PED) and porcine deltacoronavirus (PDCoV). He currently is interested in developing rapid diagnostic assays and vaccines for zoonotic, foreign animal and emerging/re-emerging diseases. He has been on the faculty at Kansas State University since 2006.

When asked what it meant to receive the Howard Dunne Memorial Award, Dr. Hesse responded, "I am blessed to be able to work

with so many talented and dedicated people across the swine industry. To be recognized by them is the highest honor I have ever received and it means more to me than anyone will ever know."

"KSVDL is proud of Dr. Hesse's accomplishments for the swine industry and his additional areas of dedication that have improved veterinary diagnostics," said Dr. Jamie

Henning, interim director of the Kansas State Veterinary Diagnostic Laboratory. "As a vital team member of KSVDL, his dedication to diagnostic service and research is appreciated by the KSVDL family. I could not imagine a more deserving person for this honor."

Dr. Hesse's scientific career began during his undergraduate education when he assisted in college laboratories at Huron College, as well as in the local medical center. He expanded his laboratory experiences

Continued on bottom of page 5

In this Issue

Dr. Hesse Receives Award	1
Carcinoma in Cats	2
Recent EIA Incident in Kansas	3
Neonatal Diarrhea	4
Poultry Expert Joins KSVDL	4
New Videos and Bovine Tool	5
KSVDL Personnel Activities	6
CE and Holiday Schedule	7

Accredited by the American Association of Veterinary Laboratory Diagnosticians

TO SET UP AN ACCOUNT GO TO:
www.ksvdl.org/accounting-and-billing/



Cutaneous Squamous Cell Carcinoma In Cats: Associated Factors

By: Dr. Charan Ganta

Squamous Cell Carcinoma in Cats

Cutaneous squamous cell carcinoma (SCC) in cats is one of the most common malignant skin tumors with an incidence rate of 15 to 48%. The wide range in incidence is due to marked variability in reported geographical distribution in these cats. Lesions often present on the nasal planum, eyelids and ear tips, which are areas with minimal hair (Figure 1). There is no breed predilection, but often short-haired cats and those 5 years and above are more prone. It has been shown that white and piebald ventral coat color cats have the highest incidence of SCC, with white cats being 13 times more prone to invasive cutaneous SCC.

Associated Factors in Pathogenesis

It is well documented in both humans and cats that in the majority of cases (80% in cats) UV light plays an important role in the pathogenesis of cutaneous SCC. A mutation in the p53 tumor suppressor gene was demonstrated in about 53% of cutaneous SCCs in cats. In addition, feline papillomavirus 2 was detected in 80% of the SCCs in cats, suggesting a

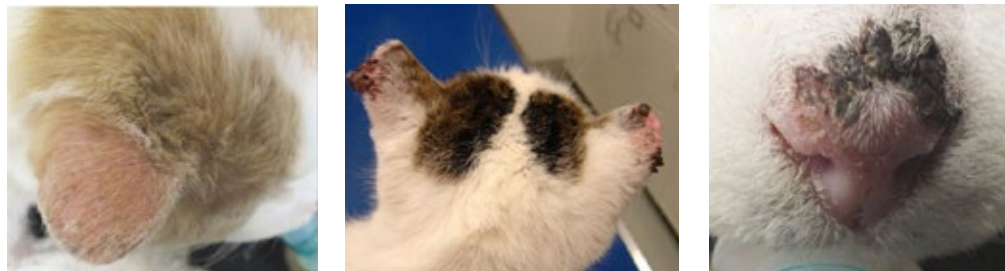


Figure 1: (from left) Pinna showing early actinic changes. Squamous cell carcinoma of the ear tips. Squamous cell carcinoma of the nasal planum lesions. Images: *Journal of Feline Medicine and Surgery* 15, 401-407 and 10, 593-599

Figure 2

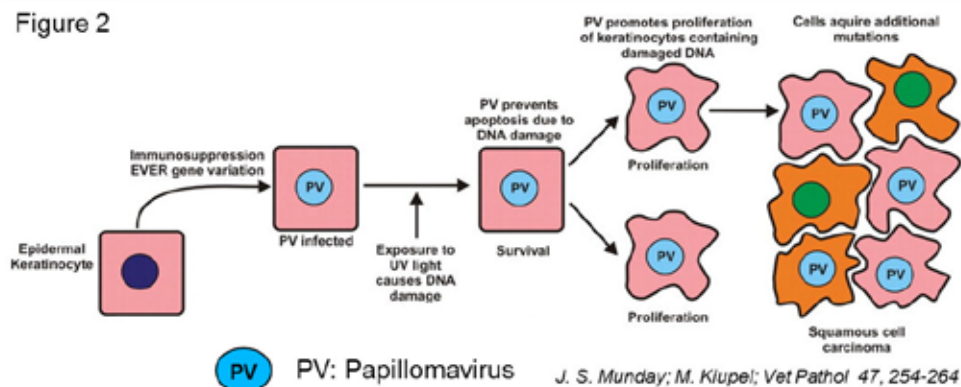
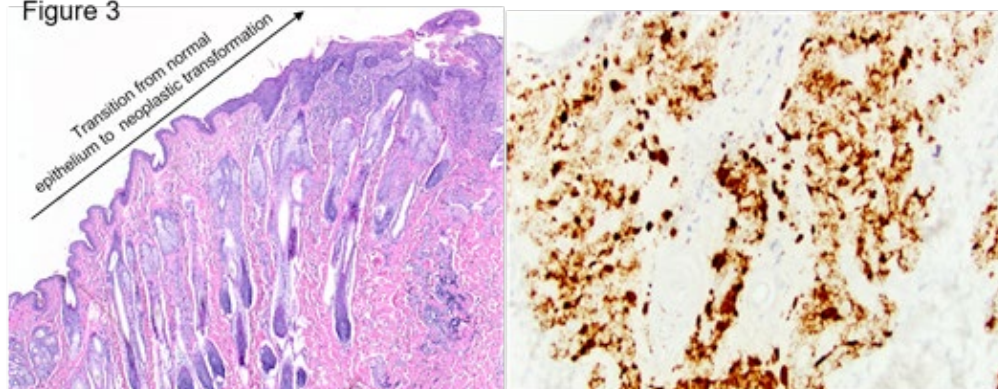


Figure 3



Invasive Squamous Cell carcinoma, H&E

Papillomavirus antigen detection, IHC

possible associated role of feline papillomavirus in causing SCC (Figure 2).

Biopsy and Histopathology

A definitive diagnosis of squamous cell carcinoma can

only be achieved through a surgical biopsy of the skin lesion. Characteristic proliferation and invasion of dysplastic squamous epithelial cells

Continued on page 3



Recent EIA Incident In Kansas

Dr. Justin Smith, KDA Animal Health commissioner recently stated: "A properly completed Coggins test form that is filled out in its entirety is vital and required for an Equine Infectious Anemia result to be a valid official test. This has never been more evident than during the recent 2017 EIA incident in Southwest Kansas."

Coggins testing reminder: To increase animal disease trace-ability, samples submitted to KSVDL for Equine Infectious Anemia (EIA) testing must be accompanied with a fully completed EIA submission (Coggins test) form.

KSVDL will no longer be able to report the results submitted with incompletely filled-out forms until the forms are returned to the submitting veterinarian for completion.

If you have any questions, please call KSVDL Client Care at 866-512-5660

DR. HESSE (*cont'd from page 1*)

and classical virology training while serving in the army at Fort Detrick [United States Army Medical Research Institute of Infectious Diseases (USAMRIID)], where he worked with highly hazardous pathogens in total containment facilities (BSL-4). After leaving the army, Dr. Hesse immediately began graduate studies at South Dakota State University with a focus on bovine respiratory viruses.

Dr. Hesse received a master's degree from South Dakota State University in 1983 and a doctorate from the University of Nebraska in 1993. He has authored or co-authored more than 100 publications, presentations, and/or patents and has led the development of at least 12 USDA-licensed vaccines.

Dr. Hesse worked for nine years as the manager of virology biologics for the R&D department at Intervet Inc. in DeSoto, Kansas. Prior to that he has been a principal scientist and group leader for Schering Plough Animal Health, Omaha, Nebraska; an associate research scientist and assistant research scientist for Solvay Animal Health (Salsbury Laboratories) in Charles City, Iowa; and a biological research assistant for the United States Army Medical Research Institute of Infectious Diseases (USAMRIID) at Fort Detrick, Maryland.

Dr. Hesse's other honors and awards include: the Army Distinguished Service Medal for Lassa Fever research, membership in the Gamma Sigma Delta honor society, and the Phi Zeta Honor society of Veterinary Medicine, the Schering Plough Excellence Award for development of a PRRS vaccine and the Kansas Veterinary Medical Association Distinguished Service Award.

SQUAMOUS (*continued from page 2*)

into the dermis is diagnostic. An association of papillomavirus with the neoplasm can be detected by immunohistochemistry (Figure 3) or PCR.

Prognosis

Squamous cell carcinoma is often a locally infiltrative neoplasm that rarely undergoes metastasis, hence a complete surgical excision of the neoplasm with clean surgical margins of 0.5 to 1 cm offers a good prognosis. Limiting exposure to UV light will significantly decrease the incidence.

For questions on various available treatment options, please call KSVDL to setup a consult with one of the oncologists at the Veterinary Health Center, KSUCVM. Phone: 785-532-5650 or email: clientcare@vet.k-state.edu

For any additional questions and references related to this report, phone: 785-532-5650 or email: clientcare@vet.k-state.edu



Neonatal Diarrhea Submission Results, 2017

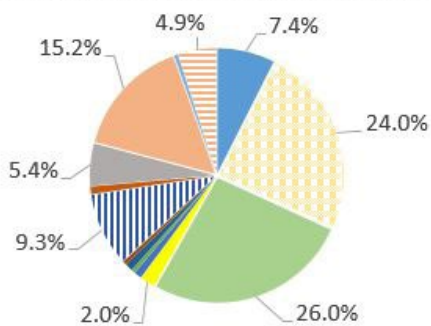
By Dr. Gregg A. Hanzlicek

The graph below is a summary of 296 fecal or tissue submissions to the KSVDL requesting the neonatal diarrhea PCR panel.

Twenty four percent of all submissions were found to contain only Rotavirus. Additionally, 39.8% of the submissions contained Rotavirus in combination with one or more other pathogens. Twenty six percent of the samples contained only Cryptosporidium. Rotavirus in combination with Crypto was found in about 15% of the samples, and the combination of Rotavirus and Coronavirus was found in about 10% of the submissions. Other pathogen combinations were found much less frequently, but many of the combinations contained one more of the zoonotic pathogens.

Although the treatment for neonatal scours is similar regardless of the associated pathogen, knowing the predominate organisms involved in herd outbreaks can be important for educating the client about zoonotic potentials and when planning prevention programs for the next calving season.

Neonatal diarrhea PCR results, 2017



- Corona only
- Crypto only
- E.coli only
- Corona/crypto/rota
- ▨ Rota/corona
- Corona/crypto
- Rota/crypto/e.coli
- Rota only
- Salmonella only
- Salmonella/rota
- Salmonella/rota/crypto
- Corona/salmonella/crypto
- Rota/crypto
- ▨ Rota/corona/crypto

For more information contact KSVDL Client Care at 866-512-5650 or clientcare@vet.k-state.edu.

Poultry Expert Joins The KSVDL

As in many places throughout the US, the popularity of backyard and small flock poultry in Kansas has grown in recent years. Dr. Cindy Bell is one individual who hopes to engage poultry enthusiasts



Dr. Cindy Bell

of Kansas. Dr. Bell joined the KSVDL in August 2017 as an Anatomic Pathologist. She has already stepped up to bring a bit more poultry into the DVM curriculum by providing wet labs to students on poultry necropsy and by giving poultry-focused guest lectures in already existing courses such as Nutrition and Exotic Animal Medicine. Dr. Bell's primary effort is in diagnostic service at KSVDL and she is enthusiastic about working up cases from backyard flocks, small commercial flocks, and game bird producers.

In addition to specific cases of poultry disease, many potential or current backyard flock keepers have questions about regulations, biosecurity and safety. Answers are not always easy to find so we have shared links to two recent posts from other sources. First, the Center for Disease Control has posted a final map of all cases of a recent multi-state outbreak in which human Salmonella infection was linked to backyard poultry. Second, a recent posting by University of California-Davis explores questions about the possible need for more regulation of backyard flocks in order to ensure the health of both human and poultry.

Keeping backyard poultry can be very gratifying and KSVDL is here to provide expertise in surveillance and diagnostic testing for poultry diseases.

<https://www.ucdavis.edu/news/backyard-chickens-need-more-regulation>

<https://www.cdc.gov/salmonella/live-poultry-06-17/map.html>



New Tool for Bovine Practitioners!



To use this tool, please follow the link below (in the green circle) located at www.ksvdl.org

For more information contact KSVDL Client Care at 866-512-5650 or clientcare@vet.k-state.edu.

Register Now For The 80th Annual Conference For Veterinarians!!



KANSAS STATE UNIVERSITY | College of Veterinary Medicine

80th Annual Conference for Veterinarians

Celebrating Veterinary Medicine throughout the Years

Sunday, June 3 - Tuesday, June 5, 2018

Hilton Garden Inn and Conference Center, Manhattan, Kansas

Speakers and schedules will be posted on the following website soon.

<http://www.vet.k-state.edu/education/continuing/conferences/annual-conf18/index.html>

New Videos at KSVDL YouTube Channel

Polioencephalomalacia (PEM) in Cattle
<https://www.youtube.com/watch?v=RCAxV9E1ju0>

Nasal Swabbing for EHV 1 & 4 and Influenza Sampling
<https://www.youtube.com/watch?v=LxIUy5T3Sqo>

Fecal Centrifugation
<https://www.youtube.com/watch?v=mZunPcRr7C4>

Collecting Nasal Swabs in Dogs to Diagnose Canine Influenza Virus
<https://www.youtube.com/watch?v=mhBL2XzQCe0>

To view all the available videos on our channel, please follow this link:

<https://www.youtube.com/channel/UCtx-IIIxqj5PAMQYryXaRhA>



KSVDL Personnel Activities

Activities

<p>Dr. Susan Moore, along with Dr. Ingrid Garrison from the Kansas Department of Health and Environment, presented “Rabies, Prevention and Control Practices” at a public meeting in Overland Park, KS.</p>
<p>Drs. Dick Hesse, Giselle Cino, and Doug Marthaler attended the American Association of Swine Veterinarians Conference in San Diego, CA.</p>
<p>Dr. Doug Marthaler presented at the American Association of Swine Veterinarians, " NGS and Metagenomics: Interpretation for the Practitioner", which is attached.</p>
<p>Dr. Gregg Hanzlicek led a discussion on Anaplasmosis at the Atchison Veterinary Clinic’s client appreciation banquet in Atchison, KS.</p>
<p>Dr. Gregg Hanzlicek along with Kansas Department Animal Health veterinarians, Dr. Justin Smith, Dr. Sarah McReynolds and Dr. Andy Hawkins, participated in beef producer meetings in St. Francis, Sharon Springs, and Oakley, KS.</p>
<p>Dr. Doug Marthaler participated in a webinar with Manitoba swine industry titled, Analysis of vaccine-like PRRS strains in Manitoba.</p>
<p>Dr. Gregg Hanzlicek presented “Emerging? Diseases in Kansas” to producers at a Kansas State Research and Extension meeting in Ottawa, KS.</p>
<p>Dr. Gregg Hanzlicek presented “What We Know and Don’t Know About Vaccines” to producers at a Kansas State Research and Extension meeting in Osage City, KS.</p>
<p>Dr. Gregg Hanzlicek presented information about the current state of the VFD and Anaplasmosis in Kansas at a Kansas State Research and Extension producer meeting in Fredonia, KS.</p>

Publications

<p>Haley NJ, Richt JA, Davenport KA, Henderson DM, Hoover EA, Manca M, Caughey B, Marthaler D, Bartz J, Gilch S. Design, implementation, and interpretation of amplification studies for prion detection. Prion. 2018 Mar 9:1-10.</p>
<p>Chen F, Knutson TP, Ciarlet M, Sturos M, Marthaler DG. Complete genome characterization of a rotavirus B (RVB) strain identified in Alpine goat kids with enteritis reveals inter-species transmission with RVB bovine strains. J Gen Virol. 2018 Mar 8. doi: 10.1099/jgv.0.001022.</p>

Field Investigations

<p>Drs. Steve Ensley and Gregg Hanzlicek investigated a cow-calf neonatal sudden death epidemic in Central Kansas.</p>
<p>Dr Gregg Hanzlicek and previous KSVDL Director, Dr. George Kennedy, investigated a cow-calf nutritional issue in Southern Kansas.</p>
<p>Drs. Steve Ensley and Gregg Hanzlicek investigated a group of unexplained cow and calf deaths in Southwest Kansas.</p>
<p>Drs. Steve Ensley and Gregg Hanzlicek investigated a herd outbreak of weak neonatal beef calves in Southeast Kansas.</p>



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.

1800 Denison Avenue
Manhattan, KS 66506

Phone: 785.532.5650
Toll Free: 866.512.5650

Continuing Education

www.vet.k-state.edu/education/continuing/

April 12-14, 2018, 2018

Academy of Veterinary Consultants Spring Conference

Irving, Texas

<http://www.avc-beef.org/meetings/register.asp>

May 5, 2018

2018 National Meeting of the Center of Excellence for Vector-Borne Diseases

Manhattan, Kansas

<http://www.vet.k-state.edu/education/continuing/conferences/CEVBD-Conf/index.html>

February 25, 2018

35th Annual Frank Jordan Conference

Frick Auditorium

Kansas State College of Veterinary Medicine
Manhattan, Kansas

<http://www.vet.k-state.edu/education/continuing/conferences/FWJ18/index.html>

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:

Memorial Day: Closed Monday, May 28th

Open Saturday, May 26th, normal business hours (8 a.m. to 12 noon)

Open Tuesday, May 29th, normal business hours

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

A publication of the **KANSAS STATE UNIVERSITY** | College of Veterinary Medicine

