davisthompsonfoundation.org

Davis-Thompson Foundation

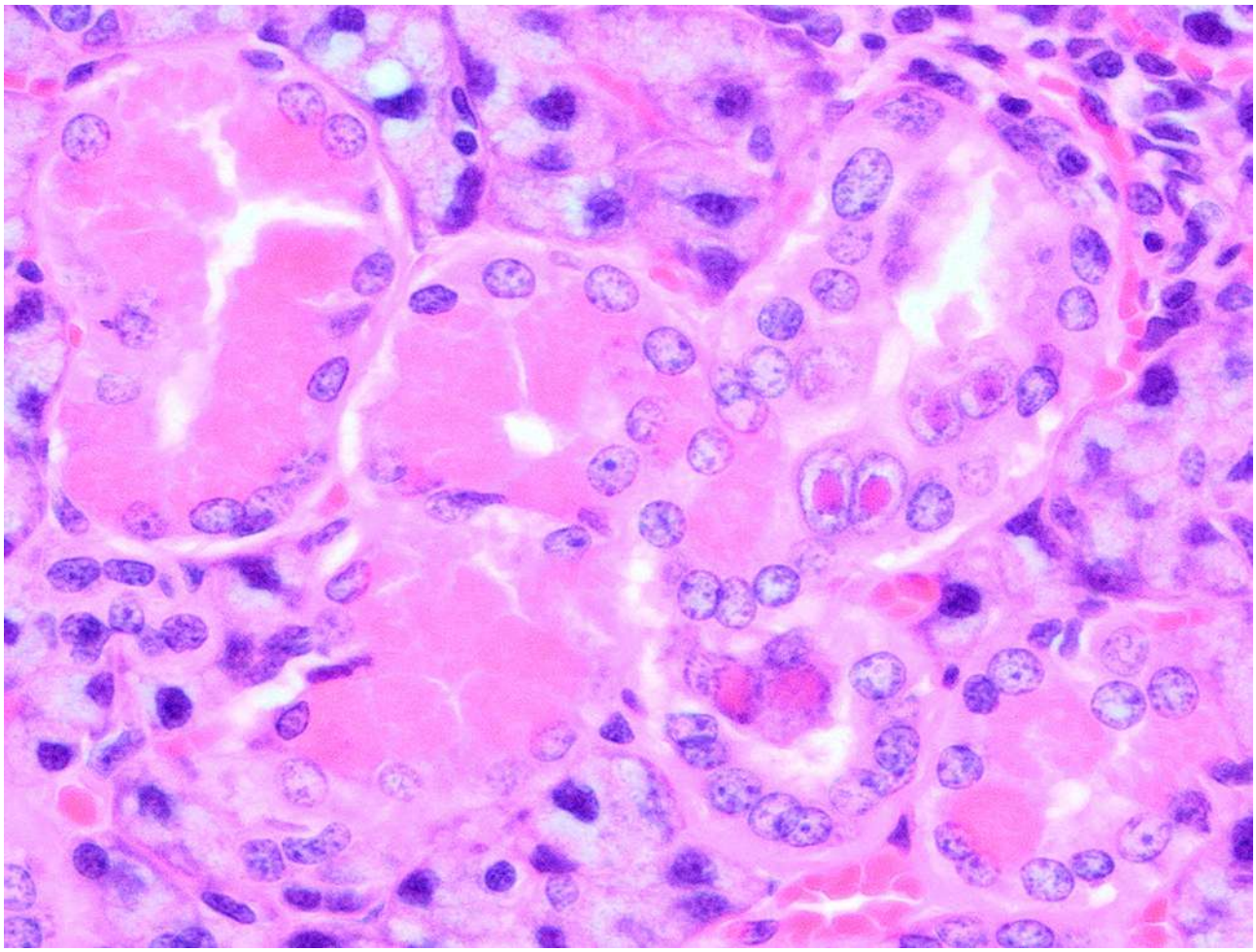
C.L. DAVIS/S.W. THOMPSON
DVM FOUNDATION

A tax-exempt, donative,
publicly-supported charity
For the advancemet of veterinary
and comparative pathology

THE DAVIS-THOMPSON FOUNDATION NEWSLETTER

August 2022

VOL. 52



INSIDE THIS ISSUE

Monthly cover photograph winner: Viviana Gonzalez-Astudillo

Institution: The University of Queensland, School of Veterinary Science, Gatton campus, Gatton, QLD, Australia

Signalment: Mature male feral domestic mouse (*Mus musculus*)

Diagnosis: Multifocal, chronic, mild, lymphoplasmacytic sialadenitis with karyomegalic intranuclear inclusions.

Comment: Mouse cytomegalovirus (MCMV; betaherpesvirus) is a mouse-specific virus that replicates in the nucleus and causes cytomegalic inclusion disease, characterized by enlarged cells with intranuclear and intracytoplasmic inclusions, particularly in the salivary gland epithelium as observed in this case. Wild/feral mice are commonly infected by MCMV and genetically diverse strains are known to circulate in wild mice in Australia. Except the salivary gland, tissues get rapidly cleared from infection, and naturally infected mice usually do not have overt disease. MCMV causes focal necrosis and cytomegaly, inclusions and inflammation in multiple tissues including salivary/lacrimal glands and liver (not shown) as was observed in the present case.

MESSAGE FROM THE CEO

Dear colleagues,

Welcome to the August issue of the Davis-Thompson Foundation Newsletter, with the compliments of our outstanding Managing Editors Javier Asin and Jeann Leal.

As you can see, the Foundation does not rest, and in this issue you will find, as usual, information on a large number of fantastic training opportunities for everyone, with great CE credits.

We are also very proud to announce the successful completion this past week of the first edition of the fully revamped version of our traditional “Gross Course”, now called “Current Literature and Image Interpretation Course”. We hope that this course will continue to be an invaluable resource for trainees preparing for boards and for pathologists that want to improve their diagnostic skills. Congratulations to the course director, Dr Linden Craig, and her team of fantastic lecturers for the great job in redesigning and running the course.

Last but not least, remember that our classic Laboratory Animal Science Seminar (CLASS) and Pathology of Laboratory Animals (POLA) course begins on August 6 and there are still seats available for registration (see more in the body of this Newsletter).

Looking forward to seeing you in one or more of our training activities soon.

Enjoy

Francisco (Paco) Uzal
Chief Executive Officer
Davis-Thompson Foundation

JVDI IN FOCUS

This month´s focus is an article in JVDI's July issue, "**Frequency of porcine circovirus 3 detection and histologic lesions in clinical samples from swine in the United States**" by Zhen Yang, Douglas G. Marthaler, Albert Rovira.

J Vet Diagn Invest 2022;34(4). **https://journals.sagepub.com/doi/full/10.1177/10406387221099538**

Abstract. Porcine circovirus 3 (PCV3) is widespread in pigs worldwide. Diverse clinical signs and lesions have been associated with PCV3, but the role of PCV3 as a cause of disease in swine remains unclear. We investigated the association of PCV3 with clinical signs and histologic lesions in 730 diagnostic swine cases between February 2016 and January 2018. The cases contained 2,177 samples submitted from 474 sites located in 21 states in the United States. PCR assay results were positive for PCV3 for 577 of 2,177 (27%) samples, 255 of 730 (35%) cases, 181 of 474 (38%) sites, and 17 of 21 (81%) states. We detected PCV3 in 19 of 28 specimen types and in pigs of all ages and clinical presentations, including healthy pigs, with the highest detection rate in adult pigs. PCV3 detection was not associated with respiratory, gastrointestinal, or CNS signs, weight loss, or sudden death. Of 58 types of histologic lesions evaluated, PCV3 detection was associated with myocarditis, cardiac vasculitis, and interstitial pneumonia in growing pigs. A high PCV3 detection rate was observed in aborted fetuses.

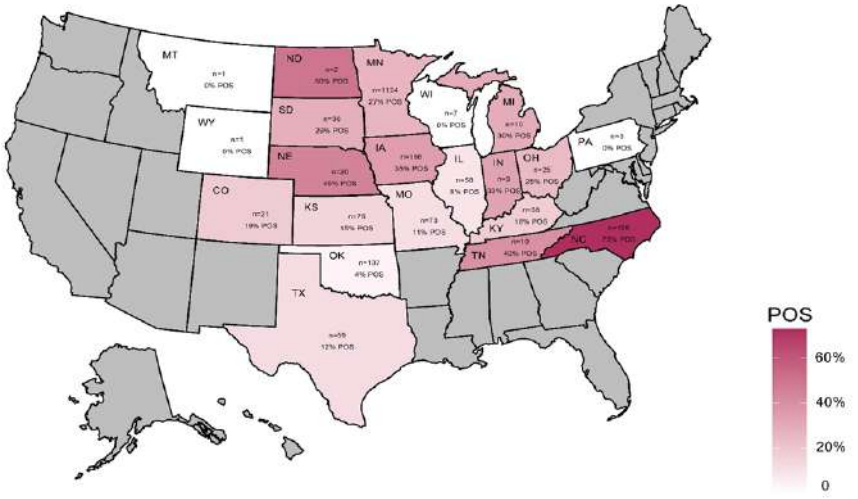


Figure 1. Geographic distribution of porcine circovirus 3 (PCV3) from clinical samples submitted from U.S. swine farms. The number of samples per state is illustrated with states in maroon gradient background. States with no samples submitted are in gray. PCV3-positive sample rate and the number of samples per state are displayed within each state. POS = positive.

DTF PATHOLOGY EXTERNSHIPS REPORT

Veterinary student **Viviana Sanchez,** finishing her 2nd year at Oklahoma State University, visited in Arkansas Department of Agriculture Veterinary Laboratory for 2 weeks in May, 2022. This is her report. We are always looking for more lab sites to host veterinary students with an interest in pathology. For more information, contact Dr. Jim Britt, **jobritt@sbcglobal.net.**

I would like to thank you for coming in to work with me during my externship and helping me find housing. Littlerock, Arkansas was a beautiful place to visit and I enjoyed the abundance of trees and scenery. I am grateful for having the opportunity to work with Drs. Denise Apperson, Troy Mulder and Jin Xie. They are a great team and I loved how passionate they are about the role they play as veterinary pathologists. I had the opportunity to watch a variety of species being necropsied, perform a chicken necropsy myself, worked on creating a case report, and practiced identifying different growths, and diseased cells and tissue on histopathology slides. I never realized how extensive the histopathology slide making process was until the pathology lab techs guided me through it.

DTF PATHOLOGY EXTERNSHIPS REPORT

Beyond the pathology department, I was also allowed to work with the aquaculture department and collected spleen and kidney samples from different fish species. I visited the serology department where they walked me through their testing process and I practiced micropipetting. I met a variety of friendly individuals that were willing to answer any questions I had and I truly appreciate how welcoming everyone was at the Livestock and Poultry Laboratory in Little Rock Arkansas. My experience was unforgettable and I found a new passion for pathology. Thank you for setting this opportunity up and I hope other students enjoy it just as much as I did.

Kind Regards,

Viviana Sanchez

AAVLD SLIDE SEMINAR

Diagnostic Pathology Slide Seminar Abstract Submission Deadline Extended until August 8

Submit your case
HERE

ANNOUNCEMENT AND CALL FOR

DIAGNOSTIC PATHOLOGY SLIDE SEMINAR CASES

65th AAVLD Annual Meeting 2022

Anatomic and clinical pathologists are invited to submit cases for the Diagnostic Pathology Slide Seminar at the 2022 AAVLD meeting. Necropsy, surgical pathology, or cytology cases that present a diagnostic challenge, represent an emerging disease, or exemplify a classic condition are solicited.

Abstracts:
Abstract submission will take place via the Clarivate Analytics ScholarOne online platform used for abstract submission to the general AAVLD meeting. The abstract submission deadline has been extended for one more week. The platform for submissions will remain open until **August 8th at 11.59 pm**. When submitting an abstract, after beginning the "Create New Submission" process, please choose the "Diagnostic Pathology Slide Seminar Abstract Submission" and please make sure to indicate if you are a trainee (yes/no button). Abstracts from trainees selected for presentation will automatically be considered for the Diagnostic Pathology Slide Seminar Award (see below).

Trainees will be given priority during the selection process. Experienced pathologists may also submit abstracts, but will be considered only after trainees. All abstracts received prior to July 31 will be given consideration for inclusion in the seminar. Authors will be notified of the status of their abstracts by no later than **August 15, 2022.**

Presentations:
Accepted abstracts will be allotted 6 minutes for presentation and another 3 minutes for questions. Presenters of necropsy and surgical pathology cases must supply a set of **65 H&E stained glass slides**. Cytology cases should consist of either 65 glass slides or, if fewer than 65 slides are available, then a representative series of high quality digital images or a digital slide should be provided. Case material (slide sets) should be submitted to **Dr. Rachel Derscheid by September 1, 2022** at the below address to allow for distribution and review by attendees prior to the conference.

Each presenter and their sponsoring laboratory will receive a set of slides at no charge. Remaining slide sets will be available, on a first come-first serve basis, for a $60 donation to the Pathology travel fund of the AAVLD Foundation. Please contact Dr. Rachel Derscheid if interested in purchasing such sets.

Diagnostic Pathology Slide Seminar Award
All trainees (veterinary undergraduate or graduate students, pathology residents, others) will be eligible to compete for the 2022 Diagnostic Pathology Slide Seminar Award. This award will be given to the top three presentations and comes with a monetary value of $300, $200 and $100 for 1st, 2nd and 3rd respectively.

Conference Coordinators:
Chair: Dr. Javier Asin, California Animal Health and Food Safety Laboratory System (CAHFS), University of California-Davis) San Bernardino, CA. Email jasinros@ucdavis.edu; phone: 909.751.3314

Co-chair: Dr. Rachel Derscheid, Veterinary Diagnostic Laboratory, College of Veterinary Medicine, Iowa State University, Ames, IA. Email: rdersch@iastate.edu; phone: 515.294.1173

Shipping address: 1815 Vet Med Annex, Ames, IA 50011-1134

SEMINAR REVIEWS

Uganda & Rwanda Seminars

by Dalen Agnew

Two exciting 2-day workshops were held in Kampala, **Uganda** and Musanze, **Rwanda** on 20-21 Jun and 23-24 Jun, respectively, organized and supported by the Davis-Thompson Foundation, the Global Health Pathology Network, Gorilla Doctors, Makerere University, and the University of Rwanda. The first workshop kicked off with a whole day One Health Human and Veterinary Comparative Pathology Symposium. Teams of veterinary and human medical pathologists, veterinarians, and veterinary and medical students worked through real-life outbreak scenarios involving diseases shared by humans and animals such as anthrax, trypanosomiasis, and viral hemorrhagic fever, and then shared their experiences and conclusions with the larger group in an engaging and educational interactive event. The day was facilitated by Drs. Kathy Gabrielson, Dalen Agnew, and Ed Gabrielson from the US, and Drs. Julius Okuni and Robert Lukande from Makerere University. On the second day, veterinary students learned and practiced basic ruminant and poultry prosection techniques and worked through another set of common poultry and small ruminant disease scenarios.

Small group of One Health practitioners working through a scenario facilitated by Dr. Robert Lukande.

SEMINAR REVIEWS

The second workshop held in Musanze, Rwanda at the headquarters of the Gorilla Doctors consisted of a first day of lectures and interactive case studies, including a zoom review of the identification of metazoans in tissue with Dr. Sarah Poynton, and a comprehensive review of primate diseases with Dr. Linda Lowenstine. On the following day, University of Rwanda veterinary students (who had traveled 6 hours to attend), learned and practiced poultry and swine prosection skills, and then returned to Gorilla Doctors HQ for interactive case discussions. These sessions were facilitated by Drs. Gabrielson, Agnew, and Jean Bosco Noheri of the Gorilla Doctors.

After completing their postmortem training, Rwandan veterinary students and Drs. Gabrielson, Agnew, and Noheri pose for a photo outside the original veterinary hospital (Virunga Veterinary Center) built for the mountain gorilla project by Dian Fossey and Dr. Jim Foster in Kinigi, Rwanda

Davis-Thompson Foundation

GLOBAL HEALTH PATHOLOGY NETWORK

GORILLA DOCTORS

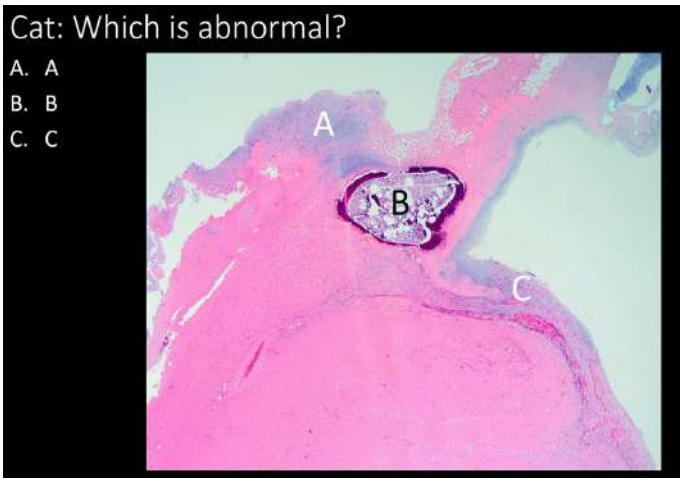
MAKERERE UNIVERSITY

SEMINAR REVIEWS

CLIIC summary

by Linden Craig

Over 150 people attended the **inaugural Current Literature and Image Interpretation Course (CLIIC)** hosted by University of Tennessee, which was a resounding success. This revamped version of the course formerly known as "Gross" included over 650 boards-style questions embedded throughout the 30+ hours of lecture. Questions included gross, microscopic, and cytologic images, as well as knowledge-based questions from the current literature and textbooks. The attendees were able to download the questions and references. The lectures were organized by organ system, allowing attendees to identify areas for additional study. Despite the virtual format, the lectures were lively, and the participants engaged through the chat (which was at time hilarious), Q&A, and embedded multiple-choice polling questions (see Participant Leader Board). We look forward to see many of you in person during the 2023 version of CLIIC in Knoxville.



One of the many questions offered during CLIIC

The proud instructors of the 2022 CLIIC. From left to right: Denae LoBato, Wesley Sheley, Michelle Dennis, Linden Craig, Kim Newkirk

SEMINAR REVIEWS

Necropsy Course

by Rafaela de Negri

We have received outstanding feedback from attendees of the first installment of the Necropsy Course, held on June 11 and 12, and have decided to make it a semi-annual event. Stay tuned for the next course coming up this winter!

The course was created mainly for candidates of the Foreign Veterinary Graduates Clinical Proficiency Exam (CPE). The CPE exam is the final step for foreign graduate veterinarians to receive accreditation by the AVMA Educational Commission allowing them to license and practice in the USA. However, the Necropsy Course also caters to any veterinarians looking to improve their necropsy skills.

This is a 2-day course that provides hands-on experience to 10 in-person attendees, and it is followed by a mock exam. In addition, we provide a live necropsy demonstration with tips and tricks to facilitate the practice and exam for virtual candidates over Zoom. The necropsy room is set up with multiple camera angles to give the virtual audience a better experience. These are presented by Dr. Rafaela De Negri and Dr. Nathan Helgert at Murray State University, Breathitt Veterinary Center in Hopkinsville, KY.

SEMINAR REVIEWS

After the first course held last June, several attendees have already passed the CPE exam and stated that they had, thanks to the training provided, an easy time in the necropsy section.

Check out some of the reviews!

"Excellent efforts to provide necropsy training for veterinarians in a short time. Very detailed information was provided by you guys. Not only useful for CPE but it's useful for life long. Great experience for hands-on training. Who is going or preparing for CPE, MUST attend it."

"The course was excellent, well organized, and the staff already knew and well prepared for all the exam requirements. everyone was friendly."

"Very practical. Very useful and rewarding. Worth it especially if you are taking the CPE test. It gives you a lot of confidence."

"I have learned a good protocol and technique and gained a lot of confidence doing necropsies"

DIAGNOSTIC EXERCISE

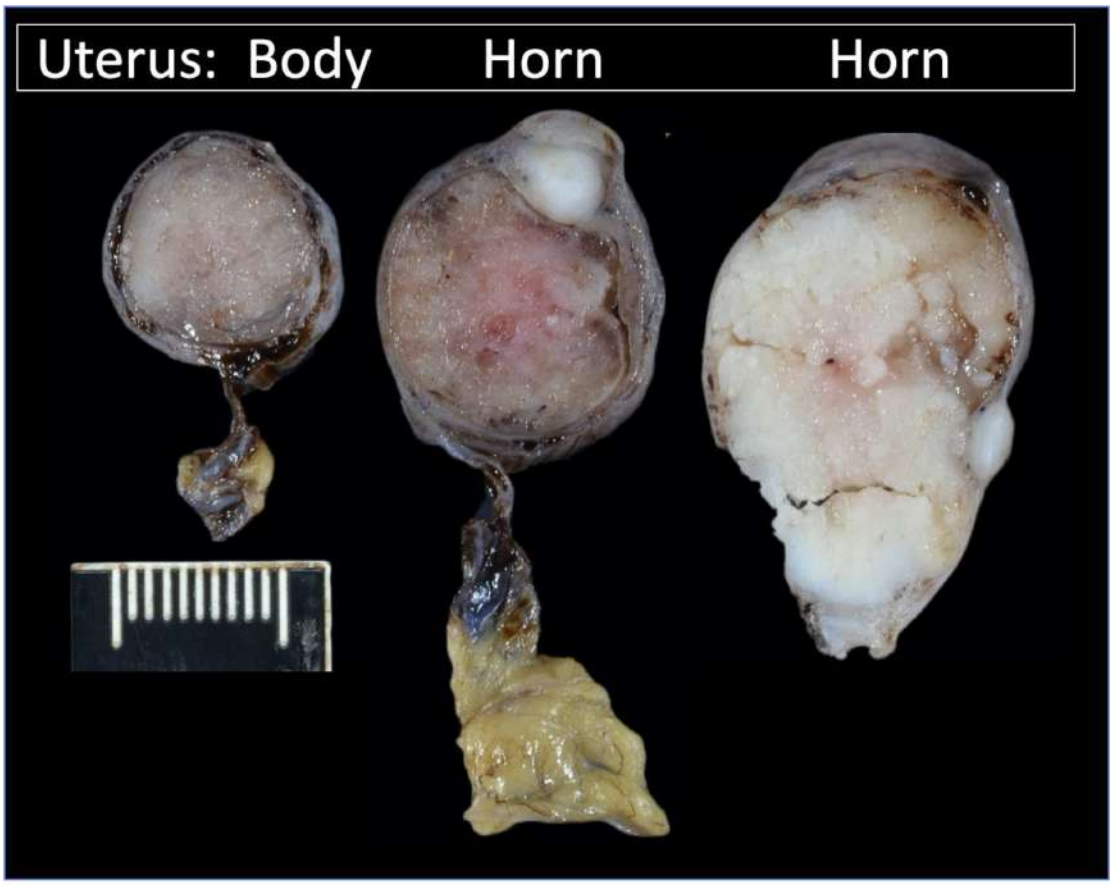
Case #: **189**; Month: **May**; Year: **2022**
Question Sheet

Contributors: Andrew Oates DVM, Samantha Darling, DVM, April Choi DVM, PhD, DIP ACVP (email to andrew.oates@colostate.edu)

Clinical History: The tissue is from a 3-year-old female intact Guinea Pig (*Cavia porcellus)* with a 9-month history of increased aggression and mounting behavior. On physical examination, the patient had bilateral patchy caudal alopecia, bilateral hyperkeratotic nipples, and soft, round structures palpated within the cranial abdomen. Additional findings include hematuria and mild to moderate hyperfibrinogenemia. A hysterectomy was performed and the reproductive tract submitted for evaluation.

Gross Findings: Uterus**,** the bicornuate uterus is markedly enlarged with the uterine body measuring 0.3 cm x 1.5 cm x 2.5 cm and the uterine horns ranging up to 2-3 cm in diameter. Bulging from the serosal surface of the uterine body are two nodules of similar appearance which are pale tan, smooth, raised, and approximately 0.3 cm in diameter. On section, the masses extend transmurally across the uterine wall. Extending from the serosal surface of one uterine horn, 3 cm from the uterine body-uterine horn junction, is a similar mass which has a stellate pattern. The lumen of the uterine body/uterine horns in this region is almost completely obstructed with firm, irregular, friable, pale tan tissue which is fissured with spaces filled with pink to dark brown, gelatinous to mucoid fluid. *Ovaries:* The ovaries are enlarged and their surface bossylated, measuring 2 cm x 0.6 cm x 0.5 cm and 1.2 cm x 1.7 cm x 0.6 cm in diameter. On cut section, the ovarian parenchyma is replaced and compressed with multiple cysts that contain scant clear, watery to slightly viscous fluid.

DIAGNOSTIC EXERCISE



Follow-up questions:

1. *Given the signalment, clinical history, gross description and photos: What are your differentials and/or morphologic diagnoses?*
2. *What is the pathogenesis?*

Associate Editor for this Diagnostic Exercise: Patricia Pesavento
Editor-in-chief: Claudio Barros

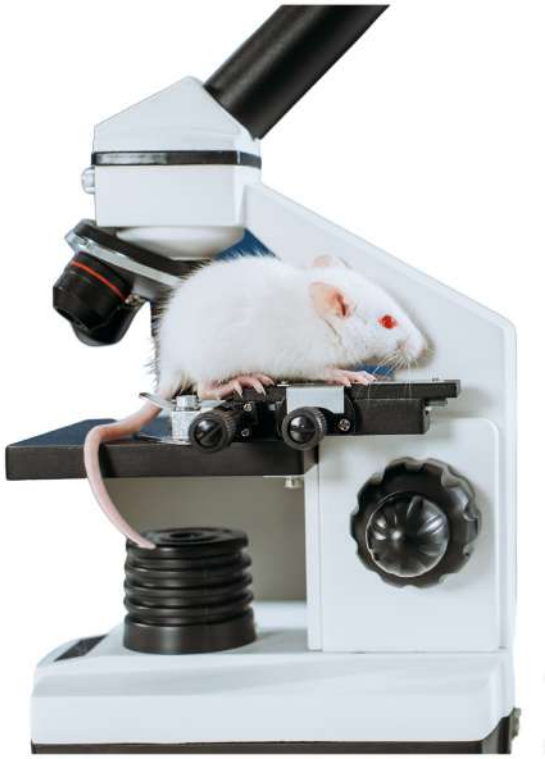
*The Diagnostic Exercises are an initiative of the **Latin Comparative Pathology Group (LCPG)**, the Latin American subdivision of The Davis-Thompson Foundation. These exercises are contributed by members and non-members from any country of residence. Consider submitting an exercise! A final document containing this material with answers and a brief discussion will be posted on the CL Davis website (https://davisthompsonfoundation.org/diagnostic-exercise/)

Click here for answers

CLASS/POLA 2022

Davis-Thompson Foundation

Penn
University of Pennsylvania



2022 CURRENT LAB ANIMAL SCIENCE SEMINAR (CLASS) & PATHOLOGY OF LAB ANIMALS (POLA)

CLASS AUGUST 6-7 | **POLA** AUGUST 8-12

VIRTUAL

Registration closed

SEMINAR SERIES IN PORTUGUESE

Click here to register for individual seminars

SEMINAR HISTOPATH LCPG

Click here to register

URUGUAYAN SEMINAR

Click here to register

ARGENTINIAN SEMINAR

Click here to register

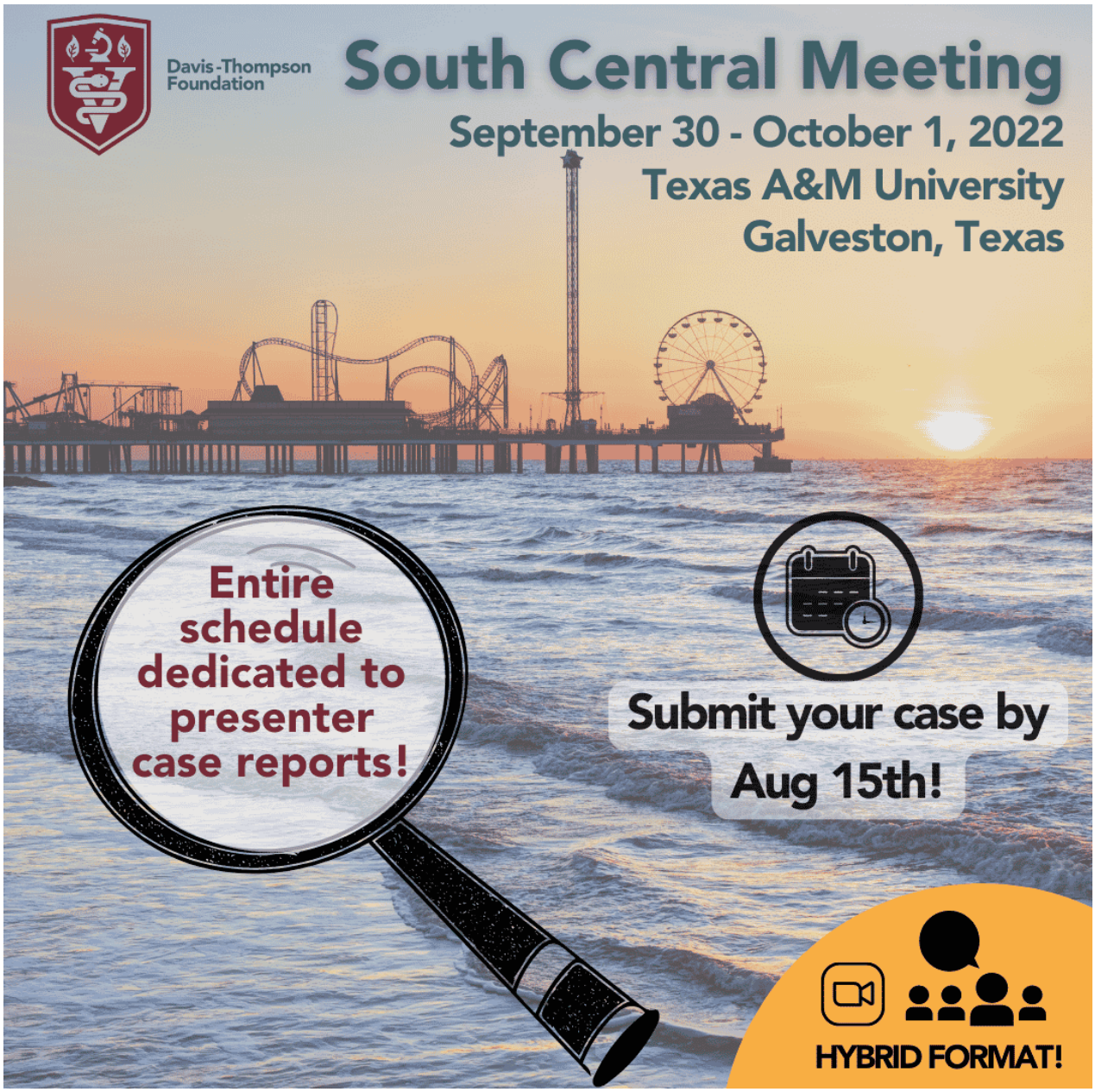
NON-HUMAN PRIMATE PATHOLOGY WORKSHOP

Click here to register

AAZV ANNUAL ZOO & WILDLIFE PATH

Click here to register

SOUTH CENTRAL MEETING



Click here to register

AAVLD DISEASES OF THE NERVOUS SYSTEM

Click here to register

LATIN AMERICA ROAD SHOW

ACVP PRE-MEETING WORKSHOP

Registration information coming soon on ACVP website

DT FOUNDATION SEMINARS IN LATIN AMERICA

BSTP CORNER

Future BSTP events are due to take place as follows:

5th – 14th July 2022	**Virtual CES 6 - Male Reproductive System**
10th & 11th November 2022	**37th Annual Scientific Meeting & AGM (IN PERSON)** **Digital Pathology and Mouse Pathology Workshop**
14th – 23rd March 2023	**Virtual CES 7 - Infectious diseases of laboratory animals**
4th – 13th July 2023	**Virtual CES 8 - Nervous System**
November 2023	38th Annual Scientific Meeting & AGM
March 2024	CES 9 - Urinary System
July 2024	CES 10 - Digestive System
November 2024	39th Annual Scientific Meeting & AGM
March 2025	CES 11 - Cardiovascular System
July 2025	CES 12 - Endocrine System
November 2025	40th Annual Scientific Meeting & AGM
March 2026	CES 13 - Urinary System
July 2026	CES 14 - Lymphoid & Haematopoietic Systems
November 2026	41st Annual Scientific Meeting & AGM
March 2027	CES 15 - Musculoskeletal System & Skin

The order of the CES will depend on the availability of high-quality speakers who are world experts in their particular field to present at the relevant meeting. Details of future meetings are correct at the time this booklet is generated, the BSTP will not be held responsible for any changes to dates, topics and venues of these meetings.

Webinars

BSTP webinars - in collaboration with the Society of Toxicological Pathology (STP)
Organisation still in progress

BSTP webinars - in collaboration with the ESTP/SFPT/BSTP and ECVP/ESVP
6th Joint Webinar of the ESTP/SFTP/BSTP and ECVP/ESVP, Monday April 25th, 2022
"Hot topics in Veterinary and Toxicologic Pathology".

For information on any events organised by the BSTP, please contact the BSTP Secretariat - **bstpsecretariat@gmail.com**

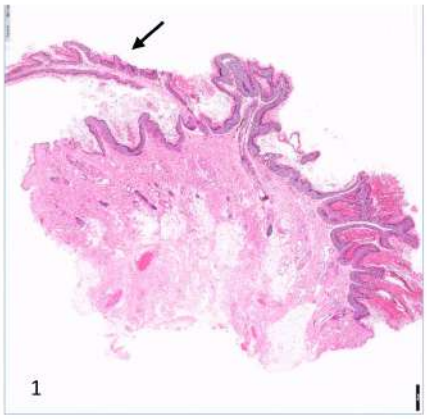
or visit the website – **http://www.bstp.org.uk/bstp-events/**

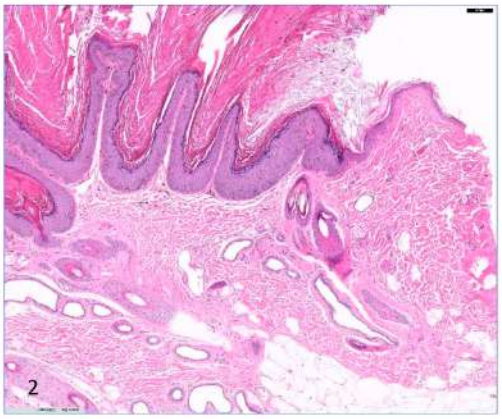
or **http://www.bstp.org.uk/bstp-webinars/**

IDEXX CASECONNEXX CORNER

Signalment: 10-year-old, female spayed, Yorkshire terrier

Source/ History: Newly noticed multifocal black spots on skin (head, abdomen, legs) varying in size from 1/4- 2 cm. Most have varying level of deep pigmentation, irregular borders and scaling on surface. Pet is on chronic prednisone for allergies (has failed all non-steroid options), very cushingoid in appearance, liver and cholesterol ok.



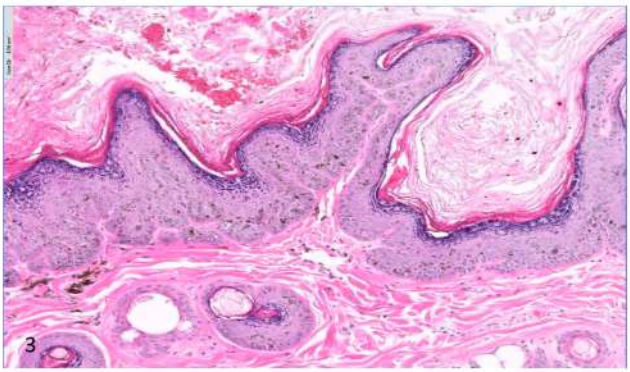


Figures 1. (2X magnification, H&E stain) and 2. (10X magnification, H&E stain) Multifocally expanding the epidermis and infundibular follicular epithelium are segmental, raised, discrete plaque-like areas with an undulating surface that consists of epidermal spikes adjacent to cups. The hyperplastic epidermis and follicular epithelium are also hyperpigmented and there is marked orthokeratotic hyperkeratosis. The epidermis is occasionally arranged in thin filiform projections with a collagenous core (black arrow, figure 1).

Figure 3. (20X magnification, H&E stain) Within the granular layer there are increased numbers of clumped keratohyalin granules. Cells within the basal layer are often crowded, though there is normal keratinocyte maturation. Within the superficial dermis, there is mild pigmentary incontinence.

MICROSCOPIC DESCRIPTION:
Examined are incisional samples with similar changes. Variably expanding the epidermis and infundibular follicular epithelium are segmental, raised, discrete plaque-like areas with an undulating surface that consists of epidermal spikes adjacent to cups lined by hyperplastic, hyperpigmented and hyperkeratotic squamous epithelium. The epidermis is occasionally arranged in thin filiform projections with a collagenous core. Within the stratum granulosum there are increased numbers of clumped keratohyalin granules. The epidermis contains normal keratinocyte maturation. The hyperkeratosis is orthokeratotic. Within the superficial dermis, there is mild pigmentary incontinence.

MICROSCOPIC INTERPRETATION:
Multifocal pigmented viral plaques



COMMENTS:
Canine pigmented viral plaques are rare or uncommon in the dog and develop secondary to papillomavirus infection.

Pigmented viral plaques often present in young adults as multiple deeply pigmented, ovoid, or circular plaques that are less than 1 cm in diameter, though are occasionally solitary. They have a scaly, irregular to papillated surface, and rarely (such as in this case) a hyperplastic epidermis covers a filiform collagenous protrusion. The ventral abdomen, ventral thorax, and medial proximal legs are common sites of involvement.

There is a breed predilection for Pugs and Miniature Schnauzers, supporting a genetic contribution to a cutaneous immunologic environment that allows for persistent papillomavirus infection. Immunosuppression due to hyperadrenocorticism, hypoglobulinemia and hypothyroidism has been suggested as a contributing factor in the development of pigmented viral plaque development in some cases.

The plaques develop progressively over time and then often become stable. Rarely, pigmented viral plaques undergo malignant transformation to squamous cell carcinoma. There is no overt evidence of malignant transformation in the examined sections from this case.

References: Skin Diseases of the Dog and Cat: Clinical and Histopathologic Diagnosis, 2nd ed., pages 571-574. 2005; J Vet Diagn Invest. 2012 May; 24(3):576-80.

Case by
Joseph Malatos, DVM, DACVP

IDEXX

CaseConnexx
Visit CaseConnexx.com to Register

MISCELLANEOUS ANNOUNCEMENTS

Membership Fees:
$50 - Professionals in US, Canada, and Europe
$30 - Professionals in Latin America
$25 - Students in US, Canada, and Europe
$15 - Students in Latine America

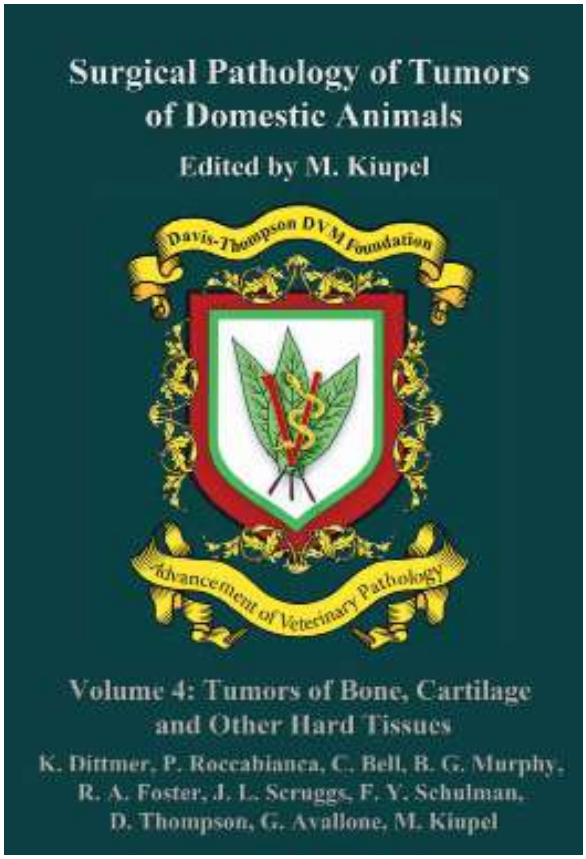
Use this link to join: https://davisthompsonfoundation.regfox.com/lcpg-membership

LCPG is the proud Latin American Division of the Davis Thompson Foundation

MISCELLANEOUS ANNOUNCEMENTS

www.vcgp.org is now live!

MISCELLANEOUS ANNOUNCEMENTS



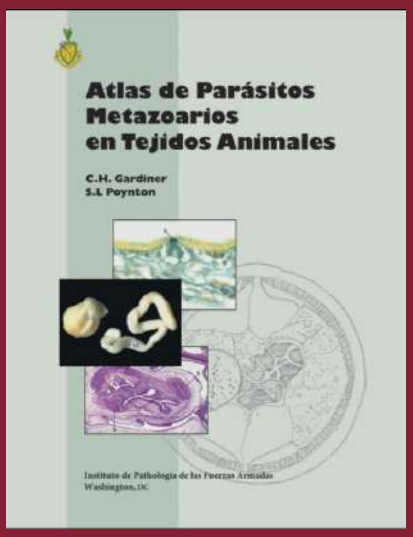
CLICK HERE **to order your copy today!**

RETIRING?

Have slides left over from your recent slide seminar? Just looking to free up some storage space? The Foundation is looking for additional glass slides, kodachromes and other similar materials for its Correspondence Division and Study Centers. All materials should be well identified with as much accompany history and discussion as possible, as these materials are expressly used for teaching. Moreover, as the Foundation is a publicly donative charity, all donated materials are tax-deductible. For more information, please contact Dr. Bruce Williams at **bruce.h.williams.dvm@gmail.com.**

Davis-Thompson Foundation Pathology Externship

Since 1980, the Davis-Thompson Foundation lab sites have hosted more than 125 veterinary students at 8 participating diagnostic laboratories. These students usually have a strong interest in pathology itself or zoo or poultry medicine that require a strong pathology background. The Foundation is always interested in having veterinary students apply for an externship and we would like to add more externship sites that do not usually have veterinary students, to help increase their interest and knowledge of pathology with some off-campus experience. For more information, contact Dr. Jim Britt, **jobritt@sbcglobal.net;** 501-912-1449.



Atlas De Parasitos Metazoarios En Tejidos Animales - Click Here to Get a Digital Download!