Managing Editors: J. Leal, DVM, MSc, PhD J. Asin, DVM, PhD





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

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THE DAVIS-THOMPSON FOUNDATION NEWSLETTER

September

VOL. 54



What is the most likely diagnosis for the lungs of this pig?

- A. Lipofuscinosis
- B. Congenital melanosis
- C. Metastatic melanoma
- D. Multifocal hemorrhage
- E. Anthracosis

INSIDE THIS ISSUE

Monthly cover photograph winner: Sawang Kesdangsakonwut

Department of Pathology, Faculty of Veterinary Science, Chulalongkorn University

Answer: B

Signalment: A suckling piglet (Sus scrofa), Duroc breed.

Diagnosis: Visceral melanosis (lung, lymph nodes, thymus, spleen, and brain) Diseases: Congenital melanosis

Pulmonary congenital melanosis commonly affects pigs and ruminants. It occurs when excessive quantities of pigment are deposited in the viscera or tissues but does not have clinical or pathological significance. The lungs, aorta, pleura, brain and meninges, kidneys, and liver are often affected.

> -Dr. Katherine D. Watson - Cover Image Editor -Dr. M. Donald McGavin - Cover Image Composition Analyst

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MESSAGE FROM THE CEO

Dear colleagues

Welcome to the September issue of the Davis-Thompson Foundation newsletter, skillfully prepared, as usual, by our awesome managing editors, Jeann Leal and Javier Asin. Thank you, Jeann and Javier!

As you probably already noticed, the newsletter is becoming increasingly larger. This simply reflects the enormous amount of training activities that the Foundation offers every month, prepared and delivered by our incredibly generous volunteers. Thank you!!!

Amongst the myriad training activities offered by the Foundation in the coming weeks/months, there are a few that I wish to highlight.

If you are going to Nashville for the annual AAVLD meeting in October, do not forget to register for the DTF Pre-meeting Workshop on Dermatopathology with keynote speakers Dominique J. Wiener and Aline Rodrigues Hoffman. Do not miss this amazing opportunity to deepen your knowledge and network with experts in the field! And talking about AAVLD: in our ongoing commitment to fostering diversity, equity, and inclusion (DEI) within our field, we are excited to partner with the AAVLD Committee on DEI (AAVLDEI) to present an engaging workshop titled "Essential Skills for Civil Conversations"; This event will take place on Saturday, October 12, from 6:30 to 8:00 PM. And remember that registration for the fully revamped Descriptive course, now Foundations of Pathology offered together with the annual meeting of ACVP, is open. Just a few spots are available; hurry up and register. And, if you are attending ACVP, consider also registering for our pre-meeting workshop "No guts-no glory", on tumors of the gastrointestinal tract, with a great list of speakers.

In less than two weeks is the 3-day hands-on Racehorse Necropsy Workshop co-sponsored by the Horse Integrity and Safety Authority, for which only 2 seats remain available. If you registered for the waitlist, please check you emails (and spam folders) for messages from <u>host.1@davisthompson-</u> <u>foundation.org.</u>

MESSAGE FROM THE CEO

Finally, as part of our ongoing efforts to offer scientific literature at very low cost, the Foundation just edited the book *Intoxicaciones por plantas, mico-toxinas y otras toxinas en rumiantes y équidos de Sudamérica*, brilliantly written in Spanish by Drs Franklin Riet-Correa, Juan Francisco Micheloud, Mizael Machado, Fábio de Souza Mendonça, Ana Lucia Schild and Ricardo Antônio de Lemos. This is the first physical book in Spanish edited by the Foundation and we hope that there will be many more coming. The price is \$ 40 plus postage; at 500 pages with 256 color illustrations, this is an incredible bargain! Also remember that we will be selling this, plus other books edited by the Foundation at AAVLD and ACVP (at discount prices), which will also save you shipping.

Looking forward to seeing you in one of our upcoming seminars.

Warm regards

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



JVDI IN FOCUS

Our September focus is an open-access article appearing in the September issue (Special Issue on Lagomorph Disease Investigations): "**Endoparasi-tes of rabbits and hares**" by Katherine Hughes.

JJ Vet Diagn Invest 2024;35(5). https://journals.sagepub.com/doi/full/10.1177/10406387241261991

Nematode, cestode, protozoan, microsporidian, and pentastomid parasites affect domesticated and wild rabbits, hares, and jackrabbits of the genera Brachylagus, Lepus, Oryctolagus, Pentalagus, and Sylvilagus. Some endoparasite infections are of limited or no significance, whereas others have potentially profound consequences. Accurate identification of endoparasites of rabbits, hares, and jackrabbits is an important facet of the work of veterinary pathologists engaged in lagomorph pathology. Here I review endoparasites from the pathologist's perspective, focusing on pathogenesis, lesions, and implications of infection. Stomach nematodes Graphidium strigosum and Obeliscoides cuniculi are infrequently pathogenic but may cause gastritis and gastric mucosal thickening. Nematodes Passalurus ambiguus, Protostrongylus spp., Trichostrongylus spp., and Trichuris spp. are rarely associated with disease. Adult Capillaria hepatica (syn. Calodium hepaticum) nematodes and non-embryonated eggs cause granulomatous hepatitis in wild Oryctolagus cuniculus and Lepus europaeus, resulting in multifocal, off-white, hepatic lesions, which may be misdiagnosed as hepatic eimeriosis. When the rabbit is an intermediate host for carnivore cestodes, the space-occupying effects of Cysticercus pisiformis and Coenurus serialis may have pathologic consequences. Eimeria stiedae is a major cause of white-spotted liver in O. cuniculus, particularly in juveniles. Enteric coccidiosis is a noteworthy cause of unthriftiness in young animals, and frequently manifests as diarrhea with grossly appreciable multifocal off-white intestinal lesions. O. cuniculus is the natural host for the zoonotic microsporidian Encephalitozoon cuniculi. Infection may be acute and focused mainly on the kidneys, or it may follow a chronic disease course, frequently with neurologic lesions. A latent carrier status may also develop.

The Journal of Veterinary Diagnostic Investigation is the official journal of the American Association of Veterinary Laboratory Diagnosticians. The mission of the Journal is to educate by informing readers of progress in veterinary laboratory medicine and related fields of endeavor. The key objectives of the JVDI are to promote the science of veterinary laboratory medicine and the betterment of animal and public health. JVDI fully supports diversity, equity, and inclusion in our publishing activities.

JVDI IN FOCUS

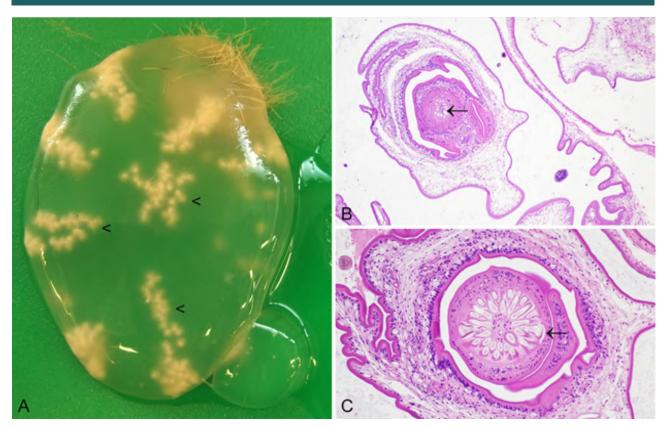


Figure 5. *Coenurus serialis* dissected from skeletal muscle of a European rabbit. A. Scolices (arrowheads) are arranged in radiating rows and clusters. The fur present is an artifact. B. An invaginated scolex with an armed rostellum (arrow). H&E. C. The armed rostellum is composed of hooks (arrow). H&E.



Case #: 241; Month: July; Year: 2024

Contributors: Daniel R. Rissi¹, Victoria E. Watson². ¹Athens Veterinary Diagnostic Laboratory, Department of Pathology, College of Veterinary Medicine, University of Georgia ²Department of Pathobiology and Diagnostic Investigation, College of Veterinary Medicine, Michigan State University. **Corresponding author:** rissi@uga.edu

Clinical History: An 11-year-old spayed female Golden Retriever dog was evaluated because of progressive lethargy and shallow breathing. An echo-cardiogram revealed a mass attached to the right auricle, and the patient was euthanized.

Autopsy findings: The pericardial sac contained 200 ml of blood. The right auricle was expanded by a $2.5 \times 1.2 \times 1.3$ cm, dark red, firm nodule covered with fibrin and blood clots (Fig. 1). The cut surface was dark red. The left auricle and part of the aorta were expanded by a $1.4 \times 1.7 \times 1.2$ cm, pale pink, firm, smooth nodule (Fig. 2). The cut surface was white.

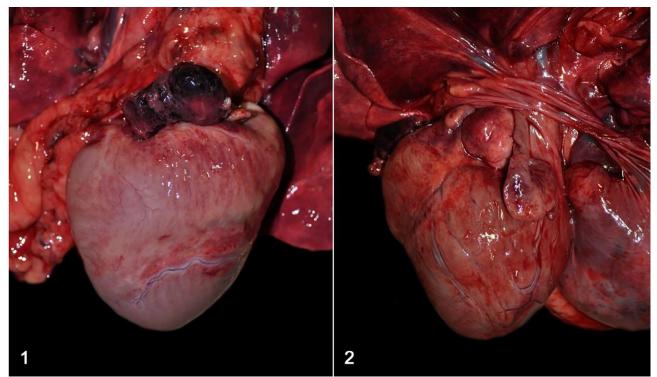


Figure 1. Heart, dog. The right auricle is expanded by a red nodule covered with fibrin and blood clots. **Figure 2.** Heart, dog. The left auricle is expanded by a pale pink, smooth nodule.



DIAGNOSTIC EXERCISE



Follow-up questions:

- Differential diagnoses for the right auricular lesion
- Differential diagnoses for the left auricular lesion
- Most likely diagnoses
- Diagnostic confirmation

Click here for answers

The Diagnostic Exercises are an initiative of the Latin Comparative Pathology Group (LCPG), the Latin American subdivis on of The Davis-Thompson Foundation (DTF). 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 brie discussion will be posted on the DTF website (https://davist-hompsonfoundation.org/diagnostic-exercise/)

Associate Editor for this Diagnostic Exercise: Daniel Rissi Editor-in-chief: Claudio Barros

TOXIC PLANTS BOOK

Intoxicaciones por plantas, micotoxinas y otras toxinas

Spanish

La Fundación Davis-Thompson se enorgullece de ofrecer el libro "Intoxicaciones por plantas, micotoxinas y otras toxinas en rumiantes y équidos de Sudamérica", brillantemente preparado por los colegas Franklin Riet-Correa, Juan Francisco Micheloud, Mizael Machado, Fábio de Souza Mendonça, Ana Lucia Schild y Ricardo Antônio de Lemos. Estos colegas suman una larguísima trayectoria en patología, toxicología y enfermedades toxicas y diagnóstico.

Lo realmente original y fascinante de este libro es la combinación, de información clínica, toxicológica, y patológica y su aplicación a plantas toxicas. Esta combinación única, hace de este libro una herramienta sumamente útil no solo para veterinarios de campo, si no también para patólogos, clínicos y estudiantes de veterinaria y otras carreras relacionadas. Si bien existen en la literatura internacional abundantes libros de textos sobre plantas toxicas, patología y toxicología,



este nuevo libro combina estas disciplinas de forma lógica y ordenada, proveyendo herramientas prácticas para el diagnóstico de las enfermedades tóxicas de los animales.

Con 500 paginas y 256 figuras en color, esta es una oferta increíble!

Click here to get yours!

TOXIC PLANTS BOOK

English

The Davis-Thompson Foundation is proud to offer the book "Intoxicaciones por plantas, micotoxinas y otras toxinas en rumiantes y équidos de Sudamérica", brilliantly written in Spanish by Drs Franklin Riet-Correa, Juan Francisco Micheloud, Mizael Machado, Fábio de Souza Mendonça, Ana Lucia Schild and Ricardo Antônio de Lemos. These colleagues have a very long trajectory in pathology, toxicology and diagnostics.

What is really new and fascinating about this book, is the practical combination of clinical, toxicologic, pathologic, and diagnostic information as it applies to toxic plants. This unique combination makes this book a very helpful tool for practitioners, pathologists, and veterinary students. Although there are in the international literature several textboks on toxic plants, pathology and toxicology, this new book combines these disciplines in a logic and organized way, providing practical tools for the diagnosis of toxic diseases of animals.

At 500 pages with 256 color illustrations, this is an incredible bargain!

Portuguese

A Fundação Davis-Thompson tem o orgulho de oferecer o livro "Intoxicaciones por plantas, micotoxinas y otras toxinas en rumiantes y équidos de Sudamérica", brilhantemente escrito em espanhol pelos doutores Franklin Riet-Correa, Juan Francisco Micheloud, Mizael Machado, Fábio de Souza Mendonça, Ana Lucia Schild e Ricardo Antônio de Lemos. Esses colegas têm uma longa trajetória em patologia, toxicologia e diagnóstico.

O que realmente é novo e fascinante sobre este livro é a combinação prática de informações clínicas, toxicológicas, patológicas e diagnósticas aplicadas às plantas tóxicas. Essa combinação única torna este livro uma ferramenta muito útil para veterinários de campo, clínicos, patologistas, estudantes de veterinária e outras profissões relacionadas. Embora haja, na literatura internacional, vários livros sobre plantas tóxicas, patologia e toxicologia, este novo livro combina essas disciplinas de forma lógica e organizada, fornecendo ferramentas práticas para o diagnóstico de doenças tóxicas em animais.

Com 500 páginas e 256 ilustrações coloridas, é um incrível investimento!

Second meeting of Davis-Thompson Foundation Nicaraguan subdivision

By Dr. Cristina Toledo, DVM

The Davis Thompson Foundation was present for the second consecutive year in Nicaragua!

Nicaragua was favored with one of the travel funding programs for speakers in Latin America offered by the Latin Comparative Pathology Group (LCPG) -Davis Thompson Foundation (DTF), with the objective of promoting knowledge on Veterinary Pathology. On August 15, Dr. Guillermo Rimoldi (Clemson University) arrived in Managua with a full agenda, two hours after landing he visited the Universidad de Ciencias Comerciales (UCC), where he presented in person before approximately 70 attendants from different universities, and virtually for another significant number of participants. The lecture, Necropsy as a diagnostic method in Veterinary Medicine as well as a brief introduction about the DTF and the work it has been doing around the world, was presented, managing to connect with participants interested in their training as future Veterinary Pathologists.

Later, on August 16 and 17, he participated as a speaker at the University Congress of Agricultural Sciences organized by the UCC, where he presented the importance of cytology and histopathology in veterinary clinical diagnosis, to an audience of approximately 150 students and veterinarians, generating plenty of interest in a group of participants.

On August 18 and 19, Dr. Rimoldi gave a field necropsy workshop organized by the same University where 18 participants examined 37 animal carcasses including chickens, pigs, dogs, cats, sheep and goats, finding, discussing, and interpreting, plenty of lesions and pathogenesis.

Students and professionals are still very interested in these kinds of workshops, and multiple students asked Dr. Rimoldi to have his presence in the country again, to conduct another autopsy workshop in the coming years.



Pre congress lecture about the DTF and the importance of necropsy in Veterinary Medicine.



University Congress University of Agricultural Sciences 2024, Managua, Nicaragua.



Necropsy workshop in a shelter. It was a hard workday, but the landscape and enthusiasm were outstanding.



Dr. Rimoldi (in the center) discussing gross lesions and pathogenesis



Dr. Rimoldi (in the center) together with all attendees at the end of the necropsy workshop.



From left to right, Dr. Toledo (UCC, organizer of the event), Dr. Alejandro Sánchez (Mexico), Dr. Rimoldi and Ervin Cano Gómez (a fourth-year veterinary student).

Pathology of Wildlife Seminar in Chile

by Francisco Carvallo

The seminar "Pathology of Wildlife" was held in Valdivia Chile, at the Veterinary hospital of the school of veterinary medicine of Universidad Austral de Chile (UACh), on August 9 and 10, 2024. The seminar was organized by the Chilean society of veterinary pathology and the school of veterinary medicine at UACh, and sponsored by the Latin Comparative Pathology Group (LCPG) and the Davis Thompson Foundation. The keynote speaker was Dr. Mauricio Sequel from the University of Guelph, whose trip to Chile was sponsored by the LCPG. Dr. Seguel shared his experience with a variety of presentations, including "the necropsy procedure of wildlife", "Pathology of Marine mammals", "Necropsy procedure of cetaceans" and "pathology of wildlife in Guafo island, Chile". The program also included the presentation of 7 other speakers, such as Dr. Enrique Paredes, Dr. Manuel Moroni, Dr. Mauricio Navarro, Dr. Eduardo Raffo, Dr. Pablo Oyarzun, Dr. Angelo Espinoza and Dr. Francisco Carvallo. In addition, 15 posters were presented, and 6 students had the opportunity to orally present their research. The seminar had 90 attendees, between veterinarians and veterinary students. The weather was scold and rainy, but this did not stop the attendees of enjoying a good cocktail and dinner, in which they could interact with the speakers and make connections.



Some of the attendees to the seminar.



Dinner event.



Dr Mauricio Seguel, keynote speaker.

EXTERNSHIP REPORT

CAHFS San Bernardino externship report

by Calvin Ko

The externship at CAHFS San Bernardino is an experience I will remem ber for my life! As a first-year anatomic pathology resident, this opportunity broadened my horizons with necropsy on diverse species, in-depth rounds for pathology knowledge, and system-wide meetings with different diagnostic expertise. I did my first zebra necropsy on my first day, with many to follow, from koi fishes to mountain lions. San Bernardino has a heavy caseload of horses and backyard chickens. Towards the end of the externship, I was comfortable doing the necropsy and could point out lesions gross and histologically. Moreover, I learned the art of racehorse musculoskeletal necropsy and saw many common fractures and preexisting lesions. CAHFS San Bernardino is a highly welcoming family. I want to express my gratitude to everyone in the lab, especially Dr. Paco Uzal, for this invaluable opportunity, and thanks to the Davis-Thompson Foundation for the generous support.





California Animal Health and Food Safety Laboratory Dr. Paco Uzal and Dr. Calvin Ko at the necropsy room

From left to right: Dr. Javier Asin, Dr. Calvin Ko and Dr. Paco Uzal

GHPN INFORMATION SESSION



SEMINAR SERIES IN SPANISH

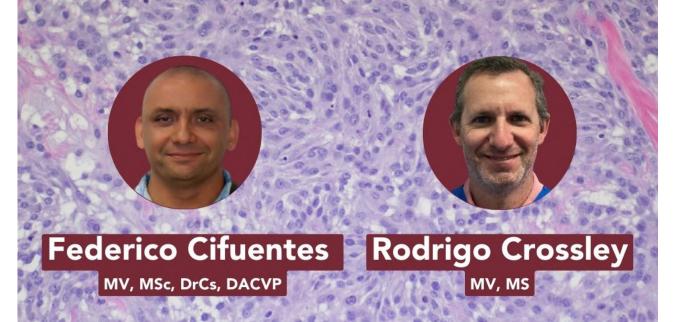


Davis - Thompson Foundation



Seminar Series in Spanish 2024 12 de setiembre, 2024 11:00am-12:30pm CDT

Sarcomas de tejidos blandos: del patólogo al oncólogo



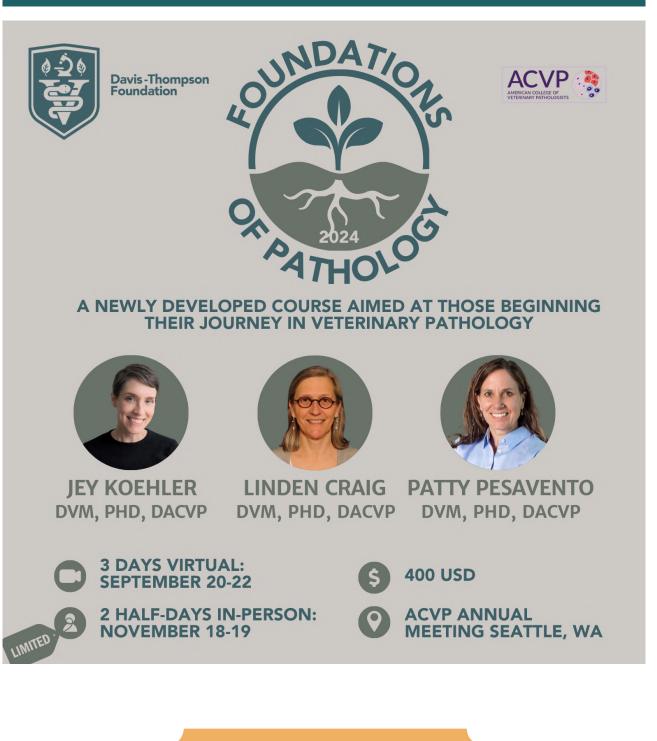
RACEHORSE NECROPSY WORKSHOP



ZOO & WILDLIFE PATHOLOGY



FOUNDATIONS OF PATHOLOGY



INVERTEBRATE PATHOLOGY SEMINAR



Davis - Thompson Foundation

BEYOND THE BACKBONE SEPTEMBER 27, 2024



INVERTEBRATE PATHOLOGY DAY SEMINAR



AAVLD 2024 PRE-MEETING



Davis -Thompson Foundation



2024 AAVLD ANNUAL MEETING DAVIS-THOMPSON PRE-MEETING WORKSHOP:

FRIDAY, OCT 11

DERMATOPATHOLOGY - MORE THAN SKINNY LAYERS





Aline Rodrigues Hoffmann Dominique J. Wiener DVM, MS, PhD, DACVP

DVM, PhD, DECVP



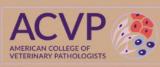
AAVLDEI WORKSHOP



ACVP 2024 PRE-MEETING







A review of gastrointestinal tumors

6.5hrs RACE



Francisco Uzal DVM, MSc, PhD, DACVP



Jesse Hostetter DVM, PhD, DACVP

NOVEMBER 16, 2024

() 8AM- 5PM () SEATTLE, WA





Dorothee Bienzle DVM, PhD, DACVP, CAHSF

In person



John Munday BVSc, PhD, DSc, DACVP



Brandon Plattner DVM, PhD, DACVP

EUROPOLA



WESTERN ROUND ROBIN CASE

CONTRIBUTING LABORATORY: North Dakota State University Veterinary Diagnostic Laboratory

Clinical history: 8-year-old, American bison (*Bison bison*) cow with clinical history of stiff joints and emaciation. The herd has 50 cow/calf pairs with 1 previous death several weeks prior, and another cow that currently appears emaciated. No vaccinations within the herd for several years.

Gross findings: Body condition score of 2/9 with scant visceral fat stores. Dried fecal material around the tail. The abomasal mucosa has hundreds of occasionally coalescing, shallow, 0.2 to 1cm wide, roughly round ulcers. The abomasum is filled with viscous tan-green ingesta. The small intestines are distended with thin, yellow tan ingesta. The colon and rectum have no formed feces present.

Histopathology: Abomasum: There are multifocal to coalescing areas of mucosal ulceration subtended by a marked infiltrate of neutrophils with overlying clusters of abundant numbers of large cocci and short rods. Several gastric pits contain cellular debris and degenerate inflammatory cells with rare ciliates and variable degrees of attenuation and necrosis of the lining epithelium. A mild to moderate infiltrate of lymphocytes and plasma cells is present in the lamina propria.

Diagnosis: Yersinia enterocolitica

Comments: This animal had a significant gastrointestinal disease, for which there appears to be a concurrent bacterial and parasitic etiology. Enteric culture isolated *Yersinia enterocolitica* from a pooled sample of abomasum and small/large intestines. In addition, fecal flotation identified strongyle-type and *Eimeria* spp. Other diagnostics were performed to rule out clostridiosis, Epizootic Hemorrhagic Disease, and Malignant Catarrhal Fever. *Yersinia enterocolitica* is an enteric, gram-negative, large colony forming bacteria with zoonosis potential. Yersiniosis causes an enterocolitis, mesenteric lymphadenitis, septicemia, and, less commonly, hepatitis in cattle, sheep, goats, pigs, deer, exotic ungulates, and non-human primates. Outbreaks can occur under less-than-ideal conditions such as poor weather, flooding, after transport, during breeding season, or if animals are nutritionally deficient.

WESTERN ROUND ROBIN CASE

Yersinia enterocolitica is ingested and invades through the intestinal epithelium of M cells overlying the Peyer's patches to reach the lamina propria of the submucosal lymphoid follicles. There is a large recruitment of neutrophils and subsequent destruction of the Peyer's patches architecture. The end result is formation of suppurative foci in place of follicles, and microabscesses within the lamina propria. *Y. enterocolitia* disseminates through the lymphatic and hepatic portal system leading to systemic infection. There are several virulence factors that aid in the invasion of the enterocytes and evasion of the host immune response. Invasin is an outer membrane protein on the bacterial surface that binds to beta-1 integrin in the host tissue. This allows for the translocation across the intestinal epithelium, and also induces production of chemokines such as IL-8. *Yersinia enterocolitica* starts to replicate in the Peyer's patches and express adhesin, which helps to protect against phagocytosis. Ail, along with YadA, are expressed and help to protect against the host immune system

One the key virulence determinant is the type three secretion system (T3SS) which primarily functions to inject multiple toxic yersinia effector proteins (Yops) directly into the host cell cytosol. Once inside the cytosol, Yops inhibits phagocytosis, blocks cytokine production, and triggers a reaction resulting in apoptosis.

To my knowledge, there are very few reports of *Yersinia enterocolitica* causing morbidity and mortality within bison herds. Most reports involving American bison and *Y. enterocolitica* discuss the potential cross-reactivity with *Brucella abortus* during serologic testing within bison and elk herds. *Yersinia enterocolitica* serotype O:9 and *B. abortus* share an identical O-antigen structure encoded by the gene perosamine synthetase. This can lead to false positive serology tests in bison and elk herds.

Differentials include *Yersinia pseudotuberculosis* which cannot be differentiated reliably grossly or microscopically from *Y. enterocolitica*..

Contributor: Quynn Steichen, DVM, MS, Anatomic Pathology Resident and Deborah Chong, BVSc (Hons), BSc(Vet) (Hons), Veterinary Pathologist

WESTERN ROUND ROBIN CASE

References:

1. Atkinson S, Williams P. *Yersinia* virulence factors – a sophisticated arsenal for combating host defences. F1000Research. 2016, 5(F1000 Faculty Rev):1370 (doi:10.12688/ f1000research.8466.1).

2. See W, et al. *Yersinia Enterocolitica*: An unlikely cause of positive brucellosis tests in greater Yellowstone ecosystem Bison (*Bison bison*). J. of Wildlife Disease 2012;48(3): 537-541.

3. Uzal FA, Platter BL, Hostetter JM. Alimentary System. In: Maxie MG, ed. Jubb, Kennedy, and Palmer's Pathology of Domestic Animals. 6th ed. Philadelphia, PA: Elsevier; 2016;71:176-177.

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NOAH'S SLIDEBOX





Davis - Thompson Foundation



Australian Seminar

Series 2024

Australian Schedule! (See the DTFoundation website for USA schedule)



Click here to register to individual seminars

REGISTER NOW

EARLY BIRD DISCOUNTS AVAILABLE!

ASVP CORNER

13-15 SEPTEMBER, 2024 2024 HOTEL GRAND CHANCELLOR ADELAIDE, SA **ASVP & DTF** SCIENTIFIC CONFERENCE THE URINARY SYST

We are delighted to invite you to attend the ASVP & Davis-Thompson Foundation 2024 Scientific Conference at the Hotel Grand Chancellor, Adelaide, on 13-15 September 2024.

This year's theme is the Urinary System and we are excited to announce the engagement of high-calibre international and national speakers that cover the specialities of internal medicine, clinical pathology and anatomical pathology.



MARY NABITY **Keynote Speaker** Associate Professor Texas A&M University



RACHEL CIANCIOLO **Keynote Speaker** Anatomic Pathologist Zoetis Inc.

MARY THOMPSON

Keynote Speaker Associate Professor in Small Animal Medicine, The University of Sydney

Visit www.asvp.asn.au for further details including the full line up of speakers, program, social events, and registration.

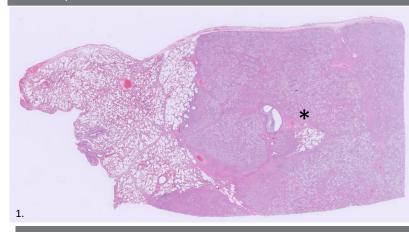
What's on offer?

- an outstanding scientific program
 a diversity of delegates
 a supportive environment for members, students and early career pathologists to present and learn from colleagues
- happy hour with our expert panel
 social dinner with colleagues
 networking over 3 days of the program
 earn CPD/MOC points

IDEXX CASECONNEXX CORNER

Signalment: 11 year old female horse

Source/ History: Chronic history of pneumonia for the past 2 months. Non-responsive to antibiotics. Severe weight loss and recurrent/daily pyrexia. Generalized nodular pattern throughout all lung lobes observed on thoracic radiographs. PCR positive for herpesvirus-5.



Histopathologic Description:

Histopathologic Description: Lung: Multifocally throughout the lung, affecting up to 50 % of the total evaluated lung parenchyma, there are large, well-demarcated, nodular foci of extensive interstitial fibrosis characterized by marked thickening of alveolar septa by streams of immature collagenous stroma, plump fibroblasts/myofibroblasts, and mild interstitial histiocytic and lymphocytic infiltrates. Alveoli in affected regions are circumferentially lined by plump cuboidal type II pneumocytes frequently swollen by abundant clear cytoplasm. Alveoli and airways in affected regions contain abundant muccid to flocculent secretions suspended with large numbers degenerate neutrophils and foamy macrophages.

Interpretation: Lung: Multifocal interstitial fibrosis and lymphohistiocytic inflammation, severe, with marked type II pneumocyte hyperplasia and neutrophilic and histiocytic alveolar infiltrates, consistent with equine multinodular pulmonary fibrosis

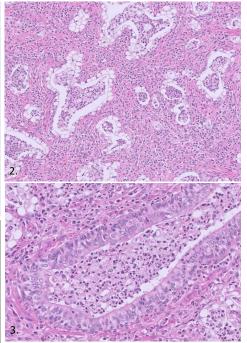


Figure 1. Large well-demarcated nodular region of marked pulmonary fibrosis (black asterisk). 2X magnification. Figure 2. Alveolar septa are markedly thickened by fibrosis and lymphohistiocytic inflammation. Alveoli are lined by plump and swollen type II pneumocytes. 20X magnification. Figure 3. Airways and alveoli are filled with abundant foamy macrophages and degenerate neutrophils. 40X magnification.

Comments:

Comments: The histological findings are highly consistent with a diagnosis of equine multinodular pulmonary fibrosis. Equine multinodular pulmonary fibrosis (EMPF) results in a unique gross and histologic appearance dominated by a nodular pattern of marked interstitial fibrosis. Clinical signs of affected horses may include tachypnea, dyspnea, nasal discharge, coughing, lethargy, inappetence, and poor body condition. No breed or sex predilection has been established, and although affected horses are typically middle-aged or geriatric, cases have been reported in horses as young as four years-old. Equine herpesvirus-5 (EHV-5) is a gammaherpesvirus which has been strongly associated with EMPF, and can consistently be identified by polymerase chain reaction (PCR), immunohistochemistry (IHC), in situ hybridization, virus isolation, and transmission electron microscopy (TEM) in animals affected by EMPF. Gammaherpesviruses are associated with fibrotic lung disease in other species such as pulmonary fibrosis associated with Epstein-Barr virus infection in humans and Murid herpesvirus-66 infection in Th2-biased interferon-γ receptor negative mice. The pathogenesis by which EHV-5 causes EMPF is not fully understood but, in these other species, the pathogenesis of gammaherpesvirus induced pulmonary fibrosis involves lytic infection of type II pneumocytes and upregulation of profibrotic mediators such as transforming growth factor-β.

Although successful treatment of EMPF with corticosteroid and antiviral (acyclovir) therapy is reported, overall, response to treatment is variable and the prognosis of this disease is generally considered poor with 3-month survival rates as low as 24% being reported. Predictor variables associated with increased survival times (i.e. increased likelihood of surviving to 3 months post-diagnosis) include lower respiratory rate at time of clinical presentation (e.g. 30 breaths per minute vs 41 breaths per minute), higher lymphocyte to neutrophil ratios in bronchoalveolar lavage fluids, and high blood lymphocyte counts (Craven et al., 2024).

References: Craven, A., et al. (2024). Clinical findings and outcome predictors for multinodular pulmonary fibrosis in horses: 46 cases (2009-2019). Journal of veterinary internal medicine, 38(3), 1842–1857.; Williams K.J., et al. Experimental induction of pulmonary fibrosis in horses with the gammaherpesvirus equine herpesvirus 5. PLoS One. 2013;8(10):e77754. Published 2013 Oct 11.

Case by Luke Haydock, BVSc (Dist.), DVSc, DACVP



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2024 DTF-LCPG ACTIVITIES IN LATIN AMERICA

Country	Name of Seminar	Dates	Place/University	Speakers	Organizers
Argentina	XVIII Seminar of the Argentinean Subdivision of the Davis-Thompson Foundation and XII Forum on Teaching Veterinary Pathology.	Aug 22-23	Rosario, Argentina. Facultad de Ciencias Veterinarias, Universidad Nacional de Rosario	Francisco Uzal, Fabio Vanucci, Pablo Piñeyro, Luary Carolina Martínez Chavarría	Leonardo Minatel
	Latin American roadshow: Gastrointestinal pathology	Oct 24-25	Buenos Aires, Argentina. Universidad de Buenos Aires.	Francisco Uzal	Leonardo Minatel
Brazil	2024 Brazilian Symposium of the DTF - Pathology of zoo and wildlife	Sept 20-22	Universidade Federal de Minas Gerais - Belo Horizonte, MG, Brazil	Denise McAloose	Renato de Lima Santos / Ayisa Rodrigues de Oliveira
Chile	Pathology of wildlife	Aug 8-9	Valdivia, Chile. Universidad Austral de Chile	Mauricio Seguel, Enrique Paredes, Mauricio Navarro, Manuel Moroni.	Mauricio Navarro
Colombia	Latin American roadshow: Gastrointestinal pathology	Nov 1-2	Barranquilla, Colombia. Universidad San Martin	Francisco Uzal	Paola Barato
Costa Rica	Workshop in freshwater fish medicine and pathology in Latin America	Mar 22-23	San Jose, Costa Rica. Escuela de medicina y cirugia veterinaria San Francisco de Asís	Esteban Soto, Paola Barato	Roberto Olivares
Guatemala	Latin American roadshow: Gastrointestinal pathology	Nov 4-5	Ciudad de Guatemala, Guatemala. Universidad de San Carlos.	Francisco Uzal	Deborah Rodrigu
México	IV on-line necropsy course	Apr 8-19	México (On-line)	Elizabeth Rodriguez, María del Carmen Carmona, Alfredo Pérez, Mario Bedolla, Carlos González, Elizabeth Morales, Gerardo Salas, Mireya Juárez, Luis Garcia- Márquez, Diana Galván, Rubén López, Laura Romero, Francisco Carvallo.	Ruben Lopez
	V seminar of the Mexican subdivision of the Davis-Thompson Foundation	Oct 17-18	Tamaulipas, México. Universidad Autónoma de Tamaulipas	Mario Bedolla, Luis Jorge García, Luis Mario Leyva, Alfonso López, Julio Martínez, Elizabeth Morales, Rafael Ramírez	Ubicelio Martin
	Workshop in freshwater fish medicine and pathology in Latin America	Nov 21-22	Faculta de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México.	Esteban Soto, Paola Barato	Ruben Lopez
Paraguay	Latin American roadshow: Gastrointestinal pathology	Oct 28-29	Asunción, Paraguay. Universidad Nacional de Asunción.	Francisco Uzal	Leila Maidana, Mirtha Suarez
Uruguay	Latin American roadshow: Gastrointestinal pathology	Oct 21-22	Montevideo, Uruguay. Universidad de la Republica.	Francisco Uzal	Jose Manuel Verd
Venezuela	II Seminar of the Venezuelan Subdivision of the Davis-Thompson Foundation	Jul 18-19	Barquisimeto, Venezuela	Francisco Uzal, Joaquín Ortega, Yaritza Salas	Yaritza Salas

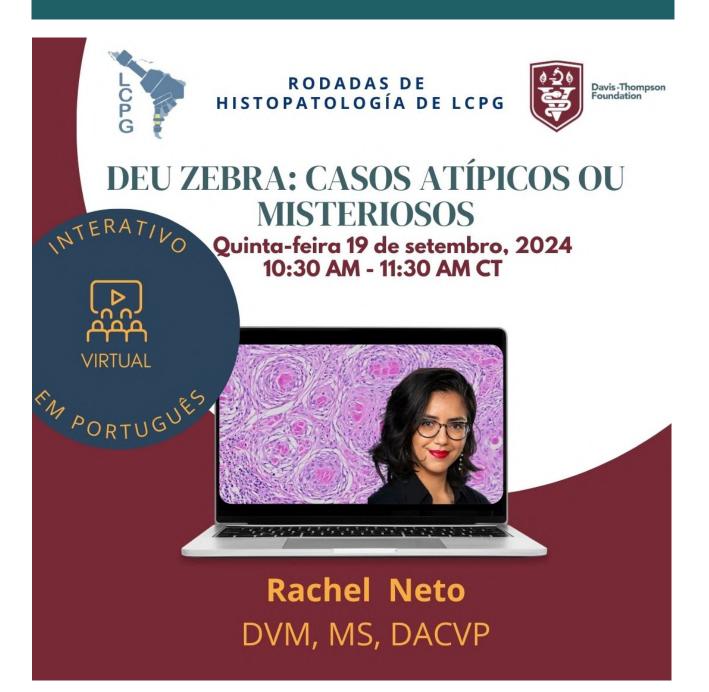
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Interview with Dr. Francisco Uzal, DTF CEO, during his visit to Venezuela





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XVIII Seminar of the Argentinean Division of the Davis-Thompson Foundation and XII Forum on Teaching Veterinary Pathology

by Dr Melisa Spadaro

The Forum on Teaching Veterinary Pathology was held on the morning of Thursday 22nd of August. This was followed by the XVIII Seminar of the Argentinean Division of the Davis-Thompson Foundation through Friday the 23rd. Both meetings were held at the Faculty of Veterinary Sciences, National University of Rosario (FCV-UNR), in Casilda, Santa Fe Province, Argentina. The Organizing Committee was led by Dr Javier Sarradell and included the academic members of the General and Systemic Pathology Department and several members of the non-academic staff of the FCV-UNR.

The Forum and the Seminar were very well attended by 40 and 90 veterinarians respectively, from all corners of Argentina, including pathologists, lecturers, private practitioners, researchers, extension officers and students. among them (Fig 1)



Figure 1. From left to right: Drs. Francisco "Paco" Uzal, Javier Sarradell and Fabio Vannucci.

In the Forum, Dr Francisco Uzal, Distinguished Professor at UCDavis and CEO of the Davis-Thompson Foundation, lectured on the "The Davis-Thompson Foundation's role" and on "The pathology residency programs in the United States of America and the certification exam of the American College of



Figure 2 Members of the Organizing Committee with Fabio Vannucci and Paco Uzal in the necropsy room.

Veterinary Pathologists". Dr Luary Carolina Martinez Chavarria, from National Autonomous University of Mexico (UNAM) spoke about the "Residency and master programs in the Faculty of Veterinary Medicine and Zootecnia of UNAM". Drs Maria Alejandra Quiroga, from National University of La Plata (NULP), Gabriela Postma from National University of Buenos Aires, Maria del Rocio Marini from National University of Litoral and Mariana Machuca from NULP presented and discussed experiences teaching histopathology and anatomopathology, including new tools used and exam methodologies.

In the Seminar, Dr Luary Carolina Martinez Chavarria shared 4 interesting diagnostic cases received at the UNAM for which the diagnosis was confirmed using molecular tools. Dr Francisco Uzal shared his experiences on diseases of feedlot cattle. Dr Pablo Piñeyro, from Iowa State University, spoke about swine diseases. Dr. Fabio Vannucci, from University of Minnesota, presented on Seneca virus and Porcine circovirus type 3 infections, and on the most frequent diseases of the respiratory and digestive tract system of swine. The Seminar finished with a hands-on necropsy workshop in the necropsy room of the FCV-UNR, attended by more than 50 colleagues, and led by Drs Uzal and Vannucci.



Figure 3. Dr. "Paco" Uzal in the necropsy workshop.



Figure 4. Attendees of the XVIII Seminar of the Argentinean Division of the Davis-Thompson Foundation

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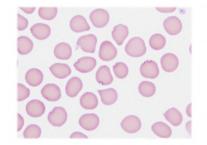




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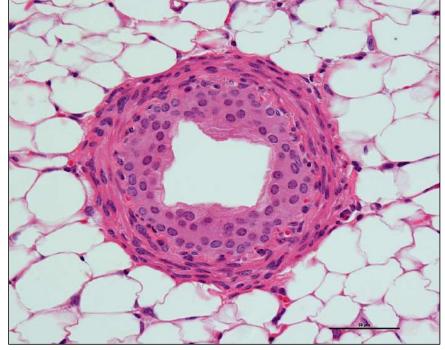


Figure 1. Tissue from a mouse. The **tunica media** of **medium-sized arteries** is thickened by concentric rings of excessive smooth muscle that is characteristic of **hypertensive arteriosclerosis***

*This is a **hypothetical example** of a pathology error which **misdiagnoses** a normal microanatomic/histologic structure (**mouse ureter**) as a lesion. Errors, omissions, or "false claims" in pathology data such as this are becoming **increasingly common in scientific journals**, especially those that **do not routinely include pathologists** in their peer review process. The ACVP Advocacy and Policy Committee and Board of Directors have therefore developed a <u>web submission portal</u> that will allow professionals with advanced pathology training to report concerns on substantiative errors in publications.

We need your help!

When you come across a pathology error published in a scientific journal, please take 5-10 minutes to fill out the anonymous survey on the <u>ACVP Errors in Publication web submission portal</u>. The information gathered from submissions to this web portal will be collated and used to compile the data needed to develop and promote publication standards and review procedures to improve the accuracy of published pathology data. Any data obtained will be maintained strictly in **anonymous** form and will greatly benefit the advancement of this initiative.

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PATHOLOGY COMMITTEE SUNDAY SEMINAR: PIG DISEASES SEMINAR



October 13th, 2024 2:00 PM-5:00 PM Gaylord Opryland Resort & Convention Center



Program:

- 2:00 Welcome Rachel J. Derscheid and Melissa Macías-Rioseco
- 2:10 Porcine Gastrointestinal Pathology and Laboratory Diagnosis of Disease- Dr. Eric Burrough
- 3:00 Break
- 3:10 Porcine Cardiopulmonary Pathology and Laboratory Diagnosis of Disease-Dr. Rachel J. Derscheid
- 4:00 Break
- 4:10 Diagnostic Approach to Neurological Infectious Diseases and PCV-Associated Diseases- Dr. Pablo Piñeyro



DR. ERIC BURROUGH DVM, PHD, DIPLOMATE ACVP Iowa State University College of Veterinary Medicine Veterinary Diagnostic Laboratory

Our Presenters:

DR. RACHEL J. DERSCHEID, DVM, PHD, DIPLOMATE ACVP

Iowa State University College of Veterinary Medicine Veterinary Diagnostic Laboratory



DR. PABLO PIÑEYRO, DVM, MVSC, DVSC, PHD Iowa State University College of Veterinary Medicine Veterinary Diagnostic Laboratory

Additional Questions:

- Melissa Macías-Rioseco: mmaciasrioseco@ucdavis.edu
- Rachel J. Derscheid: <u>rdersch@iastate.edu</u>

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October 12th, 2024 6:00 PM-8:30 PM

Interpretive Pathology Mock Exam

The AAVLD Pathology Committee is hosting the "interpretative pathology mock exam" (formerly the gross mock exam) aimed at preparing residents for the ACVP Anatomic Pathology Certification Exam (phase 2). Two mock exams will be offered by ACVP boardcertified pathologists. While this session is primarily designed for resident training, everyone is welcome.

Registration is required but the session is free to attend. Pizza and soft drinks will be served!

Program:

- 6:00-6:10 pm Welcome and Introduction: Eileen Henderson & Heidi Pecoraro
- 6:10-6:40 pm Mock exam 1: Melissa Macías-Rioseco
- 6:40-7:10 pm Review of mock exam 1: Melissa Macías-Rioseco
- 7:10-7:30 pm Break
- 7:30-8:00 pm Mock exam 2: Melissa Swan
- 8:00-8:30 pm Review of mock exam 2: Melissa Swan





Our Presenters:



Melissa Macías-Rioseco, DVM, MPVM, PhD, DACVP

> California Animal Health and Food Safety Laboratory, University of California-Davis



Melissa Swan, DVM, MS, DACVP

University of Kentucky

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Additional Questions:

-Eileen Henderson (eehenderson@ucdavis.edu) -Heidi Pecoraro (heidi.pecoraro@ndsu.edu)





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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 offcampus experience. For more information, contact Dr. Jim Britt, **jobritt@sbcglobal.net;** 501-912-1449.



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