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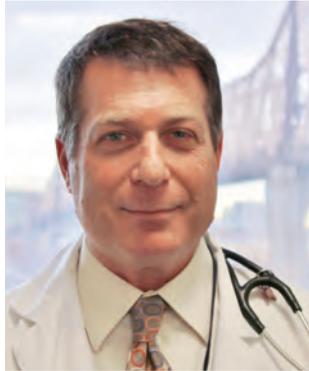
rDVM QUARTERLY

VETERINARY COMMUNITY NEWS FROM AMC

SUMMER 2017



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Dear Colleagues,

I am very pleased to present you with our Summer rDVM and alumni newsletter, the second one of 2017. In this edition, we are again highlighting what I feel to be some of our most unique and beloved services, such as our Avian & Exotics Service with our very own Dr. Kathy Quesenberry, and Oncology with Dr. Ann Hohenhaus. The exotics case is also special because it represents the kind of collaboration that happens here at AMC every day between services, in this case between Exotics and Interventional Radiology. The multitude and diversity of specialties truly is one of the most exciting things here. I always love (literally) bumping into amazing experienced specialists from 5-6 different services while just trying to make my way down the clinic hallway.

You would think things would quiet down in the summer—definitely not this year! Thanks to your amazing support, we are busier than we have been in many years; cages are full and things are hopping! Thank you! In addition, as always this time of year, we are in the midst of our house officer turnover, so I think it's appropriate to devote a few words to our educational program.

The Animal Medical Center graduated its first intern class 53 years ago! How crazy is that? Since then, thousands of veterinarians have received their advanced postgraduate training at AMC; the majority in a one-year rotating internship, and beginning just a short time after, our two- and now three-year residencies. AMC alumni are everywhere in academia, private practice, research, government, and really anywhere where a highly qualified veterinarian is needed. Even though I cannot really claim to be an AMC alum, it is a huge honor to be associated with this amazing group and I love nothing more than to meet with our alumni every day at AMC, in Manhattan, at national and international conferences—literally everywhere. Currently we have 22 rotating interns, five specialty interns, and about 30 residents, all focused on becoming smarter, better veterinarians to enhance the care of our current and their future clients.

Of course, none of this would be possible without your support. This is an amazing year for us and I am so grateful for the chance to work with all of you and to help you serve your client's needs. Thank you again for your tremendous support of the AMC. As always, contact me any time with any questions, comments, or concerns. I look forward to hearing from you.

Richard



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To Our Valued Partners In Care,

Summer at the Animal Medical Center means growth and change. We recently bid farewell to our 2017 class of graduating residents and interns and welcomed our incoming classes. We are so proud to see these doctors advancing in their careers, ensuring a bright future for the veterinary field.

In keeping with our commitment to the One Health Initiative, our third annual One Health Conference will take place here in New York City on November 4th. The One Health Initiative focuses on the collaboration between physicians and veterinarians in comparing similar, naturally occurring diseases that manifest in both people and animals – it will enable us all to better understand, diagnose, treat and even help prevent illness. This year's conference will focus on cardiology and will feature veterinary speakers not only from AMC, but from NC State, UPenn and the University of Wisconsin. Our medical speakers will join us from Columbia, Cornell, NYU, MSKCC and Le Bonheur Children's Hospital. I am so excited by the continued growth of this conference and look forward to seeing you there. Please check our website to register: www.amcn.org/onehealth.

In an effort to ensure we are meeting our referring veterinarian's and client's needs in the most effective manner, we are pleased to announce the appointment of Liana Everaert as Executive Director of Client Relations. Liana brings strong strategic planning, marketing, and sales experience in human healthcare, business development, and customer relations to this newly created position. Liana will further our commitment to providing the highest quality service to you and the clients you refer.

I hope you continue to find this publication useful and informative. Our hope is that you see it as a valuable resource for your practice. Please feel free to let us know if you have suggestions on how we can keep you informed about what we are working on here at AMC.

As always, I would like to thank you for being a valued partner and for your continued support of AMC.

Sincerely,

Kate



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Tracheal Stent Saves a Rabbit

Thanks to the collaboration between the doctors and staff of the Avian and Exotic Pet, Interventional Radiology, Diagnostic Imaging, and Surgery Services, little Winter, an 8-year-old female domestic rabbit, is hopping around as a happy rabbit at home with her family after a very close call. Winter was initially examined by Dr. Katherine Quesenberry of the Exotic Pet Medicine Service because her owner noticed blood in her urine for one week, and she seemed less active than normal. Winter's primary care veterinarian suspected a bladder mass after an abdominal ultrasound examination, and Winter was referred for further testing and possible surgery.

On physical examination, Winter was very bright and alert. Her urine appeared slightly orange, and her caudal mammary glands were enlarged with fluid-filled nipples. Full body survey radiographs showed a normal thorax, an empty bladder, and a tubular structure in the caudal abdomen, and an enlarged uterus was suspected to be the source of the blood. An abdominal ultrasound was done by Dr. Alexandre Le Roux and confirmed this tubular structure as uterus. The primary concern was neoplasia or uterine hyperplasia with venous aneurysm, and ovariohysterectomy was scheduled.

Winter was anesthetized routinely and intubated with a 2.5 mm uncuffed endotracheal tube for ovariohysterectomy and mammary gland resection. At surgery, Dr. Dan Spector removed an enlarged, blood-filled uterus and resected the abnormal mammary tissue. Winter recovered routinely from anesthesia and surgery and was discharged the next day. On histopathologic examination, the uterine mass was identified as hemangioma and leiomyoma, with cystic uterine hyperplasia consistent with progesterone influence and bilateral corpora lutea of the ovaries. The mammary tissue showed ectasia of the mammary ducts. Excision of tissues was considered curative.

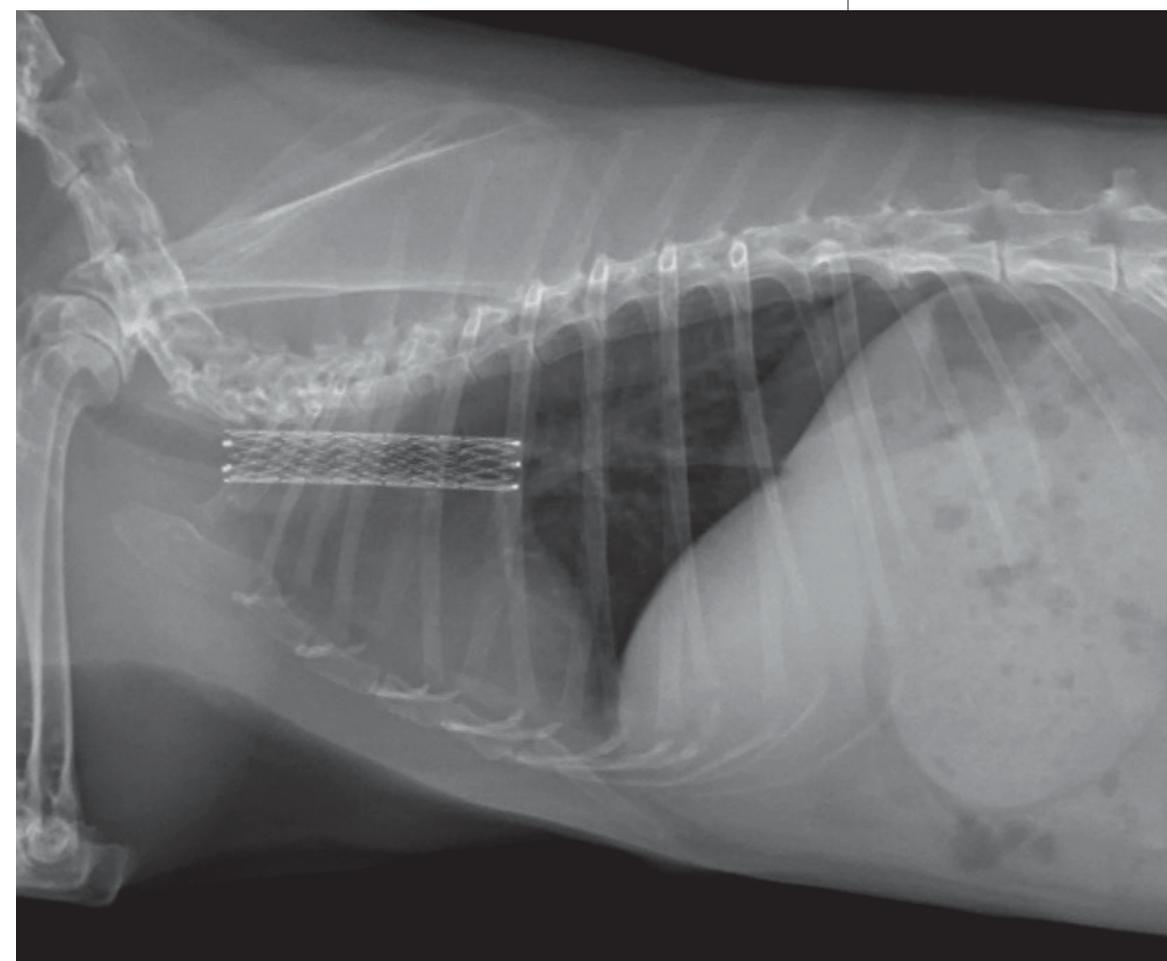
Eleven days after surgery, Winter was re-examined because of suspected nasal congestion that the owner had noticed a few days after surgery. Winter was otherwise behaving normally and eating and drinking well. Winter was started on oral antibiotics and the owner was advised to return if Winter did not improve. The next day, Winter was re-examined by Dr. Quesenberry because the breathing had become much more labored in the last 24 hours. On examination, Winter exhibited extreme respiratory stridor, with audible lung sounds bilaterally. A thoracic and neck radiograph showed extreme narrowing of the trachea approximately 11 cm from the glottis. The lungs appeared normal. The suspected cause was irritation from the tip of the endotracheal tube during anesthesia, causing inflammation and eventual tracheal stenosis in the postoperative period.

The only possible options for Winter were a tracheal stent or euthanasia. The owner, a human radiologist, understood the high risks of the stent procedure. But Winter was otherwise happy and healthy, and the owner and her family wanted to give Winter a chance. So, Dr. Chick Weisse of the Interventional Radiology Service came in for the emergency procedure that night. With the team approach of the Exotics, Interventional Radiology, and Diagnostic

Imaging Services, the exact steps of the procedure were decided on, as this had to be done without a second intubation. With careful planning, Winter was successfully anesthetized and a tracheal stent was placed. Immediately after the procedure, Winter recovered well and was breathing normally.

It has now been four months since the tracheal stent was placed and, so far, Winter is doing well and enjoying life as a normal rabbit with her family. Follow-up radiographs have shown no narrowing of the trachea since the stent was placed. In rabbits, tracheal stenosis is a rare but reported complication of tracheal intubation. However, of the thousands of rabbits that have been routinely intubated for procedures at AMC, this has been the only rabbit we have seen to develop this anesthetic complication.

Thanks to the high level of cooperation and coordination of the services and the experience of our veterinary staff at the AMC, even rabbits and other exotic pets can benefit from the advanced diagnostic and treatment techniques available for small animals. For exotic pets and their owners, AMC offers a level of experience and care, diagnostic services, and treatment options like no other veterinary referral center in the New York City metropolitan area.





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First Patient Successfully Completes Cancer Institute Hemangiosarcoma Trial

Meet Dutch, an 11 year old Bullmastiff. He is the first dog to complete AMC's chemo-immunotherapy clinical trial for canine hemangiosarcoma, which is being performed in conjunction with CSU's Flint Animal Cancer Center. In November of 2016, a hemoabdomen sent Dutch to the operating room, where an emergency splenectomy was performed and hemangiosarcoma diagnosed. Dutch's family learned of the Cancer Institute's chemo-immunotherapy clinical trial for hemangiosarcoma from their regular veterinarian and he was the first dog of a planned 40 dogs to be enrolled in the study.



Hemangiosarcoma is a devastating disease and even with splenectomy, dogs have only a median survival of less than two months. Current standard of care is five treatments of doxorubicin chemotherapy which modestly increases the median survival time following splenectomy to 4-6 months.

The Cancer Institute's clinical trial exploits the immunomodulatory capacity of a human antihypertension medication, losartan. At high doses, this drug has been shown to decrease monocyte activation, a process necessary for metastasis. Metastasis causes death in nearly all dogs with hemangiosarcoma. The study protocol prescribes standard of care doxorubicin chemotherapy for all dogs. Because the study is a prospective, randomized, blinded clinical trial, half the dogs will receive high dose losartan and the other half placebo pills.

Although Dutch was the first to finish, six more dogs have been entered into this study and we are still looking for 14 more. Study participant dogs will be enrolled for four months of treatment. At the end of the study period, dogs will be screened for metastasis using abdominal ultrasound and thoracic radiographs. Diagnostic imaging required by the study and losartan or placebo are provided to the patient at no cost. Chemotherapy related visits are offered at 75% off the regular fee for dogs enrolled in the study.

To inquire about enrolling a patient, contact Dr. Ann Hohenhaus at ann.hohenhaus@amcny.org.

Gross Pathology: What's Your Morphologic Diagnosis?

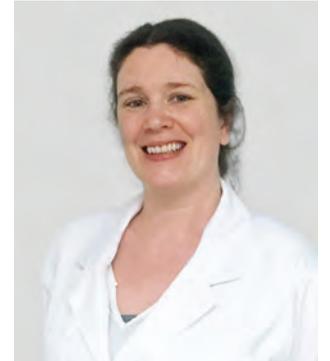
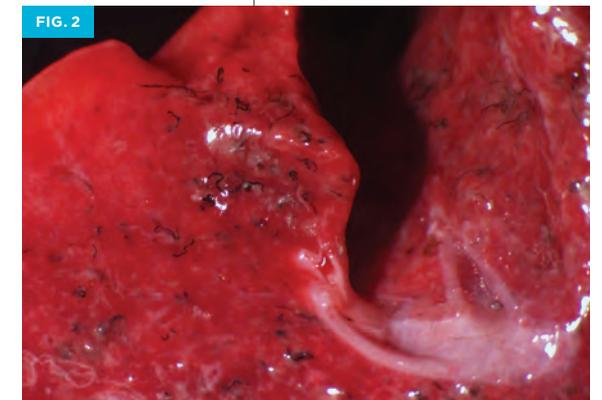
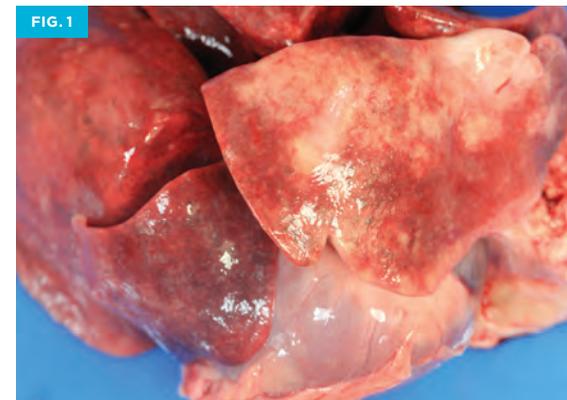
Signalment: 1 year-old, female spayed French bulldog

History: A 1 year-old, female spayed French bulldog presented to the Emergency Service for progressive tachypnea and dyspnea with nasal discharge. She had a history of chronic *Bordetella* infection and severe colitis with weight loss, for which she was managed with prednisone, amikacin nebulization, Fortiflora, and Tylan powder. At presentation, the SpO2 was 82% on room air and thoracic radiographs showed a patchy interstitial-to-alveolar pulmonary pattern. Venous blood gases revealed a mixed respiratory and metabolic acidosis with hyponatremia. Euthanasia was elected due to a lack of response to appropriate medical management.

Necropsy findings: The lungs are firm and mottled medium to dark red. Sections of the right cranial, right middle, and left cranial lung lobes sink in 10% buffered formalin (consolidation). Sections of the left caudal lung lobe float low in formalin and sections from the right caudal lung lobe float in formalin. Generalized over all lung lobes are dozens of pinpoint (less than 1 mm), black to tan, round to linear foci. (Figure 1) Sections obtained from the lung lobes are further evaluated with dissection microscope. Sections of the airways contain myriads of thin, hair-like, black parasites within a serosanguinous and mucopurulent fluid. (Figure 2) Parasites are linear and are up to 3 mm in length.

Within the trachea and bronchial lumens are copious amounts of a foamy, serosanguinous fluid and a thick, tan mucopurulent material. The latter is most prominent in the right main stem bronchi. Gross evaluation of the trachea and main stem bronchi does not reveal obvious mucosal nodules. The soft palate is elongated, the laryngeal sacculles are everted, and there is a markedly hypoplastic dorsal tracheal membrane with overlapping of the tracheal rings (brachycephalic syndrome).

Please formulate differential diagnoses based upon the history, clinical findings and images before turning the page.



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Histology: Filling and expanding 30-50% of the alveolar spaces and bronchiole lumens are numerous sections of larvae and adult nematodes. (Figures 3-6) Adult nematodes are 100 um wide with a smooth cuticle, a pseudocoelom, coelomyarian musculature, lateral cords, and reproductive and intestinal tracts. The intestinal tract is lined by few multinucleate cells and intestinal lining cells commonly contain hemosiderin. Uteri contain ova and developing larvae. Filling alveoli and bronchiole lumens are numerous macrophages, neutrophils, lymphocytes, plasma cells, and multinucleated giant cells admixed with necrotic cellular debris, erythrocytes, and fibrin. The alveolar septa are mildly expanded by similar inflammatory cells and fibroblasts and are multifocally lined by hyperplastic type II pneumocytes. The pleural surface is multifocally expanded by fibrin admixed by few macrophages, neutrophils, and lymphocytes.

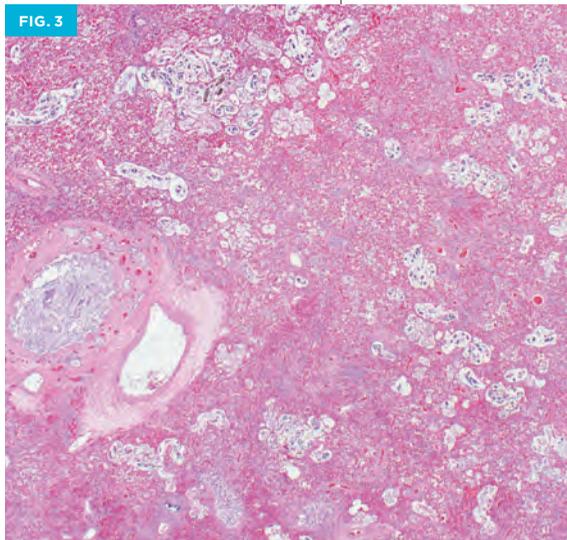


FIG. 3

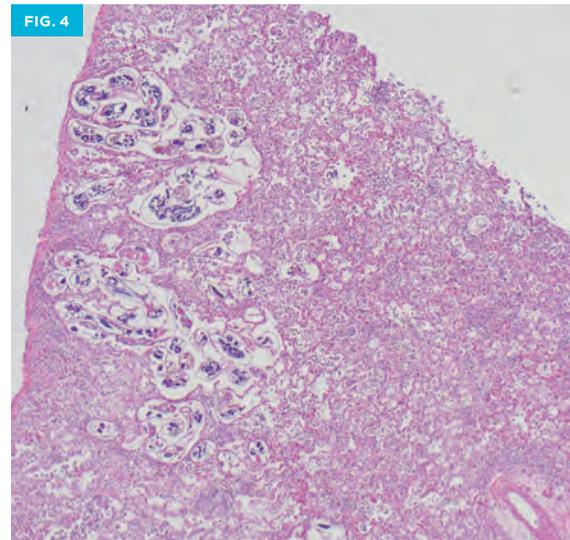


FIG. 4

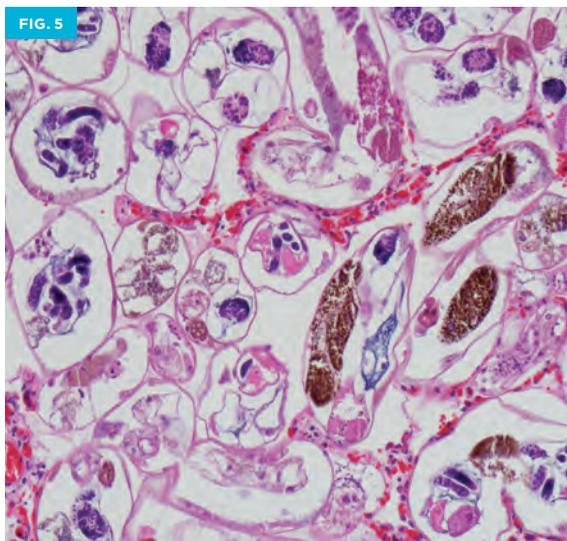


FIG. 5

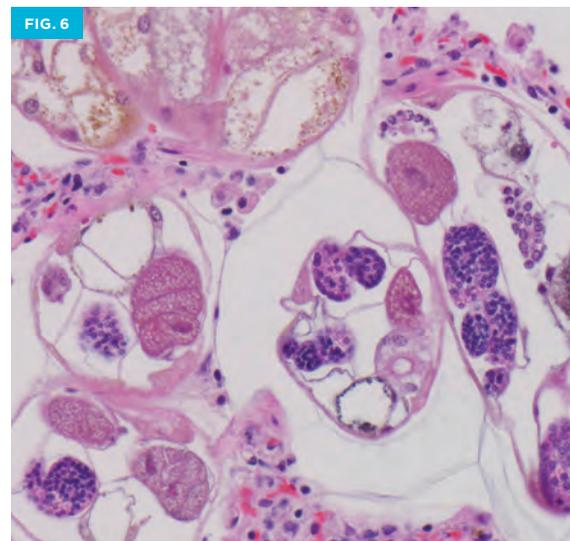


FIG. 6

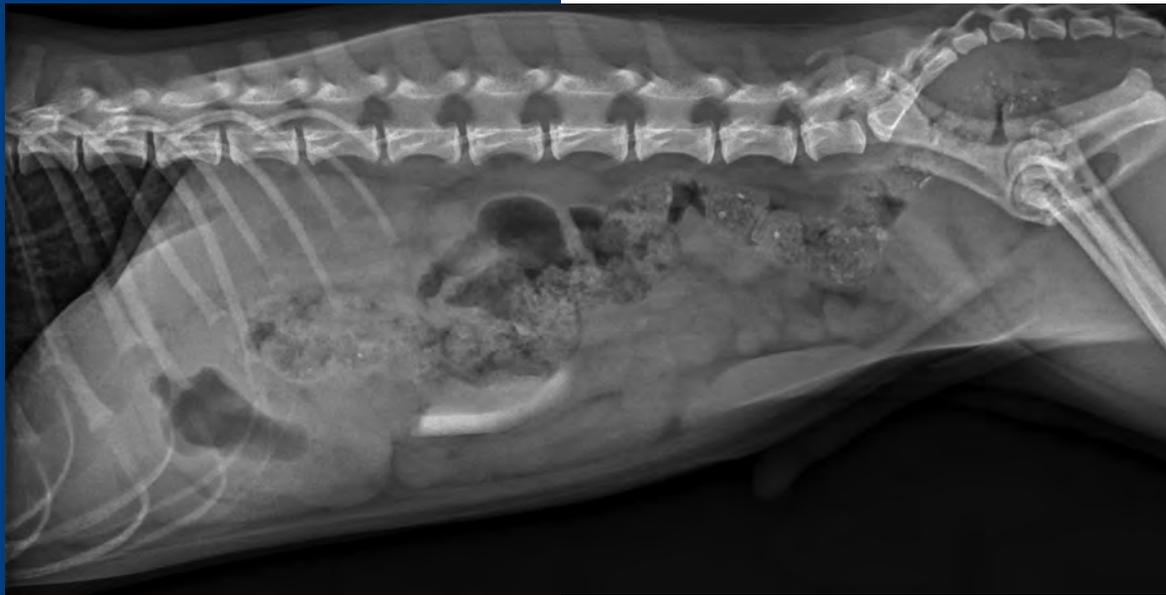
Morphologic diagnosis: Pneumonia (bronchopneumonia and interstitial pneumonia), neutrophilic, lymphoplasmacytic, histiocytic with numerous intral-lesional metastrongyle nematodes (morphology consistent with *Filaroides spp.*), type II pneumocyte hyperplasia, fibroplasia, and multifocal fibrinous pleuritis.

Comments: The gross finding of miliary 1-5 mm wide, grey-white foci within the lungs with intraparenchymal nematodes is consistent with a verminous pneumonia. Differentials for verminous pneumonia in the canine include *Eucoleus aerophilus* (*Capillaria aerophila*), *Oslerus osleri* (*Filaroides osleri*), *Crenosoma vulpis*, *Filaroides hirthi*, and *Andersonstrongylus milksi* (*Filaroides milksi*), *Dirofilaria immitis*, and *Angiostrongylus vasorum*.⁴ In this case, the nematodes' histologic features (i.e. type of musculature, strongyloid intestinal tract, and pseudocoelom) are typical of a metastrongylus nematode⁵, which include *Oslerus osleri*, *Filaroides hirthi*, *Andersonstrongylus milksi*, and *Angiostrongylus vasorum*. Based on the location of the nematodes within the alveolar spaces and bronchiole lumens, both *O. osleri* and *A. vasorum* are not considered the etiologic agent. *O. osleri* typically embed within the tracheal and bronchial mucosa where they form grossly and microscopically obvious inflammatory nodules.⁴ The adult nematodes of *A. vasorum*, also known as the French heartworm, are located within the pulmonary arteries where they incite a severe endarteritis.⁴ *Filaroides hirthi* and *Andersonstrongylus milksi* are both located within alveolar spaces and bronchioles and can have similar pathologic findings. Therefore, differentiation between the two is typically by evaluation of intact worms.^{1,4} However, given the relative prevalence of the two and the hyperinfection seen in this case, *Filaroides hirthi* is most likely.⁴

Filaroides hirthi, unlike most other metastrongyles, has a direct lifecycle and thus does not require an intermediate host for transmission.¹⁻⁴ Transmission occurs via ingestion of infective L1 larvae from either ingestion of infected feces, regurgitated stomach material, or lung tissue; or during nursing.¹⁻⁴ From the intestinal tract, the L1 larvae migrate to the lungs via hepatic portal circulation and/or mesenteric lymphatic drainage.¹⁻⁴ Migrating larvae can be identified histologically in multiple tissue, most notably the mesenteric lymph nodes.⁴ Once at the lungs, the larvae develop through four additional larval stages (L1-L5) and adult female deposit larvated eggs or larvae. Larvae are then coughed up, swallowed, and leave the body via infected feces.¹⁻⁴ *F. hirthi* has a wide spectrum of disease ranging from clinical silence to severe cough and dyspnea, with the most severe manifestations seen in immunocompromised patients.^{2-4,6} There are multiple reports of *F. hirthi* hyperinfection within immunocompromised dogs. Immunocompromised patients are hypothesized to have a diminished stage specific immune response against the L1 larvae. This allows for unremitting migration of L1 larvae from their own gut allowing for continual autoinfection.^{3,6} Hyperinfection in the described patient is attributed chronic to steroid administration.

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5. Gardiner CH, Poynton SL. *An Atlas of Metazoan Parasites in Animal Tissues*. Washington, DC: Armed Forces Institute of Pathology; 1999:22, 27.
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What's your diagnosis?

Anthony Fischetti, DVM, MS, DACVR
Head of Diagnostic Imaging

A 10-month-old male, neutered mixed breed dog presented to the AMC's Emergency Service for vomiting over the past two days. On physical exam, the dog was mildly dehydrated without pain on abdominal palpation. Point-of-care blood work showed mild hypochloremic metabolic alkalosis. Radiographs were obtained to further evaluate these clinical signs.

What's your diagnosis?

Turn to page 14 for the diagnosis and case discussion.

CLINICAL TRIALS/ CURRENT STUDIES

Cardiology

Assessment of safety and effectiveness of Lasix administered by IV bolus compared with constant rate infusion to treat dogs with first time congestive heart failure

Dentistry

Comparison of treating early canine periodontal disease with closed root planing alone versus concurrent use of doxycycline hyclate gel or clindamycin hydrochloride hydrogel

Internal Medicine

Assessment of symmetric dimethylarginine (SDMA) and creatinine concentrations in cats with post-renal obstructions before and after decompression of the obstruction

Comparison of constant rate intravenous infusion and intermittent intramuscular administration of regular insulin in cats with diabetic ketoacidosis

Evaluation of the relationship between cobalamin and folate deficiencies and anemia in dogs

Interventional Radiology & Interventional Endoscopy

Allogeneic stem cell delivery for cats with chronic kidney disease. Phase I: Safety

Autogenous stem cell delivery for chronic kidney disease. Phase II: Efficacy

Treatment of extrahepatic biliary duct obstruction (EHBDO) in dogs and cats by endoscopic retrograde cholangiopancreatography (ERCP) with biliary stent placement or the use of a rescue Subcutaneous Intestinal Biliary Bypass Device (SIBB)

Drug-eluting bead chemoembolization for non-resectable hepatocellular carcinoma (HCC) in dogs

Oncology

Evaluation of efficacy and safety of feline interleukin-2 immunomodulator following surgical excision of feline fibrosarcoma

Leukocytes infiltrating canine solid tumors may harbor oncogenic mutations

Combination chemotherapy and immunotherapy for dogs with splenic hemangiosarcoma

Radiation Oncology

Stereotactic Body Radiation Therapy (SBRT) for the treatment of nasal adenocarcinoma in the canine

For additional details and contact information for these studies, please visit amcny.org/clinicaltrials.

CONTINUING EDUCATION LECTURE SERIES

These events are open to all area veterinarians and technicians and are FREE of charge. All lectures are held at AMC from 8:00–9:00 am, unless otherwise noted. AMC lecture topics are subject to change. Please visit amcny.org/celectures or email education@amcny.org for up-to-date information. You may also sign up to receive email updates. All Partners In Practice (PIP) lectures are free and CE accredited, but require registration. Visit our Partners In Practice page to register today at amcny.org/pipseminars, as these events fill up quickly.

Upcoming Lectures

AMC's continuing education lecture series will resume in September. Please refer to our website for more information.

PIP COMPREHENSIVE CLINICAL CONFERENCES

Partners In Practice Comprehensive Clinical Conferences are intended to provide several hours of comprehensive review and updates of important and contemporary topics in veterinary medicine. Upon completion, participants should gain enhanced knowledge of the selected topic. Conferences are held at AMC on Sundays from 9:00 am–3:00 pm and are both RACE and NYSED approved.

Sunday, September 10

Behavior

Sunday, November 12

LVT Lecture – New and Practical Updates

PIP PRACTICAL CLINICAL WORKSHOPS

Partners In Practice Practical Clinical Workshops are designed to promote sound diagnosis and effective therapies. Bring and share case materials if you wish! Participate in our time-honored teaching rounds and small group, interactive workshops. Space is limited to 15 participants, so register today! These PIP Workshops are held at The AMC on Tuesday evenings from 7:00–8:30 pm and are NYSED approved.

Tuesday, September 12

Dentistry

Presented by Dr. Django Martel

Tuesday, October 17

Cardiology

Presented by Dr. Phil Fox

Tuesday, November 21

Common Emergency Toxicities

Presented by Dr. Carly Fox

Tuesday, December 12

Exotic Medicine

Presented by Dr. Katherine Quesenberry

RESEARCH HIGHLIGHTS

AMC doctors contributed to a number of research publications as well as national and international conference presentations during the first half of 2017.

Collaborative publications (AMC clinicians in bold font) reported a wide range of research initiatives. These involved cardiovascular pathology, including a new form of feline cardiomyopathy, *Bartonella* infection of the heart and systemic organs, and right heart cardiomyopathy in Boxer dogs; investigation into causes of canine splenectomy; outcomes following urethral stenting in dogs; causes of retinal degeneration, mycotic eye disease in canines; opportunities involving partnerships between academia and private practice; and emergency and critical care investigating markers of inflammation in anemia, micturition disorders, and effects of colloids on blood coagulation; and trauma. In addition, two competitive research grants were awarded to Dr. Dennis Trafny by ACVIM Cardiology specialty to study echocardiographic predictors of CHF in dogs and for a clinical trial to investigate efficacy of isosorbide dinitrate for CHF therapy.

AMC clinicians have been invited speakers at national conferences including NAVC (Drs. Goldstein and Fox); WSAVA (Dr. Goldstein); ACVIM (Drs. Fox, Weisse, Berent, and Goldstein), and at international conferences including India VMA (Dr. Fox), Italy VMA (Dr. Weisse), and BSAVA (Drs. Weisse and Berent).

SCIENTIFIC PUBLICATIONS

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Gottlieb DL, Prittie J, Buriko Y, Lamb KE. Evaluation of acute traumatic coagulopathy in dogs and cats following blunt force trauma. *J Vet Emerg Crit Care (San Antonio).* 2017 Jan;27(1):35-43.

Vachon C, Defarges A, Brisson B, Nykamp S, Weese JS, Denstedt J, **Berent AC.** Passive ureteral dilation and ureteroscopy after ureteral stent placement in five healthy Beagles. *Am J Vet Res.* 2017 Mar;78(3):381-392.

Pera J, Palma D, Donovan TA. Eosinophilic Esophagitis in a Kitten. *J Am Anim Hosp Assoc.* 2017 May 23. doi: 10.5326/JAAHA-MS-6367.

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Vila J, Pariaut R, Moïse NS, Oxford EM, **Fox PR,** Reynolds CA, Saelinger C. Structural and molecular pathology of the atrium in boxer arrhythmic right ventricular cardiomyopathy. *J Vet Cardiol.* 2017 Feb;19(1):57-67.

Oxford EM, Pariaut R, Tursi M, **Fox PR,** Santilli RA Immunofluorescent localization of plakoglobin in endomyocardial biopsy samples to diagnose arrhythmogenic right ventricular

cardiomyopathy (ARVC) in the dog. *Abst ACVIM. JVIM* 2017.

Wallner M, Berretta RM, Eaton DM, Borghetti G, Wu J, Baker ST, Troupes CD, Sharp TE, Feldsott EA, Oyama MA, **Fox PR,** Wolfson MR, Houser SR. Cardiopulmonary characterization of a feline HFpEF model induced by slow progressive pressure overload. *Eur Heart Failure J*, presented at Fourth Heart Failure Congress, Paris, France. *Abstr* 2017.

ABOUT THIS NEWSLETTER

This newsletter is distributed quarterly to AMC's network of referring veterinarians, alumni and others who opt-in to receive this publication. To view past issues or to join our mailing list, please visit amcny.org/rdvm quarterly. If you are an AMC alumna who would like to sign up to receive periodic updates, please visit amcny.org/amc-alumni-registration.

To receive our current staff directory or if you have questions, email info@amcny.org.

For access to the AMC Patient Referral Form, visit amcny.org/referralform.

Cover photo courtesy of Corey Towers

Designed by Anthony Coombs



AMC Dedicated Phone Numbers for Referring Veterinarians

AVIAN & EXOTICS

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9 am – 5 pm

CARDIOLOGY

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Dr. Betsy Bond
Dr. Dennis Trafny
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Monday – Sunday
9 am – 5 pm

DENTISTRY

Dr. Dan Carmichael
Dr. Stephen Riback
Dr. Django Martel
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Monday – Friday
9 am – 5 pm

DERMATOLOGY

Dr. Mark Macina
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9 am – 5 pm

INTERNAL MEDICINE A

Dr. Beth Appleman
Dr. Carly Bloom
212-329-8619
Monday – Sunday
9 am – 5 pm

INTERNAL MEDICINE B

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Dr. Dennis Slade
212-329-8675
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Dr. Alexandra van der Woerd
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Tuesday 10 am – 5 pm
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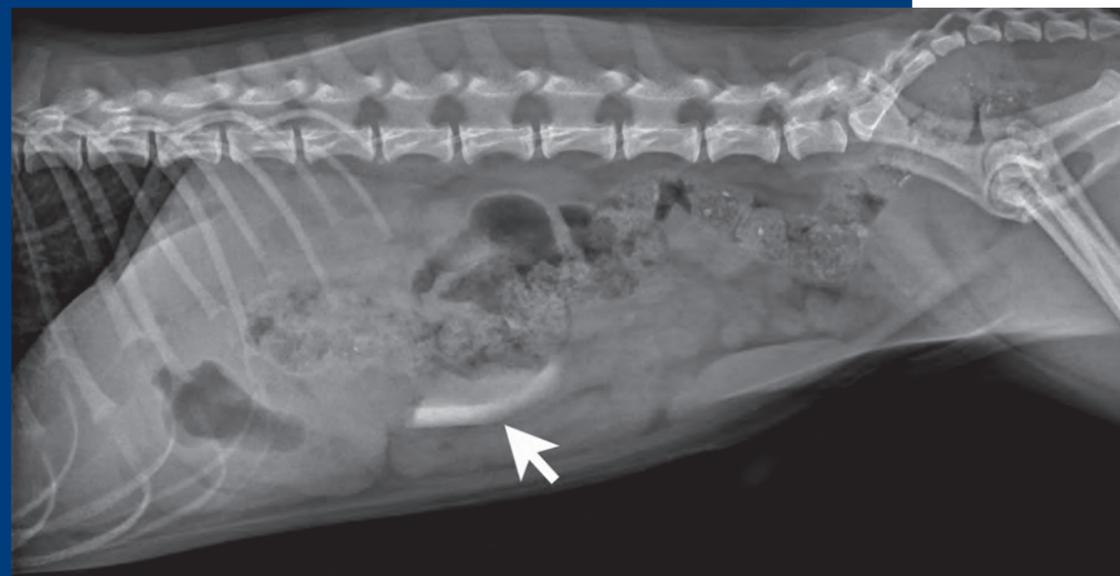
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ONE HEALTH PROGRAM SPEAKERS:

TOPIC	DVM	MD
Cardiac Genomics	Kate Meuers NSCU	Jeff Towbin Le Bonheur Children's Hosp.
Endomyocardial Biopsy	Taryn Donovan AMC	Navneet Narula Weill Cornell Medicine
Pathophysiology Mitral Valve Prolapse	Mark Oyama Univ. of Penn.	Giovanni Ferrari Univ. of Penn.
Echocardiography	Dennis Trafny AMC	Rebecca Hahn Columbia Univ. Medical Ctr.
Hypertrophic Cardiomyopathy	Philip Fox AMC	Mark Sherrid NYU Langone Medical Ctr.
Pulmonary Hypertension and Tracheomalacia	Rebecca Stepien Univ. of Wisconsin	Mohit Chawla MSKCC

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What's your diagnosis?

A well-margined curvilinear mineral opacity is within a loop of intestine in the cranioventral abdomen (arrow). Serosal detail is decreased throughout the abdomen because of the young age of the dog. This makes assessment of small intestinal distention difficult; however, obstruction is suspected because of the degree of fluid distention of the stomach. The curvilinear mineral foreign body is difficult to identify on the VD but may be present to the right of LI.

Diagnosis: 1. Small intestinal mechanical obstruction secondary to foreign body.

Discussion/Outcome: A fragment of rubber ball wall was removed from the proximal jejunum at surgery and the dog recovered uneventfully.

This case illustrates factors influencing our ability to identify foreign material on radiographs. The foreign body was rubber, NOT mineral in make-up. Regardless, it will attenuate as a mineral (or bone) opacity if the object is very dense (as rubber can be). The inability to see the foreign body on the VD view has to do with the shape of the foreign body. On the VD, the x-rays are passing through the flat part of the fragment. On the lateral, the x-rays are passing through the dense part of the rubber tangentially.

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