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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Kate

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.amcny.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

Kathryn Coyne
CEO
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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.
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 hemoadenmen 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.
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 surface is multifocally expanded by fibrin admixed by few macrophages, neutrophils, and lymphocytes.

Morphologic diagnosis: Pneumonia (bronchopneumonia and interstitial pneumonia), neutrophilic, lymphoplasmacytic, histiocytic with numerous intraluminal metastastrongyle 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 aerophilus), Oslerus osleri (Filaroides osleri), Crenosoma vulpis, Filaroides hirthi, and Andersonstrongylus milksi (Filaroides milksi), Dipetalonema immitis, and Angiostrongylus vasorum. In this case, the nematodes’ histologic features (i.e. type of musculature, strongyloid intestinal tract, and pseudocoelom) are typical of a metastrongylus nematode 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. The adult nematodes of A. vasorum, also known as the French heartworm, are located within the pulmonary arteries where they incite a severe endarteritis. 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. However, given the relative prevalence of the two and the hyperinfection seen in this case, Filaroides hirthi is most likely.

Filaroides hirthi, unlike most other metastrongyles, has a direct lifecycle and thus does not require an intermediate host for transmission. Transmission occurs via ingestion of infective L1 larvae from either ingestion of infected feces, regurgitated stomach material, or lung tissue, or during nursing. From the intestinal tract, the L1 larvae migrate to the lungs via hepatic portal circulation and/or mesenteric lymphatic drainage. Migrating larvae can be identified histologically in multiple tissue, most notably the mesenteric lymph nodes. 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. 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. 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. Hyperinfection in the described patient is attributed chronic to steroid administration.

References:
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.
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, myocytic eye disease in canines; opportunities involving partnerships between academia and private practice; and emergency and critical care investigating markers of inflammation in anemia, mucitutio disorders, and effects of colloid 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 (Drs. 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).


**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/rdvem-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**
- Dr. Kathy Quesenberry 212-329-8888
- Dr. Cyndi Brown 212-329-8700

**CARDIOLOGY**
- Dr. Philip Fox 212-329-8701
- Dr. Dennis Trafny 212-329-8700

**DERMATOLOGY**
- Dr. Mark Macina 212-329-8777
- Dr. Mark Macina 212-329-8777

**INTERNATIONAL MEDICINE A**
- Dr. Beth Appleman 212-329-8819
- Dr. Carly Bloom 212-329-8819

**INTERNATIONAL MEDICINE B**
- Dr. Douglas Palma 212-329-8675
- Dr. Dennis Slade 212-329-8675

**NEUROLOGY**
- Dr. Chad West 212-329-8700
- Dr. Allyson Berent 212-329-8700

**ONCOLOGY**
- Dr. Nicole Leibman 212-329-8700
- Dr. Ann Hohenhaus 212-329-8700

**OPHTHALMOLOGY**
- Dr. Alexandra von der Woerd 212-329-8813
- Dr. Alicia Sheidkun 212-329-8813

**RADIOLOGY & INTERVENTIONAL RADIOLGY**
- Dr. Chick Weisse 212-329-8700
- Dr. Allyson Berent 212-329-8700

**REHABILITATION & INTEGRATIVE MEDICINE**
- Dr. Leilani Alvarez 212-329-8860
- Dr. Barry Carpenter 212-329-8860

**SURGERY**
- Dr. Paramvir Dhillon 9 am – 5 pm Monday – Friday
- Dr. Rob Hart 212-329-8874

**VETERINARY COMMUNITY NEWS FROM AMC | SUMMER 2017**

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REGISTER NOW
Saturday, November 4, 2017
8am – 4pm
Animal Medical Center’s 3rd Annual One Health Conference:
Connecting Human and Veterinary Medicine, A Comparative Approach to Cardiology
Weill Cornell Medicine
Belfer Research Building
413 East 69th Street
New York, NY 10021
Register at: amcny.org/onehealth

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 it.

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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