



VIRGINIA-MARYLAND COLLEGE
OF VETERINARY MEDICINE

Biomedical Sciences and
Pathobiology
205 Duck Pond Drive, Blacksburg, VA
24061
vetmed.vt.edu

Francisco R. Carvalho DVM, DSc, DACVP
205 Duckpond Dr.
Blacksburg, VA 24061
Phone: (540) 231-7578

Respiratory Pathology Mystery Slide Case # 1

Authors: Francisco R. Carvalho DVM, DSc, DACVP

History/Signalment: A four-year-old neutered male domestic cat with history of hyporexia and respiratory distress of approximately 5 days. A presumptive diagnosis of cardiac failure in Emergency room. Bloodwork revealed azotemia and hyperglycemia although glucose dropped to normal over next 24h. After 4 days of supportive care, the owner selected euthanasia. This cat was perfectly healthy previous to this episode.

Gross Pathology: Abundant (15 mL) red tinged fluid were collected from the thorax. The lungs were diffusely mottled red and slightly firm. The heart weight was 22 g. The left ventricular wall was markedly thickened, with a very narrow ventricular cavity (interpreted as hypertrophic cardiomyopathy).



Amanda Huffman, DVM
Anatomic Pathology Resident
Zoological Pathology Program
Office: 217-300-8695
amandah8@illinois.edu**Respiratory Pathology Mystery Slide
Case # 2**

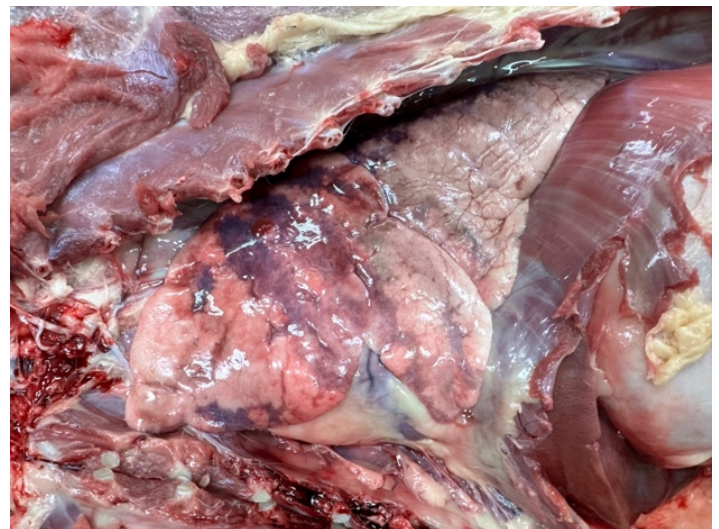
Authors: Amanda M. Huffman, DVM; Martha A. Delaney, DVM, MS, PhD, Dipl. ACVP (University of Illinois at Urbana-Champaign, College of Veterinary Medicine, Zoological Pathology Program)

History/Signalment: 11-year-old, intact female snow leopard (*Panthera uncia*) presented for four-month history of intermittent vomiting. At previous examination, she was diagnosed with chronic renal failure with significant proteinuria, and despite treatment had continued to decline. Due to lack of improvement with treatment and poor prognosis, humane euthanasia was elected.

This individual also had a previous history of clinical SARS-CoV-2 infection in November 2021 (15 months prior to euthanasia). Recent radiographs showed bronchiolar changes. No clinically evident respiratory disease was reported at the time of euthanasia.

Gross Pathology: The leopard was in fair body condition with muscle and fat atrophy. Lungs were mottled dark red, pale pink, and tan. Caudodorsal, caudal middle and to a lesser extent portions of the cranial lobes were slightly rubbery and did not fully collapse. Dark red areas, predominantly in cranial lobes, exuded red watery fluid on cut section and floated just below the surface in 10% neutral buffered formalin (edema, presumed). Along the caudodorsal pleura of both lungs were multiple pinpoint to 2 mm diameter slightly raised white foci (endogenous lipid pneumonia, presumed). The tracheal mucosa was diffusely, mildly reddened.

Other significant gross findings included chronic nephropathy with hydronephrosis, hydroureter, and ureterolithiasis.



Respiratory Pathology Mystery Slide
Case # 3

Authors: Michael Pawlik, BSc, DVM, MVSc, Dipl. ACVP (BC Ministry of Agriculture)

History/Signalment: An adult, female, English Sole (*Parophrys vetulus*), estimated to be about 6 years old, was caught along the coast of British Columbia and submitted to the PAHB for post-mortem examination.



Gross Pathology: There are 4 pairs of gill arches, each giving rise to two rows of gill filaments. Within the core of every filament is a ray of cartilage that provides structural support. Like the barbs of a feather, each filament is further divided into an array of highly vascularized plates known as gill lamellae.

There are a number of filaments on every arch with a variety of lesions. The lesions are generally mild to moderate but widespread. The tips of the gill filaments are often firm and bulbous. There are patches of pallor scattered throughout the length of the filaments where the gill lamellae are thickened. Affected areas are often associated with a mild accumulation of mucus and debris between gill filaments. Occasionally, there is a prominent firm nodule in the middle of the filament arising from the gill ray cartilage.



Oregon State University
Oregon Veterinary
Diagnostic Laboratory

Oregon Veterinary Diagnostic Laboratory

Carlson College of Veterinary Medicine
134 Magruder Hall
Corvallis, Oregon 97331-8555

P 541-737-3261

F 541-737-6817

<http://vetmed.oregonstate.edu/ovdl>

Respiratory Pathology Mystery Slide

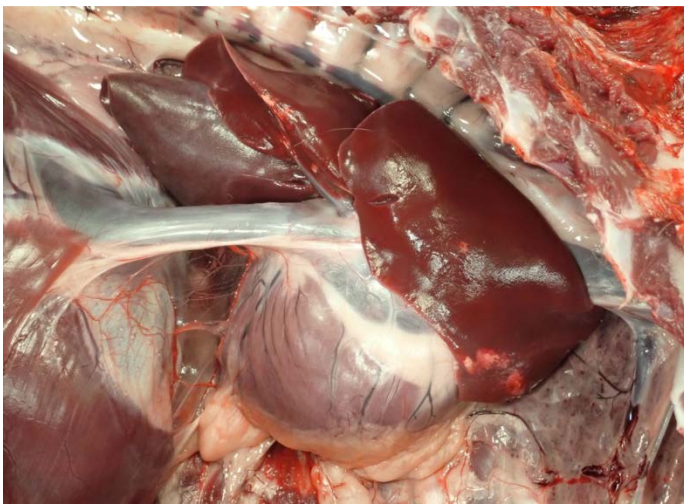
Case # 4

Authors: Samantha Polk, BVMS (Oregon State University), Ida Phillips, DVM, PhD, Dipl. ACVP (North Carolina State University), Elizabeth Ihms, DVM, PhD, Dipl. ACVP (Oregon State University)

History/Signalment:

A healthy 11-month-old male goldendoodle presented to the primary care veterinarian for routine neuter and gastropexy procedure. During surgery the gastropexy site was changed to the right caudal diaphragm because tissues at typical pexy sites seemed friable. A small leak developed in the diaphragm at the attachment site which was immediately closed. Three manual breaths were given to assess the integrity of the closure. Shortly thereafter the diaphragm stopped contracting and the patient went into cardiac arrest. Manual cardiopulmonary resuscitation was performed, and a small amount of air was removed from the chest via thoracocentesis. The patient did not respond to the intervention.

Gross Pathology: Negative pressure was present in the thoracic cavity; the diaphragm was markedly concave. All lung lobes were severely collapsed and dark red. Two (0.5cm x 0.5cm and 0.5cm x 1cm) hemorrhagic bullae were present in the left cranial lung lobe. The antrum/pylorus was sutured to the right diaphragm muscle with a simple continuous suture, over 3cm. On cut section of formalin-fixed lung, the pulmonary parenchyma was diffusely collapsed. Multiple airways were completely, or partially, collapsed.



Mayra Tsoi DMV, PhD, Dip. ACVP
4125 Beaumont Rd
Lansing, MI 48910
tsoimayr@msu.edu
(517) 432-6290

Respiratory Pathology Mystery Slide

Case # 5

Authors: Mayra F. Tsoi, DMV, PhD, Dipl. ACVP (Michigan State University); David K. Meyerholz, DVM, PhD, Dipl. ACVP, Dipl. ACVM (University of Iowa); Kurt J. Williams, DVM, PhD, Dipl. ACVP (Oregon State University)

History/Signalment: A two-year-old mixed breed dog had a history of chronic pneumonia. Right middle lung lobectomy was performed.

Gross Pathology: The right middle lung lobe was subjectively small and had multifocal collapsed regions. Bronchi were dilated and were filled with thick, gelatinous plugs of mucus.

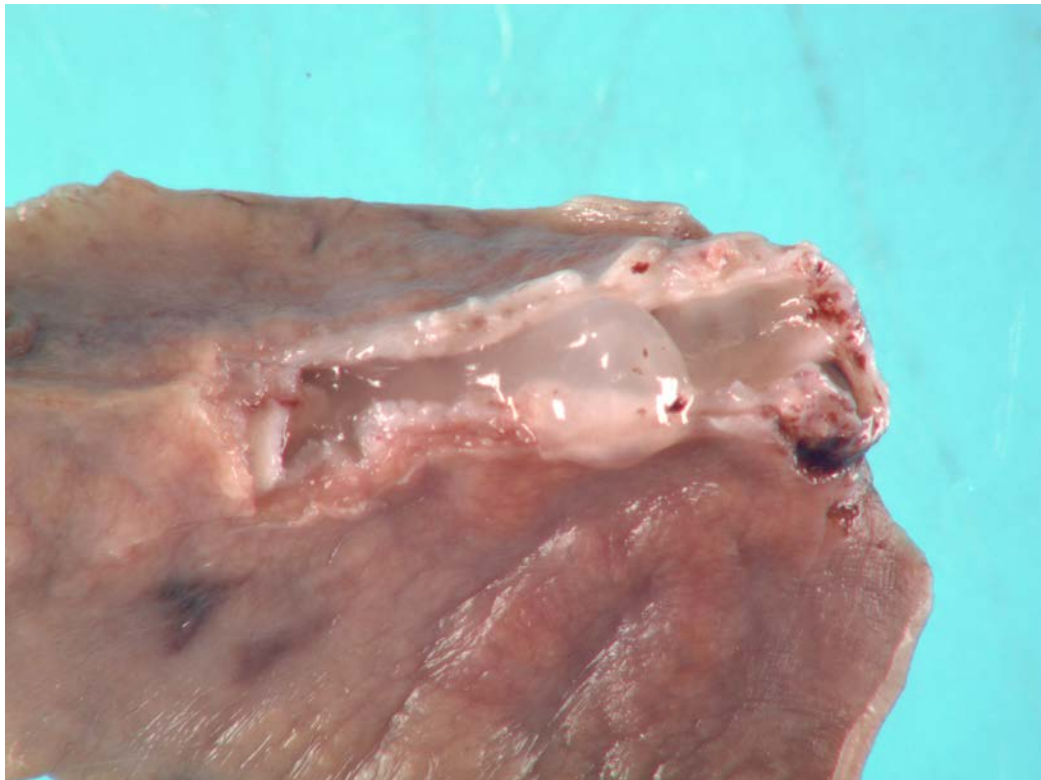


**College of
Veterinary Medicine**

Veterinary Diagnostic
Laboratory

Michigan State University
4125 Beaumont Road
Lansing, MI 48910-8104

517.353.1683
Fax: 517.353.5096
animalhealth.msu.edu





University of
New Hampshire

NH Veterinary
Diagnostic Laboratory

New Hampshire Veterinary Diagnostic Laboratory

College of Life Sciences and Agriculture

21 Botanical Lane

Durham, NH 03824

V: 603.862.2726

F: 603.862.0179

www.nhvd.edu

Respiratory Pathology Mystery Slide

Case # 6

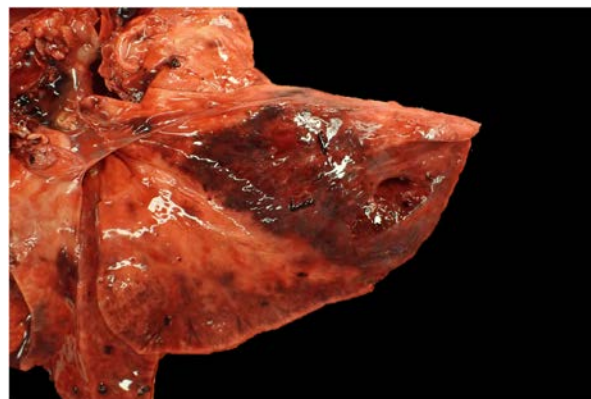
Anna Flocken, DVM
Anatomic Pathology Resident
21 Botanical Lane
Durham, NH 03824
P: 603-862-3556

Authors: Anna Flocken, DVM (Cummings School of Veterinary Medicine at Tufts University & New Hampshire Veterinary Diagnostic Laboratory); Colleen Monahan, DVM, DACVP (New Hampshire Veterinary Diagnostic Laboratory)

History/Signalment: 11-year-old, female German shepherd dog with ~ 1 month history of progressive hypoxemia-related symptoms, including exercise-induced syncopal episodes, cyanosis, and labored breathing. Interstitial lung changes were observed on thoracic radiographs. Cardiology evaluation revealed evidence of pulmonary hypertension and the presence of B-lines. Euthanasia was elected due to worsening clinical signs despite treatment attempts.



Gross Pathology: The lungs are diffusely mottled light orange-tan and pink-red, expanded throughout all lobes, and ooze white foam on cut section. The cranial lung lobes are rubbery. The tracheobronchial lymph nodes are prominent, dark red-brown, and wet.



Respiratory Pathology Mystery Slide

Case # 7

Authors: Sarah Zurbuchen, DVM (North Carolina State University); Kaylin McNulty DVM, Dipl. ACVP (Mississippi State University); Bonnie Brenseke DVM, PhD, Dipl. ACVP (Campbell University)

History/Signalment: Patient was found with a large shoulder wound and had a grade 3/6 heart murmur presumed to be due to anemia and heavy parasite load. Due to poor response to treatment, euthanasia with postmortem examination was performed.

Gross Pathology: The lungs are diffusely plump, mottled pale pink to tan, and slightly firm, with multifocal, tan-yellow, ill-defined nodules measuring approximately 1 cm in diameter; on cut section, numerous brown and white (barber-pole appearance), thread-like worms measuring ~1 cm in length are present within bronchi and bronchioles.

