



The Work-Up

Diagnostic Services Unit | Issue 10 - November/December, 2023

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DSU Announcements

Holiday Closures:

Remembrance Day (observed):
Monday, November 13, 2023

Holiday Closure: December 25,
2023 to January 1, 2024 (inclusive)

Last days for submissions:

- Bacteriology & Serology: Tuesday, December 19, 2023
- Field Necropsies/Biopsies: Thursday, December 21, 2023
- Whole Bodies (fresh): Friday, December 22, 2023 @ 12:00pm (frozen submissions will be held until the new year)

The DSU welcomes a new Administrative Assistant, Kerin Hudson, to the team!

The DSU welcomes back Histology Technician, Nancy Coulter!

The DSU Cytology Service is closed until September 2024. All cytology submissions will be sent out during this time.

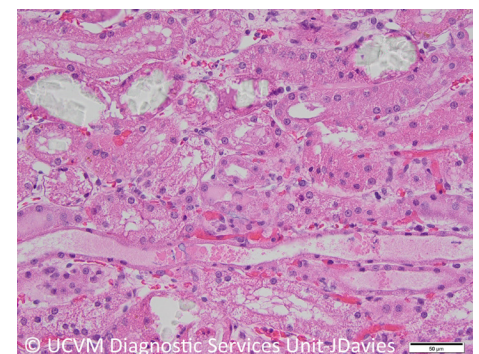
SPOTLIGHT

Dr. Legge completed her Master of Science in the spring 2005 while continuing the Doctor of Veterinary Medicine (DVM) program at the Atlantic Veterinary College (AVC). She graduated from the DVM program in 2007 and had a brief career in small animal practice. Dr. Legge returned to AVC, where she completed the combined Master of Veterinary Science and Anatomic Pathology Residency program in 2011. Dr. Legge became a Diplomate of the American College of Veterinary Pathologists (Anatomic Pathology) in September 2011 and accepted a diagnostic pathologist position at the Nova Scotia Department of Agriculture, Animal Health Laboratory. In 2013, Dr. Legge joined UCVM as a Diagnostic Pathologist with the Diagnostic Services Unit, and in 2017 she briefly left to fill the Provincial Veterinary Pathologist and Laboratory Manager position for the province of Newfoundland and Labrador. As of June 2019, she has since rejoined UCVM as an Assistant Professor (Teaching) of Anatomic Pathology.

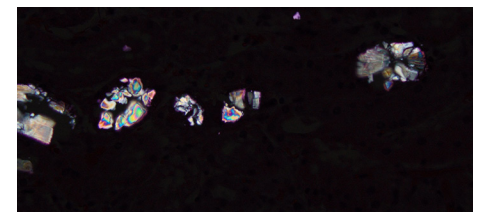


Zinc phosphide poisoning was diagnosed in a 20-year-old Quarter Horse found with colic and neurologic signs. 2% zinc phosphide had been used on farm for ground hog population control. On necropsy, the horse had generalized icterus and petechiae. Histopathology revealed massive acute hepatic necrosis with lipid-type degeneration, cerebral edema, acute renal tubular degeneration, and pulmonary congestion and edema. Zinc phosphide was detected in stomach and intestinal content. Zinc phosphide is an approved rodenticide and horses are particularly susceptible to poisoning due to their inability to vomit. Zinc phosphide remains stable in dry environments and the oat bait is appealing to horses.

tion and necrosis with oxalate crystals, consistent with ethylene glycol toxicity. Ethylene glycol is a common component of antifreeze and has a sweet taste. Winter vehicle maintenance is a source of exposure for dogs and cats.



Oxalate crystals in renal tubules



Oxalate crystals through polarized light

Ethylene glycol poisoning typically causes vomiting and neurological signs like depression and ataxia with dogs and cats commonly affected. This progresses to renal failure and death. Necropsy may show renal pallor and edema. Histopathology reveals tubular degenera-

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DSU Team

Anatomic Pathologists:

Dr. Jennifer Davies
Dr. Dayna Goldsmith
Dr. Ashish Gupta
Dr. Cameron Knight
Dr. Carolyn Legge
Dr. Jamie Rothenburger (*on leave*)
Dr. Amy Warren
Dr. Katie Waive
Dr. Erin Zachar

Clinical Pathologists:

Dr. Angelica Galezowski
Dr. Catherine Wagg (*sabbatical*)
Dr. Amy Warren

Microbiologist:

Dr. Beverly Morrison

Support Staff:

Jim Carlsen
Nancy Coulter
Dr. Manga Devi
Mai Farghaly
Patrick Fuller
Karan Gadani
Lori Goodbrand
Kerin Hudson
Chloe Ingham
Jennifer Larios
Callum MacDonald
Mel Nicolas
Ciara O'Higgins (*on leave*)
Dr. Lindsay Rogers
Sara Skotarek Loch

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Ergot toxicity resulted in dry gangrene of the distal extremities in cows and calves of a commercial beef ranch. Several animals were lame with sloughed claws. On necropsy, there was necrosis of the distal tail, ear tips, and distal limbs with secondary bacterial infection of open wounds. The secondary infection resulted in septicemia of at least one cow. Additional secondary problems in some down cows included emaciation, serous atrophy of fat, and ulcerative stomatitis, glossitis, and esophagitis. Differential diagnoses for dry gangrenous necrosis of extremities includes fescue toxicity, frostbite and rarely, septicemia. Testing for BSE and vesicular diseases was performed and were negative.

Ionophore toxicity was diagnosed in 5-month-old feedlot sheep with high mortality of 1-4 sheep per day in the flock. Evidence of heart failure was found on necropsy. Histopathology revealed acute degeneration and necrosis of cardiac and skeletal muscle, associated with toxic injury. Mineral supplement was analyzed and found to contain Narasin which is not labeled for use in sheep.



Myocardial necrosis in ionophore toxicity

Iron toxicity (suspect) was diagnosed in a barn with high mortality in 5-day old piglets. Muscle necrosis, edema, and discoloration near iron supplement injection sites were found on necropsy. This is typical of peracute iron toxicity in piglets. Injection site trauma causes milder muscle necrosis. A toxic dose was not administered; however, vitamin E or selenium deficiencies can lead to secondary iron toxicity with typically non-toxic iron supplementation. Vitamin E and selenium levels were not tested in this case to confirm.

Lead toxicity was diagnosed in bald eagles found depressed and unable to fly. The eagles were started on chelation therapy which was unsuccessful. Clinical blood lead levels were too high to read. No significant findings were apparent on necropsy. Histopathology supported lead poisoning with fibrinoid vascular necrosis in the heart leading to heart failure. Lead poisoning was confirmed with toxic lead levels in the liver. The birds tested negative for avian influenza.

DSU Serology Laboratory Section

Our new serology lab is open to receive Avian serum samples! Initially we will offer testing only for Avian species for the following diseases: Newcastle disease virus (NDV), avian reovirus (REO), infectious bronchitis virus (IBV), avian encephalomyelitis (AE) and infectious bursal disease (IBD). The preferred sample is serum; if whole blood is submitted, additional processing charges will apply.



Tips & Tricks

Did you know that aqueous humor (ocular fluid) is an excellent sample to collect in suspected cases of nitrate toxicosis? Nitrate levels in the ocular fluid remain relatively stable postmortem. Using a 16-18 gauge, 1 inch needle and a 3-12 cc syringe enter the anterior chamber through the cornea. Aspirate 1-2 cc of ocular fluid, place in a sterile red top tube and ship on ice.

