



The Work-Up

Diagnostic Services Unit | Issue 2 - July/August, 2022

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DSU Announcements

Happy retirement Sue Calder-Lodge! (Histology Lab Supervisor, 2014-2022)

The DSU welcomes Lori Goodbrand as the new Histology Lab Supervisor!

Physical RFID tags are now required when submitting cattle for necropsy and cattle will not be accepted without their individual RFID tag. Providing only the tag number is no longer sufficient for disposal of cattle following necropsy.

Please call the provincial reporting hotline at 310-0000 or visit CWHC website (<http://www.cwhc-rscf.ca/>) if you would like to report HPAI in birds or other wildlife.

Holiday closures:

- Canada Day: Friday, July 1, 2022
- Heritage Day: Monday, August 1, 2022

SPOTLIGHT

The Diagnostic Services Unit (DSU) has partnered on a pilot project with approved grant assistance provided by the Government of Alberta and the Canadian Agricultural Partnership (CAP) and by Results Driven Agricultural Research (RDAR) to offer Enhanced Livestock Diagnostics – affordable, accurate, and in-province diagnostics. This project has allowed for the expansion of the DSU to offer bacteriology



services, Alberta-supported services for livestock species, and outbreak investigations. Non-livestock species benefit from the DSU with the opening of the bacteriology lab and outbreak investigation services. Other DSU benefits include improved disease and antimicrobial resistance surveillance, animal and public health, food safety, market access, and the creation of teaching material for veterinary students.

It is with mixed emotions that we announce Sue Calder-Lodge will be parting ways with the DSU to head home to Scotland for some new adventures. Sue joined the DSU in 2014 from the CFIA to grow the histology lab. Her incredible contributions include improvements to our quality assurance program, supporting standard operating procedure creation, expert microtomy skills, sourcing of donated equipment, validation of H&E, special stains and other techniques, plus other innovative ideas. We will miss the singing often heard coming from the lab and her incredible stories. We wish her the very best as she moves home, bon voyage Sue!

Chlamydia abortus (Ovine Enzootic Abortion) was the cause of abortions and stillbirths in a large lambing operation. Gross pathology of submitted placentas revealed necrotizing placentitis. Differential diagnoses include *Coxiella burnetii*, *Chlamydia abortus*, *Campylobacter fetus* subsp. *fetus*, and other bacterial pathogens. Histopathology revealed lesions typical of *Chlamydia abortus*: necrotizing and suppurative inflammation of the cotyledonary and intercotyledonary areas with a necrotizing vasculitis and intracellular organisms in trophoblasts. *C. abortus* was detected on PCR of pooled placentas. *C. abortus* is a zoonotic agent causing flu-like symptoms in most infected people. Pregnant women experience severe disease including systemic illness, renal and hepatic complications, and stillbirth or abortion. This case highlights the need for appropriate PPE, including an

N95 respirator, for small ruminant fetal necropsies.

Inclusion body hepatitis (IBH) is caused by fowl adenoviruses and is seen regularly in broiler poultry submissions to the DSU. It is vertically transmitted from naïve broiler breeder parents to their broiler progenies. Affected flocks typically have sudden increased mortality that ranges from 5-10% to as high as 40% in broilers of 2-4 weeks of age. Histopathology reveals a necrotizing hepatitis with intranuclear viral inclusions. IBH can manifest as a primary disease or an opportunistic infection secondary to immunosuppressive diseases (e.g., IBDV and CIAV) and mycotoxicosis. An effective breeder vaccination program complemented with serological testing before laying may help in prevention of IBH in broiler chicks.

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DSU Team

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Chiari-like malformation with hydrocephalus was diagnosed at necropsy in a 10-month-old brachycephalic cat euthanized for progressive neurologic disease. The cerebral lateral ventricles were markedly dilated, with atrophy of the overlying cerebral cortex, and the caudal part of the cerebellum had herniated through the foramen magnum (severe hydrocephalus). Unexpectedly, the foramen magnum was 2 cm wide (vs. 1 cm wide in a control cat) and the occipital condyles were greatly reduced in size, sharp-edged and asymmetrical (vs. symmetrical and smoothly rounded), with the right occipital condyle barely present. This is consistent with Chiari-like malformation of the occipital bone. This condition, in which the size of the caudal cranial vault is insufficient to contain the brain, is most common in dogs, but is reported occasionally in brachycephalic cats.

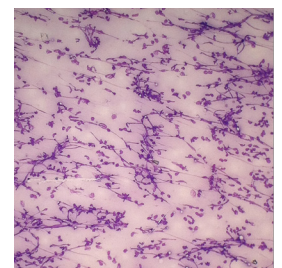


Hydrocephalus in a cat. Photo provided by Dr. Cameron Knight

Highly pathogenic avian influenza (HPAI) has been found in skunks in Alberta. It has also been confirmed as a cause of neurologic signs and death in fox kits in Ontario. Dead skunks have been found in the same locations as dead birds affected by HPAI. Skunks scavenging on dead birds is presumed to be the cause of HPAI spillover into mammals. The mammals present similarly to the affected birds with neurologic signs and encephalitis. Anyone wishing to report HPAI in wildlife should call 310-0000 or visit the CWHC website: <http://www.cwhc-rcsf.ca/>.

Tips & Tricks

When preparing smears from a fine-needle aspirate using the slide-over-slide technique, remember to avoid excessive downward pressure on the sample as this can lead to significant cell rupture and make cell identification a challenge.



Ruptured cells. Photo provided by Dr. Cathy Waggoner

