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Welcome Dr. Chelsea Sykes

CAHFS is pleased to welcome Dr. Chelsea Sykes to the team. She joined the CAHFS-Davis Toxicology section on April 5, 2021, as a Toxicology Resident. Dr. Sykes is a UC Davis School of Veterinary Medicine graduate (2012), with a focus on small animal preventive medicine. She spent six years in Florida as a general practitioner before transitioning to a full time spay/neuter surgeon working with a humane society in Kentucky. She enjoys being outside hiking with her dog, Cleopatra, baking, traveling, and attempting to garden.



Dr. Chelsea Sykes

Bovine

Mannheimia haemolytica was the cause of polyserositis and death in a 2-month-old Angus calf found dead with no clinical signs reported. On necropsy, there was fibrinosuppurative pleuritis and peritonitis. In addition, a 30 cm segment of ileum had a dark red thickened wall and abundant serosal fibrin. *Mannheimia haemolytica* was isolated in large numbers from peritoneum and lung. The case is an example of a relatively uncommon form of *M. haemolytica* septicemia.

Calf diphtheria (necrotic laryngotracheitis) was diagnosed in two 4.5-month-old Holstein heifers exhibiting severe respiratory distress and open mouth breathing. Several others were affected with less severe signs. Both heifers submitted for necropsy had focal laryngeal necrosis with caseous material extending into the proximal trachea. *Trueperella pyogenes*, *Bibersteinia trehalosi* and *Fusobacterium necrophorum* were the organisms isolated.

Horse

Equine herpesvirus type 1 (EHV-1) encephalomyelitis was diagnosed in an 11-year-old Tennessee Walking horse that was euthanized due to rapid progression of clinical signs and lack

of response to treatment. The horse presented with acute hind limb ataxia followed shortly by truncal sway, hind fetlock knuckling and within hours was down and unable to stand. On necropsy, there were no gross abnormalities, but histologic lesions were compatible with EHV-1 encephalomyelitis. EHV-1 without neuropathogenic markers was confirmed by PCR on both nasal swab and brain tissue.

Amoebic encephalitis was the cause of an acute onset of progressive neurologic signs in a Warmblood horse gelding. On necropsy, there was extensive yellow discoloration with hemorrhage and malacia of the midbrain and diencephalon. Histology revealed necrotizing and granulomatous encephalitis with myriad intralesional amoebic trophozoites, which stained positive for both *Acanthamoeba* sp. and *Balamuthia* sp. by immunohistochemistry. Amoebic infections are rare in horses and portals of entry could include the nose, ethmoid region or lower respiratory tract mucosae, or skin wounds. Immunocompromised animals have a higher susceptibility to infection

Small Ruminant

Fungal rhinitis (*Aspergillus* spp.) and bacterial sinusitis (*Trueperella pyogenes*, *Pseudomonas aeruginosa*, and *Mycoplasma* spp.) with extension into the horn and frontal lobe meninges were the cause of a three-day history of





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ataxia, blindness, small seizures, teeth grinding and fever in a 3-year-old Scottish Blackface ewe. Nasal bots (*Oestrus ovis*) were also associated with the nasal turbinate infection. Frontal sinusitis with osteolysis of the horn has been reported in bighorn sheep due to aberrant nasal bot migration.

Yersinia pseudotuberculosis was the cause of **placenta** and **stillbirth** of triplet, 146-day gestation goat kids. On necropsy, there was purulent exudate covering the placental surfaces. Two of the three fetuses had bronchopneumonia and one also had enterocolitis, hepatitis, and splenitis with intralésional colonies of coccobacilli. *Y. pseudotuberculosis* was isolated from the placenta and multiple organs of both fetuses.

Pig

Osteoporosis with pathological fractures was diagnosed in a 5-year-old sow with bilateral, chronic and acute fractures of the ribs and chronic non-union fracture of the femur. The sow went down initially 1.5 week after weaning a litter of piglets, recovered and then was unable to rise after she was mounted by a boar three weeks later. She died eight weeks after that. Low levels (3.1 ppm) of lead in liver and bone and very high levels of iron (6,300ppm) in liver were detected. Lead and high iron exposure has been associated with osteoporosis in animals. Iron suppresses osteoblast from forming bone and may also stimulate osteoclasts to resorb bone. Lead exposure inhibits the function of chondrocytes and osteoblasts decreasing bone density. It is unknown if the level of lead detected in this sow (3.1 ppm) was sufficient to affect the bone. The origin of these heavy metals was not determined, but it was speculated that iron was elevated due to lead's interference with heme synthesis. Histopathology, radiographs and low ash content of the bone (40.68%; normal range 58-60%) support the diagnosis of osteopenia.

Bleeding gastric ulcer leading to severe anemia was the cause of death in a 3-month-old, castrated male pig. On arrival after purchase, the pig was reluctant to move, had anorexia, weakness and lethargy, and died within 4 days. On necropsy, the mucous membranes, musculature and internal organs were severely pale and the blood was very watery, suggesting anemia.

The non-glandular part of the stomach was severely and chronically ulcerated, and a large blood clot was attached to the margin of the ulcer. Digested blood was found in the intestine. Iron levels in the liver were low, which was considered to be associated with anemia from chronic bleeding.

Other Mammalian

Endometrial venous aneurysm caused bleeding and death in a 2-year-old female pet rabbit that was found on the ground surrounded by blood and died within hours. On postmortem examination, the uterine horns were filled by blood clots. The vulva also contained blood. Histopathology of the uterine horn revealed an endometrial venous aneurysm and thrombosis; these lesions were considered to be the cause of the bleeding. This in an uncommon condition, which can be congenital in rabbits.

Poultry and Other Avian

Comb necrosis was diagnosed as the cause of a 3-year-old rooster's progressive leg weakness until he became unable to walk. On necropsy, the caudal aspect of the comb was thickened and the surface covered in dark crusts. Histologically, the tissue was necrotic and edematous, and had large numbers of coccoid bacteria (probably *Staphylococcus* spp.) associated with the lesions. Comb necrosis has been associated with leg weakness, although the reason for this remains undetermined.

Fungal keratitis and anterior uveitis was the cause of left eye ocular opacity in an 8-month-old Barred Rock hen. The fungal lesions arose in the cornea and extended into the anterior segment, but did not affect the posterior part of the eye. Reports of fungal keratitis in poultry are rare and most often associated with *Aspergillus fumigatus*.

