

Inside this issue:

- **Bovine**
 - Monensin toxicity
 - Poison hemlock toxicity
- **Equine**
 - C7 vertebrae fracture
 - Hemolytic anemia after treated for pneumonia
- **Small Ruminant**
 - Rotavirus—goat
 - WNV infection—sheep
- **Pig**
 - Otitis and brain abscess
 - *T. abortus* abortion
- **Poultry/Other Avian**
 - Vitamin E deficiency encephalomalacia
 - Decreased egg production due to IBV
 - *Parahaemophilus* infection—quail
 - WNV—canaries and pheasants
 - Proventricular dilatation disease (PDD)—Macaw



Bovine

Monensin toxicosis initially caused lethargy and depression in a feedlot, followed rapidly by watery diarrhea within the first 24 hours post-exposure. Calves were down and sudden death was common. Peak death loss (90-95/day) occurred on the 5th and 6th days post-exposure to a single feeding that had ~30 times the recommended therapeutic levels of monensin. Ten calves died <12 hours after exposure and by 3 weeks, 28% of the exposed animals had died and deaths were continuing from chronic heart failure due to myocardial scarring. Several calves that died 1-2 days post-exposure had brown urine, and necrosis of the gluteal muscles and diaphragm in addition to patchy heart necrosis. Two weeks post-exposure, multiple animals were experiencing gas bloat.

Poison hemlock caused the death of two and illness of six 1-year-old Holstein heifers on a pasture where plants and clippings were suspected to have been dumped. Clinical signs included lethargy, staggering and sunken eyes. Coniine and g-coniceine, two of eight alkaloids identified in Hemlock, were detected in the rumen contents of a Holstein heifer, confirming exposure and intoxication. The heart had extensive hemorrhage of the epicardial fat and mild acute myocardial degeneration and necrosis. Heart lesions are not a reported finding with poison hemlock. Poison-hemlock grows throughout the United States and is very toxic to many domestic animals as well as humans. All parts of the plant can be toxic.

Equine

Fracture of the 7th cervical vertebra (C7) resulted in **progressive neurologic signs** in a 25-year old mare. The signs began two weeks earlier with anorexia and mild colic signs. Approximately a week after the colic, the horse fell after a walking exercise and was non-weight bearing on the left foreleg and unable to reach down with her head. The lameness improved over the next few days with treatment, but the mare was then found down, unable to rise and in severe pain. Treatment partially relieved the pain so the horse was able to stand, but was ataxic (hind hopping) and very weak, so the owner elected euthanasia. A necropsy examination revealed severe degenerative joint disease, and an accompanying fracture of the left articular process of C7 and left vertebral arch with abundant epidural hemorrhage.

Hemolytic anemia caused the death of two 11-18 week old foals that had been treated with doxycycline and rifampin for respiratory disease. Both foals had red urine and icterus at necropsy. The hemolytic anemia occurred 13-14 days following the onset of treatment in both foals. One foal had been off treatment for 4 days prior to developing anemia. A publication by M. Venner, et al in J Vet Intern Med, 2013, 27(1):171-6 reported that 3 foals on a doxycycline and rifampin treatment protocol developed hemolytic anemia 17 to 20 days after beginning treatment. The cause of this anemia was not known but anemia did not occur in foals receiving only doxycycline or only rifampin.

Small Ruminant

Rotavirus, detected by electron microscopy, was the cause of diarrhea in 100% of goat kids between 1-3 days of age on one premises. All kids recovered in 24-48 hours if given 3 times/day fluid supportive therapy.

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Small Ruminant (cont'd)

West Nile virus (WNV) caused severe **meningoencephalitis and death** within 24 hours of exhibiting clinical signs in two ewes from unrelated premises in different counties in early August. One ewe was off feed and down with tremors. The second ewe had a high fever and mild neurological signs that included turning its head to the right and circling. The diagnosis of WNV infection was confirmed by immunohistochemistry on the brain and PCR on brainstem. Although WNV can infect numerous animal species, naturally occurring WNV disease in sheep is very uncommon.

Pig

A chronic unilateral **abscess in the middle ear** (tympanic bullae) extended up the 8th cranial nerve into the brain resulting in a 2-3 year old boar becoming **weak, anorexic and unable to stand**. *Trueperella pyogenes* was isolated from the abscess. The boar had concurrent bronchopneumonia due to *Streptococcus suis* and *Haemophilus parasuis*, non-obstructing bladder stones and gastritis.

Trueperella abortusis caused the **abortion** of a sow three weeks before her due date. *T. abortusis* was isolated from the liver and stomach contents from two of three pig fetuses in the litter and from the lung of one of them. Severe placentitis in both pigs and pneumonia in one was seen on microscopic examination.

Poultry and Other Avian

Nutritional encephalomalacia due to **Vitamin E deficiency** was diagnosed in 3-week-old turkey poults with increase in mortality (1.5% per day) in a flock of 10,000 birds. The birds were ataxic, lying in lateral recumbency and paddling. Necropsy revealed severe petechial hemorrhages on the cerebellum associated with microscopic multifocal necrosis and thrombosis. Vitamin E levels in the liver ranged between 0.53 and 2.2 ppm (normal range: 3-15 or greater).

Infectious Bronchitis virus (IBV) infection was the cause of a reported **reduction in egg production and egg shell quality** in layers on a small organic egg farm. Diagnosis was based on positive serology titers in all hens and on one submitted hen that had salpingitis and oophoritis with positive IBV immunohistochemical staining.

Parahaemoproteus (Haemoproteus) lophortyx infection caused the sudden deaths of 30, 9- to 11-week-old quail in a group of 1,000 housed in an outdoor flight pen. Gross lesions in seven dead quail consisted of multifocal hemorrhage streaks in the breast and thigh muscle with occasional white linear foci, enlarged spleens and pulmonary congestion. Histology revealed myositis associated with protozoa zoites and megaloschizonts typical of *Parahaemoproteus lophortyx*. This protozoal infection is transmitted by blood feeding vectors (*Culicoides* species) affecting young quail during warm seasons.

West Nile virus (WNV) infection was the cause of **lethargy and sudden death** of over 90 out of 175 **canaries** housed in an outdoor enclosed aviary over a period of three weeks. A large number of mosquitos were present where the aviary was located. At necropsy, 10 canaries had dark red and enlarged spleens. Histology revealed multifocal liver necrosis, splenitis and myocarditis. On an unrelated premises, WNV caused the **sudden death** of a young **pheasant** with no gross lesions but histologic lesions of hepatitis, pneumonia, myositis, nephrosis, proventricular gland and splenic lymphocyte necrosis. Both cases were confirmed by immunohistochemistry on liver and spleen, and also by PCR on the pheasant.

Proventricular Dilatation Disease (PDD) was the cause of **weakness** for two days followed by death in a 20-year-old male Hyacinth **Macaw**. Necropsy revealed emaciation but a normal proventriculus. Histopathology revealed severe encephalomyelitis, inflammation of the nerve ganglia in the gastrointestinal tract, adrenalitis, myocarditis and peripheral and optic neuritis. Immunohistochemistry for Avian Bornavirus (ABV) was positive in the brain, adrenal gland and ganglia of the gastrointestinal tract. Even though the disease is called PDD, the proventriculus is dilated in only about 70% of the PDD cases.