Interesting cases in the lab

CATTLE

Several cases of **Brassica associated liver disease (BALD)** were seen over the winter. In one case, a mob of yearling beef steers which had had limited daily access to a rape *(Brassica napus)* crop were given increased grazing on the crop. Within 48 hours, several steers stopped grazing and became lethargic. The two worst affected animals had tongue ulcerations and one had severe muzzle ulcerations. Blood work showed marked cholestasis and hepatocellular injury (GGT >2,000 U/L [RI <36] and GLDH >750 U/L [RI 8-41]). BALD is linked to the hepatotoxic effects of high **glucosinolate** concentrations which is particularly concentrated in the flowers and seeds. It was noted that the crop in this case had begun to flower which together with increased grazing led to consumption of increased glucosinolates.

Several late term abortions occurred in mature cows over a period of a month in a local dairy herd. Histological changes of the placenta and fetus were consistent with a **fungal abortion**. Consumption of spoiled silage due to flooding in the area was a likely source of the fungus.

Cows showing blindness and recumbency, some of which died, were diagnosed with thiamine induced **polioencephalomalacia** on histopathology. Lime/sulphur sprays had been applied to the pasture 10 days prior to the onset of clinical signs. Sulphur metabolites inactivate thiamine, and spraying increased thiamine requirements.

In calves, several cases of inadequate colostral management led to **failure of passive transfer** (FPT). In one case of dying calves, serum [IgG] were 24.9 mg/dL and 24.1 mg/dL (<400mg/dL indicates FPT; >800mg/dL indicates adequate IgG transfer). It was thought that the use of teat seal for dry cows may have been a contributing factor. In a second case of deaths in young calves, FPT was found to be associated with poor colostral quality when a colostrum sample was found to have [IgG] of 444 mg/dL (RI >5000mg/dL).

A number of milk samples cultured from a regional dairy farm grew Prototheca. Environmental contamination is the likely original source of infection but cow to cow transmission may occur via contaminated milking equipment. These infections can cause high somatic cell counts, do not respond to treatment and culling of infected cows is usually carried out.

An error in feed formulation lead to a **monensin overdose** that resulted in weight loss and death of a cow on a local dairy farm. Histologic lesions consistent with monensin toxicity were seen in cardiac and skeletal muscle. In addition, lesions due to compromised cardiac output were also seen in other organs.

A cow presented with a swollen head (trumpet head), nasal discharge and enlarged submandibular lymph nodes which was nonresponsive to oxytetracycline. There were ulcerations of the muzzle, bilateral suppurative nasal discharge, copious bright yellow exudate on the gingiva, hard and soft palate, and enlarged, yellow tonsils, retropharyngeal lymph nodes and parotid salivary glands. On necropsy, the head had numerous subcutaneous nodules with inspissated pus on cut surfaces. Histopathology and culture confirmed ***Actinobacillus lignieriesii*** which is well known oral cavity

opportunist causing woody tongue. This case showed more tissue involvement than usual which may have been related to grazing of coarse/thorny forage.

Two young dairy calves were found moribund having been healthy at birth and stomach tubed with colostrum during their first 12 hours. Following euthanasia, on-farm necropsies showed peritonitis, pleurisy and hyperaemic intestines with no evidence of oesophageal injury. Histopathology revealed severe acute hepatotoxicity. It was subsequently determined that the stomach tubes were sterilised with dairy shed **sodium hypochlorite,** but incomplete rinsing had inadequately removed the compound resulting in sodium hypochlorite toxicity.

About 40 to 50, < 1-week old dairy calves were found recumbent and a further 20 were ataxic a few hours after being fed colostrum from a well-stirred, chilled vat. On clinical examination, calves were normothermic, tachycardic, tachypnoeic, and when assisted to stand were ataxic and weak. Owing to the fermented smell of the colostrum, **ethanol toxicity** was suspected and confirmed by high serum ethanol concentrations. Despite chilling and stirring, fermentation of the colostrum had occurred. Fluid therapy was administered, and all calves recovered within 24 to 48 hours.

HORSES

A neonatal Thoroughbred foal presented with numerous mucous membrane petechia and a supraocular fluctuant swelling but was otherwise normal and feeding well. Haematology revealed marked thrombocytopenia (estimated 10-20x10^9/L, [RI 140-315]). **Immune-mediated thrombocytopenia** was suspected and in the absence of overt viral infection in either foal or mare, an alloimmune thrombocytopenia due to colostral anti-foal platelet antibodies was considered most likely. The foal was fed a commercial colostrum replacement and platelets returned to normal within two weeks. This is a rarely reported condition in horses.

A Thoroughbred mare presented with a 5cm ulcerated lip lesion extending through the mucosa to the haired skin. A biopsy submitted for histopathology revealed neoplastic lymphocytes extending into the dermis and subcutaneous tissues giving a diagnosis of **Epitheliotropic lymphoma** (**mycosis fungoides**). This neoplasm is rare in horse.

Two unrelated cases of **clostridial enteritis** in young Thoroughbred foals were diagnosed by PCR for clostridial difficile toxins A and B in faeces. In both cases, the foals developed jugular thrombophlebitis at the site of indwelling catheters, followed by joint infection. Cytological evaluation of the synovial fluid confirmed **septic arthritis** and cultures of the fluid yielded heavy growths of ***Staphylococcus aureus*** which was considered to have spread haematogenously from infection at the indwelling catheter site. Sluggish blood flow and decreased oxygen tension in the capillary network supplying a foal's synovial membrane, epiphysis and metaphysis encouraged the proliferation of bacterial growth at the chondro-osseous junction.

PIGS

Pasture-raised, 6-month old gilts presenting with ongoing lameness, reluctance to stand,shortened stance and multiple fractures on radiography of the limbs. Ribs submitted for examination had a rachitic rosary at the costochondral junction and were easy to bend. Histopathology confirmed **rickets and osteoporosis** and a diagnosis of **nutritional bone disease** was made, a common condition in rapidly growing commercial or pasture-raised piglets.

Weanling pigs presented with coughing, weight loss, inappetence and death were diagnosed with eosinophilic bronchopneumonia and intraluminal nematodes on histopathology. *Metastrongylus spp*, a porcine respiratory tract parasite requires an earthworm intermediate host and as such infection occurs mainly in pasture-raised stock, notably on organic farms and lifestyle blocks.

BIRDS

Avian **malnutrition** was diagnosed via microscopic evaluation of Gram-stained faecal smears of multiple caged psittacines. Malnutrition is common in psittacines fed all-seed diets and faecal Gram staining is an important component of the complete evaluation of this psittacines (parrots and similar birds). This is not applicable to other groups including poultry.
A cere lesion from another psittacine showed **squamous metaplasia** on cytology. This is linked to **hypovitaminosis A**, also commonly reported in birds on all-seed diets.

A metastatic **seminoma** was diagnosed in a 19-year-old male Guinea Fowl that presented for post-mortem examination. Grossly, a large, firm, dark red tumour filled the coelomic cavity, and displaced and compressed the gastrointestinal tract. Multifocal tan metastases were also noted in the liver.

COMPANION ANIMALS

A **sublingual salivary tumour** was diagnosed by histology in a 15-year-old, male cat which presented with a mass on the base of the tongue. Given the location of the tumour and its histological features, a salivary adenocarcinoma was diagnosed. In cats, about 90% of salivary tumours are reported to be malignant and at the time of diagnosis, with about 40% having metastasised to draining lymph nodes and 15% to distant sites.

A 9-year-old Greyhound presenting for lethargy, inappetence and occasional vomiting of 3 days duration, and was normothermic on examination. Biochemistry showed azotaemia (creatinine 477 umol/L [RI 45-135] urea 37.3 mmol/L, [RI 2.6-10.2]) and raised liver enzymes (ALP 1,102 U/L [RI 0-185], ALT 370 U/L, [RI 0-75]) with **leptospirosis** considered the most likely diagnosis. The IgM concentration was elevated confirming acute leptospirosis. Microscopic Agglutination Tests (MAT) for IgG antibodies to specific Leptospira serovars confirmed a high titre of 1/3200 for **L. copenhageni** confirming this as the infecting serovar.

A two-month old kitten presented for ill thrift and severe diarrhoea which started soon after weaning. Selective bacterial cultures yielded a moderate growth of ***Campylobacter jejuni*** which, given the age and clinical signs, was considered significant. This organism has zoonotic potential, particularly for young children and immunosuppressed individuals.