



Northern Ireland Disease Surveillance Report, JANUARY to MARCH 2023

- Gastroparesis in dairy heifers
- Arthritis due to *Mycoplasma bovis* infection in cattle
- Pyelonephritis in adult cows
- Salmonella Agama abortion in ewes
- Prolapse in ewes
- Listerial encephalitis in sheep
- Porcine circovirus infection in growing pigs
- Streptococcal meningitis in growing pigs

These are some of the matters discussed in the Northern Ireland animal disease surveillance quarterly report for January to March 2023.

CATTLE:

Respiratory diseases

Pneumonic pasteurellosis was diagnosed in a young calf submitted with a history of severe malaise. Extensive fibrinous pleuritis, pericarditis and peritonitis were present on gross examination and *Mannheimia haemolytica* was recovered from systemic cultures.

Pneumonia due to *Mycoplasma bovis* infection was detected in an eight-month-old calf which died following a period of pneumonia and respiratory signs. In this case there was also an enteritis, concluded to be due to intercurrent *Yersinia pseudotuberculosis* infection.

Alimentary diseases

Jejunal haemorrhagic syndrome and intussusception were diagnosed in an adult dairy cow which died suddenly. The cause of jejunal haemorrhagic syndrome remains speculative.

Gastroparesis in a dairy heifer

A two-year-old dairy heifer with a history of repeated bloat, colic and weight loss was presented for post-mortem examination. The rumen was large and filled with a large quantity of green digesta. The abomasum was filled with a considerable quantity of green digesta and grit. There was a large non-perforating abomasal ulcer. Clinical signs reported included in the history of this case included repeated bouts of gassing-up and colic, eventually leading to weight loss. It was also reported that a number of heifers sired by the same bull had been affected. This history and pathology is not dissimilar to that described in recent APHA GB Cattle Quarterly Report Newsletters, in which gastroparesis in dairy heifers is discussed as an emerging presentation.

Reproductive and mammary diseases

Unusual placental histology was seen in a case of abortion occurring one week prior to due date. There were multiple focal accumulations of neutrophils throughout the tissue, as well as large accumulations of crystalline material. The appearance of the crystalline material (FIGURE 1) was considered to raise the possibility of a foetal renal anomaly.

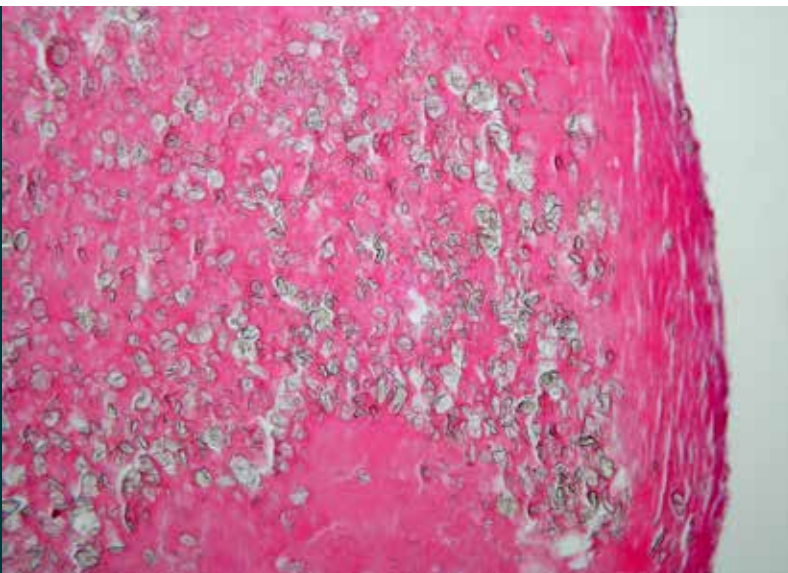


FIGURE 1: Deposition of crystalline material in a bovine placenta, foetal renal anomaly was considered to be a possible cause.

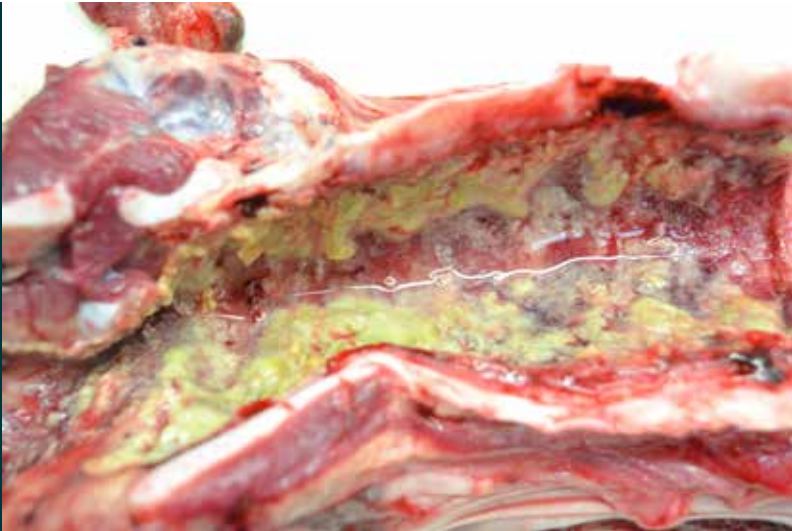


FIGURE 2: Cerebellar hypoplasia in a calf, no viral aetiology was found in this case.

Cerebellar hypoplasia

Cerebellar hypoplasia (FIGURE 2) was noted in a one-day-old calf. Histology showed marked spongiosis of the Purkinje layer with vacuolation of many Purkinje cell bodies. Generalised gliosis, particularly associated with the Purkinje layer, was seen. Tests for presence of Schmallenberg, BVD, and Bluetongue virus were all negative. Three other cases in the same herd were sired by the same bull.

Patent ductus arteriosus

Patent ductus arteriosus with hepatopathy was diagnosed in a one-month-old calf. At necropsy a large excess of straw-coloured fluid was noted in the chest cavity and abdomen. The liver was enlarged, with a slightly nodular appearance, and the heart was enlarged with patent ductus present.

Neurological diseases

Listerial encephalitis

Cases of listerial encephalitis were diagnosed in three separate herds during the reporting period, with bullocks and adult cows being involved. Gross examination of cases of listerial encephalitis is unremarkable, but histology of the brainstem is distinctive with mainly monocytic perivascular cuffing and presence of focal micro-pyogranulomas in the neuropil with associated spongy change. *Listeria monocytogenes* was cultured from brain tissue in each case.

Musculoskeletal diseases

Arthritis due to *Mycoplasma bovis* infection

Arthritis due to *Mycoplasma bovis* infection was diagnosed in a two-year-old bull, which had become progressively lame. At necropsy all feet were swollen. The carpal and hock joints were also swollen and pus and fibrin were exuded on excision of the joints. The acetabulae were similarly affected. *Mycoplasma bovis* nucleic acid was detected in the joint tissue by RT-PCR and *Trueperella pyogenes* was recovered from the septic discharge.

Renal diseases

Severe ascending pyelonephritis was seen on gross examination of a four-year-old cow. The kidneys were enlarged with multiple purulent foci in the cortex. Fluid and pus were present in the pelvis. There was a severe associated cystitis. Histologically there was severe acute necrotising nephritis affecting the medulla and pelvis with inflammatory casts and clumps of bacterial organisms present in the renal tubules.

SMALL RUMINANTS: SHEEP

Alimentary diseases

A three-week old lamb was found dead. At necropsy the abomasum contained only green tinged fluid and the small and large bowel contents were scant. 1,000 *Strongyloides* sp epg were detected in the faeces. *Strongyloides* sp reservoirs in the dam's flank are activated during pregnancy and pass through the milk to the offspring leading to enteritis, ill thrift and inappetence.

Nutritional and metabolic disease

Poisoning due to *Pieris* sp (Forest Flame)

Acetylandromedol poisoning following ingestion of *Pieris japonica* was diagnosed in a group of pregnant ewes in which a spate of deaths had occurred. There was secondary hypocalcaemia. Forest flame is the most common cause of phytotoxicity in sheep in Northern Ireland.

Reproductive diseases

Abortion due to *Salmonella agama*

Salmonella Agama was recovered in pure culture from the foetal stomach contents and viscera of an aborted lamb in a single flock. *S. Agama* is an unusual cause of ovine abortion and most cases occur in the South and West of Great Britain.

Problems in periparturient ewes

Cases of uterine prolapse and dissecting aneurysm of the pulmonary artery were seen in heavily pregnant ewes in separate flocks during the quarter. Both conditions are incompletely understood but are related to advanced pregnancy with a heavy lamb load as well as other factors.

Neurological diseases

Listerial encephalitis and bacterial meningitis

Bacterial meningitis as a sequel to septicaemia occurred in young lambs in several flocks during the early spring. Organisms responsible may enter through either the tonsils or the umbilicus and frequently cause visceral lesions also. In some cases there is presence of pus in the atlanto-occipital joint and / or a congested septicaemic carcass. In other flocks, ewes were affected by listerial encephalitis associated with silage feeding and it was noted that this condition was common during the quarter.

Skin diseases

Several cases of suspect chronic sheep scab were submitted from abattoirs. Gross examination of the skin suggested a non-active lesion, chronic dermatosis with wool loss, scabbing and acanthotic skin consistent with chronic inflammatory process.

Examination of HE stained sections showed parakeratosis and hyperkeratosis consistent with chronic dermatosis; acanthosis and pseudo-acanthosis with hyperplasia and hypertrophy of the epidermal cells with rete peg formation. Focal superficial pyoderma with leucocytic infiltration with many leucocytes showing degenerative changes. Giemsa stained sections showed the presence of moderate numbers of eosinophils in the dermis and small numbers to be present in the epidermis. Mast cells were also present in smaller numbers but with a similar distribution. Immuno – cytochemistry using CD 45 marker confirmed that this antigen was being expressed by eosinophils and lymphocytes in the skin sections examined.

Gross examination of the lymph nodes showed enlargement and oedema with a slight yellow / green tinge to the cortex.

Examination of HE sections showed the lymph nodes to be reactive with sinusoids packed with immature lymphocytes. There was an eosinophilic lymphadenitis with eosinophils present in the pulp and histiocytes present in some germinal centres. Giemsa stained sections confirmed moderate numbers of eosinophils and scattered macrophages. CD 45 antigen was expressed by both eosinophils and lymphocytes.

Examination of skin scrapes and wool plucks showed the presence of *Psoroptes ovis* mites

PIGS;

Porcine circovirus infection

Gross post-mortem examination of a five-week-old pig submitted with respiratory signs showed a congested and icteric carcass. The liver was mottled in appearance, and the caecal wall was congested and thickened, the caecum contents being dry and solid. Histologically there was hepatic necrosis and chronic hepatitis and chronic inflammatory change in the ileum and caecum. PCV-2 infection was diagnosed by immunofluorescence and immunohistochemistry.

Streptococcal meningitis

Numerous cases of meningitis in growing pigs due to *Streptococcus suis* infection occurred during the reporting period and as usual there were clusters of cases from individual producers. *Streptococcus equisimilis* infection was also diagnosed in growing pigs in a single herd. This organism occasionally causes septicaemia, valvular endocarditis and meningitis in finishing pigs.

Multicentric lymphosarcoma

Multicentric lymphosarcoma was diagnosed on the basis of histological examination of liver, spleen, small intestine and mesenteric lymph nodes from a slaughtered pig. Generally, tissue architecture was replaced and effaced by sheets of small dark round cells with large basophilic nuclei and very little cytoplasm. There was a high number of mitotic figures.