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Northern Ireland Disease Surveillance Report, April to June, 2023

- Lead and ragwort poisoning in cattle
- Tumours in cattle
- Nephrosis in sheep
- Laryngeal chondritis in sheep

These are some of the matters discussed in the Northern Ireland animal disease surveillance quarterly report for April to June, 2023

CATTLE:

Alimentary diseases

Pancreatoliths (FIGURE 1) were detected in an adult cow. These are generally considered an incidental finding and their role in the death of the cow is uncertain. The calculi are detected most commonly in cattle over four years old. The calculi are usually hard, white and numerous. They are chiefly composed of carbonates and phosphates of calcium and magnesium.



FIGURE 1: Pancreatoliths from a COW

Haemorrhagic enteropathy (jejunal haemorrhage syndrome) was diagnosed in a five-year-old dairy cow submitted following sudden death. At gross post-mortem examination the distal small intestine, caecum and colon were found to be full of blood, with extensive clotting in the distal intestine. Risk factors for the disease appear to be those associated with management practices aimed at achieving high milk production, such as high fermentable carbohydrate content of the diet, and the disease tends to occur relatively early in lactation in high-producing cows. The pathogenesis is uncertain.

Reproductive diseases

Examination of a freemartin calf showed presence of a vestigial vulva and vagina, an undescended testis in the left inguinal canal and the urethra extending into a vestigial penis with obstruction, leading to bladder and urachal remnant distention and rupture.

Poisoning in cattle

Lead Poisoning in calves

Two instances in separate herds of lead poisoning in calves were considered noteworthy during the reporting period. The first was an acute poisoning of young calves indoors and the second occurred at grass. In neither case could a source of lead be identified. Gross post-mortem and histopathological changes are non-specific in cases of lead poisoning and diagnosis is very much based on history and tissue chemistry, with toxic levels of lead being detected in blood, liver or kidney.

Ragwort poisoning in calves at grass

Poisoning by pyrrolizidine alkaloids due to eating ragwort (*Senecio jacobaea*) was diagnosed in bullocks in two separate herds. Typical history was of young bulls at grass for a period of weeks then showing nervous signs including excitement, inco-ordination and recumbency. Histologically there were changes in the liver of biliary duplication, periportal fibrosis and megalocytosis. No source of ragwort or aflatoxin was detected in either case.

Tumours in cattle

Mast cell tumour in a cow

An adult cow was presented with dermal masses over the head and neck which had become necrotic and then discharged. Histopathology of the lesions was considered to be consistent with bovine mast cell tumour (FIGURE 2). The architecture of the deep dermis and subcutis was disrupted by sheets of neoplastic mast cells with moderate to abundant amounts of granular cytoplasm and central round nuclei. Granules stained clearly with Giemsa. There were only few mitotic figures. There were large numbers of infiltrating eosinophils. Bovine mast cell tumours are considered malignant and are associated with multicentric cutaneous disease and/or visceral involvement. Although some exclusive cutaneous lesions have been reported, many bovine mast cell tumours also involve lymph nodes, mesentery, liver, abomasum, lung or heart.

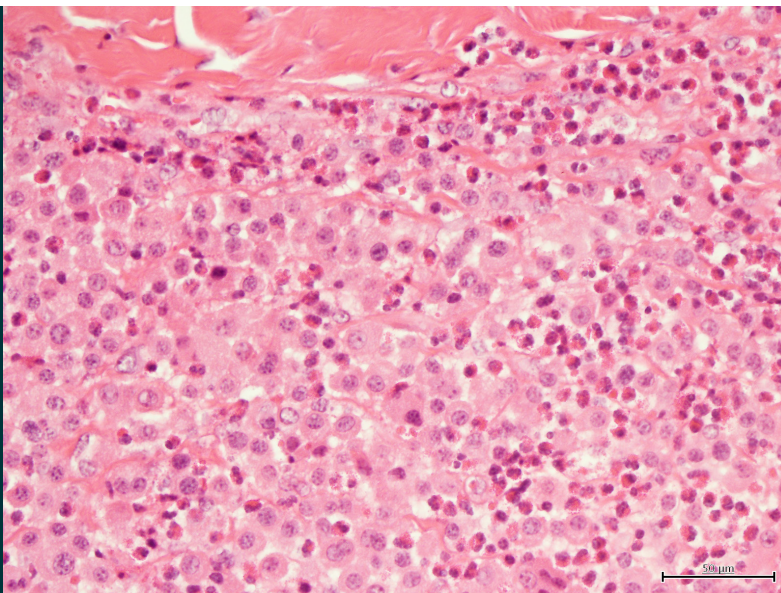


FIGURE 2: Bovine mast cell tumour, showing neoplastic mast cells

Rhabdomyosarcoma in a cow

Rhabdomyosarcoma was diagnosed in an adult cow. The neoplastic tissue exhibited high variability in cell types, from single or double-nucleated cells to strap-like multinucleated forms which were pluri-polar or branching, and very occasionally showing cytoplasmic cross-striations. The nuclei were extremely variable in size and shape, and mitotic figures were frequent. There were areas of necrosis, haemorrhage and mineralization.

Urinary tract disease in cattle

Polycystic kidney disease in a heifer

A thirty - month - old dairy heifer was presented after being found recumbent in the field. The most significant finding at gross post-mortem examination was polycystic kidney disease (FIGURE 3), but there was also evidence of septic arthritis in the hock joints, and the milk appeared watery. Polycystic kidney disease is usually considered to be congenital in origin, and affected animals generally die young. *Mycoplasma bovis* was considered to be the cause of the arthritis.

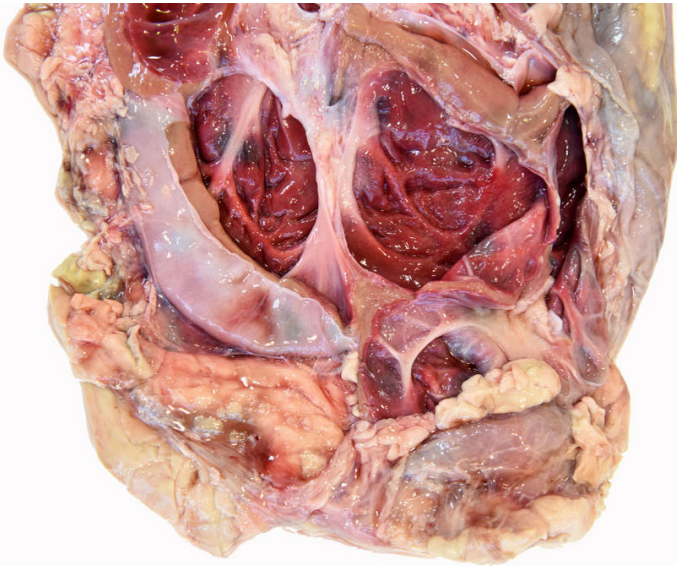


FIGURE 3: Polycystic kidneys in a heifer

SMALL RUMINANTS: SHEEP

Respiratory diseases

Cases of laryngeal chondritis were seen in lambs of susceptible breeds during the reporting period, including cases in lambs of around two-to-three months old. Instances of associated extensive soft tissue cellulitis in the ventral neck region were seen and in some cases there was involvement of the mediastinum, pericardium and pleura.

Neurological diseases

A 26 kg four- month- old intact ram lamb was submitted. At necropsy there was a 2cm diameter blood clot overlying the left caudal aspect of the cerebellum leading to visible compression of the left and caudal sides of the cerebellum. There was clotted blood on the floor of the cranial cavity. There was clotted blood along the basal aspect of the brain and there was a large blood clot located within the cranial cavity located just caudally to the cerebellum (FIGURE 4- next page). This was an intact male lamb and fighting/trauma may be a likely cause of the haemorrhage.

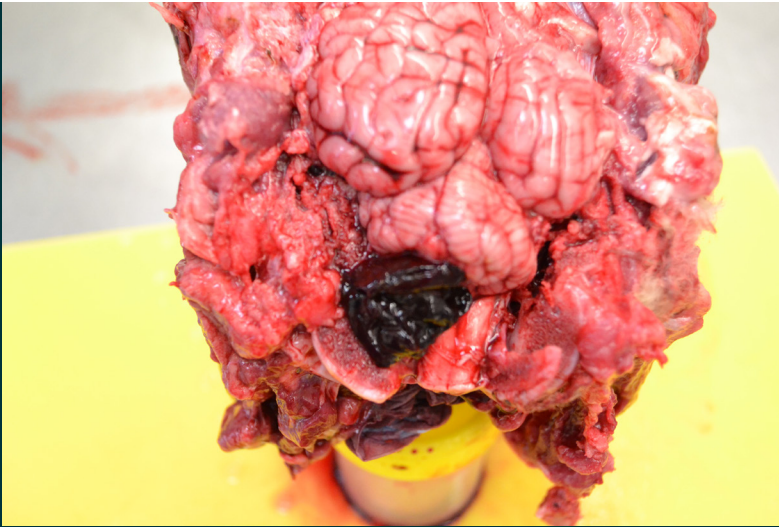


FIGURE 4: Presumed fighting injuries in a ram lamb

Urinary tract disease

Nephropathy was diagnosed in a lamb submitted with a history of ill thrift. At post mortem examination there was renal swelling. Histologically there were birefringent crystals in the renal tubules and tubular distension by protein rich fluid. This case was typical of several other cases which were diagnosed in different flocks over the reporting period. Whilst primary hyperoxaluria, an inherited disorder, has been described in Zwartble sheep, most cases of nephrosis in lambs are associated with coccidiosis or nematodiosis although the precise aetiology is uncertain. Forage containing high levels of oxalates has also been implicated in some cases.

Other diseases of sheep

Polyarthritis

Polyarthritis, endocarditis, myocarditis and renal infarction due to *Streptococcus dysgalactiae* was diagnosed in a four-week-old lamb. The umbilicus is accepted as the likely entry route of *S. dysgalactiae* in most cases.

Cardiovascular disease

Valvular endocarditis was detected in a five-week-old lamb. At gross post-mortem examination, severe vegetative valvular endocarditis was identified, and the liver was enlarged and mottled. Alpha-haemolytic *Streptococcus* sp was recovered in a septicaemic pattern, including from the heart valve. Liver histology reflected cardiovascular compromise.