REGIONAL VETERINARY LABORATORIES REPORT

May 2025

Regional Veterinary Laboratories (RVLs) carried out necropsy examinations on 573 carcases and 35 foetuses during May 2025. Additionally, 1,570 diagnostic samples were tested to assist private veterinary practitioners with the diagnosis and control of disease in food producing animals. This report describes a selection of cases investigated by the Department of Agriculture, Food and the Marine's (DAFM) veterinary laboratories in May 2025.
The objective of this report is to provide feedback to veterinary practitioners on the pattern of disease syndromes at this time of the year by describing common and highlighting unusual cases. Moreover, we aim to assist with future diagnoses, encourage thorough investigations of clinical cases, highlight available laboratory diagnostic tools, and provide a better context for practitioners when interpreting laboratory reports.

Cattle

Pneumonia and enteritis were the most common diagnoses at necropsy in cattle in the RVLs during May 2025.

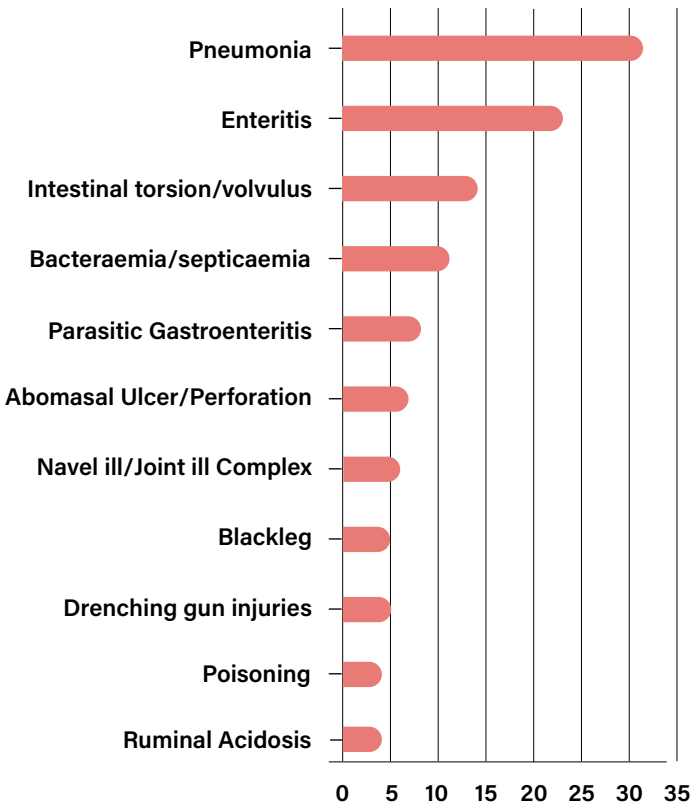

Table 1: **The most common diagnoses in cattle submitted for necropsy in May 2025.**

Gastrointestinal Tract

Traumatic reticulo-peritonitis

Athlone RVL examined a four-year-old Friesian cow submitted for post-mortem examination with a history of having calved one week previously and of becoming anorexic. The animal was treated by the vet, but there was no response to treatment, and it died. On necropsy, there was a severe, diffuse 'bread-and-butter' peritonitis, with copious amounts of foul-smelling, purulent, peritoneal fluid. The liver and reticulum were adherent to the caudal surface of the diaphragm and the pericardial sac was adherent to the thoracic diaphragmatic surface; there was a purulent tract running through the tissues. No wire or other foreign body was found but one was strongly suspected, and may have disintegrated. A diagnosis of peritonitis, likely secondary to a foreign body reticulitis/hardware disease was made.

Figure 1: **Severe, diffuse 'bread-and-butter' peritonitis in a cow, with copious amounts of foul-smelling, purulent peritoneal fluid. Photo: Denise Murphy.**

Intussusception

Athlone RVL examined a two-year-old heifer with a history of presenting with a distended and bloated abdomen, and with no faeces in the rectum. On post-mortem examination, there was moderate, bilateral enophthalmia, indicating dehydration. The abdomen was distended, and a trocar had been inserted into the rumen through the flank. There was peritonitis on the omental sac, and strands of fibrin on the dilated loops of small intestines it contained. There was a large intussusception in the distal ileum. Intussusceptions are thought to be the result of irregular peristaltic movements related to enteritis, intestinal parasitism, dietary disorders, or mural masses. No significant enteric pathogen or other cause was identified in this case.

Figure 2: **Intussusception in the distal ileum of a heifer. Photo: Denise Murphy.**

Mycotic abomasitis

A five-week-old calf presented to Kilkenny RVL with a history of bloat. On post-mortem examination, there was multifocal, severe, abomasal ulceration. Histopathology findings were consistent with a severe, transmural, necrotising abomasitis with thrombosis and vasculitis, with multiple fungal hyphae visible. Grocott's methenamine silver staining confirmed the presence of fungal hyphae. Mycotic abomasitis is typically a sporadic problem and usually secondary to insults that cause ulceration or a compromised immune system. Factors that are considered to contribute to the incidence of abomasal ulcers are: overuse or prolonged use of non-steroidal anti-inflammatory drugs (NSAIDS), corticosteroids, physiological stress, concurrent disease, mineral deficiencies such as copper, quality of milk replacer, feeding frequency, volume of milk per feeding, erratic feeding schedule, osmolality of the milk replacer, poor mixing of the milk replacer, slower abomasal emptying time, type and quality of roughage being fed, trichobezoars, and the presence of certain enteric bacteria such as *Clostridium perfringens* type A, *Campylobacter* species, and *Helicobacter pylori*.

Figure 3: **Grocott's staining demonstrating the presence of fungal hyphae in a case of mycotic abomasitis in a calf. Photo: Lisa Buckley.**

Systemic mycosis

Sligo RVL examined the carcase of a two-week-old calf. The calf was reported as not suckling and drooling from one week of age, and it had been treated by the owner. On post-mortem examination, there was necrotising rumenitis, oesophagitis and tracheitis. There was diffuse lung consolidation and pleuritis as well as fibrinous pericarditis. *Escherichia coli* was cultured from several organs. Bovine herpesvirus 1 (BHV-1), the causative organism of infectious bovine rhinotracheitis (IBR) was detected by polymerase chain reaction (PCR). The cause of death was severe, systemic mycosis with involvement of multiple organs. It is likely that the fungal infection developed as a result of antibiotic usage. The severe tracheitis and oesophagitis observed is consistent with severe IBR in a young animal. An initial respiratory infection that was superseded by systemic mycosis following treatment is considered likely.

Intestinal torsion

A 10-week-old calf was found dead and submitted to Kilkenny. On examination, there was an intestinal torsion, and the intestinal contents were bloody. The rumen pH was acidotic, and a review of diet was advised. *C. perfringens* epsilon toxin results were positive, and a review of vaccination protocols was advised.

Figure 4: **Intestinal torsion/volvulus in a calf. Photo: Aideen Kennedy.**

Septicaemia

A two-month-old Limousin-cross suckler calf that appeared "off form" and died suddenly was submitted for post-mortem to Limerick RVL. Necropsy revealed multifocal haemorrhages and necrosis of the small and large intestines and throughout omentum, and the small intestine contained bloody, watery contents. The liver was adhered to the diaphragm and abdominal wall, the spleen was enlarged with fibrin tags present on serosal surface, and there were multifocal areas of congestion and haemorrhage in spleen parenchyma. There was a marble-sized abscess in the left lung. *E. coli* was cultured from multiple organs and no other pathogens or cause of death were identified. The isolation of *E. coli* from multiple organs indicates a systemic infection likely originating from the gut leading to septicaemia and peritonitis.

Figure 5: **Septicaemia with multifocal haemorrhage and necrosis of the small and large Intestines in a calf. Photo: Brian Toland.**

Respiratory Tract

Aspiration pneumonia

A five-day-old suckler bull calf was submitted to Limerick RVL. It had had an uneventful birth to a dam with mastitis, was fed artificially, and showed no response to treatment for respiratory signs. Necropsy revealed lungs that were congested and heavy with a mottled appearance; there was excess mucus with fibrin clots and suspicion of aspirated milk in the trachea and bronchi. Milk was present in the rumen (ruminal drinker) with a few milk clots in the abomasum. Histopathology of the lungs observed a mixed inflammatory infiltrate with necrosis and fibrin present, dark brown-to-black granular material suggestive of meconium, and basophilic material suggestive of foreign body aspiration. A diagnosis of aspiration pneumonia due to likely inhalation of milk was made. The meconium aspiration identified in lung is an indicator of foetal distress which may have caused weakness in this neonatal calf born to an ill mother.

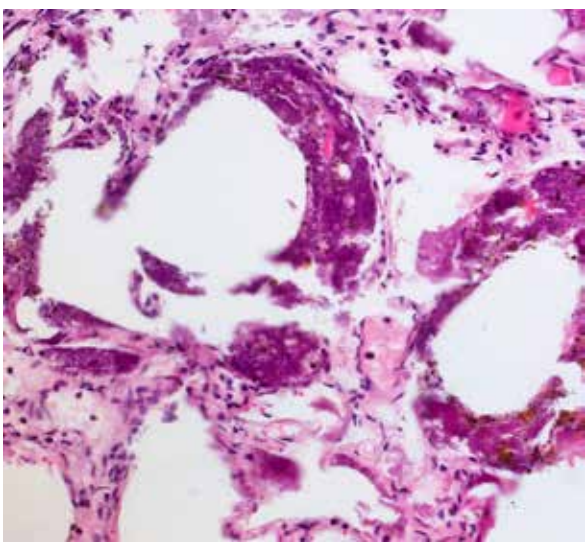

Figure 6: **Aspiration pneumonia in a calf. Photo: Brian Toland. Urinary/Reproductive Tract.**

Malignant Catarrhal Fever

A 13-month-old heifer was submitted to Kilkenny RVL having failed to respond to treatment for haemoglobinuria and pneumonia. On examination, there was pneumonia affecting approximately 20 per cent of lung tissue. There were multifocal suspect infarcts, and white foci on the kidneys. There was no urine to examine; however, there were multifocal haemorrhages and raised red foci on the mucosal surface of the bladder. On histopathology, there was severe, diffuse, fibrinosuppurative, necrotising cystitis with vasculitis, and multifocal nephritis with occasional lymphocytic vasculitis of medium-sized vessels. PCR tests for ovine herpesvirus 2 (OHV-2) were positive. Malignant catarrhal fever (MCF) in cattle is a usually fatal disease primarily caused by ovine herpesvirus 2 (OHV-2). It is not transmitted between cattle and the principal carriers are sheep. The disease is systemic, and lesions may be found in any organ, although severity and frequency varies greatly. The principal lesions are inflammation and necrosis of respiratory, alimentary, or urinary mucosal epithelium. There is no effective treatment, and most cases are fatal.

Figure 7: **Raised red haemorrhagic foci on the mucosal surface of the bladder in a case of malignant catarrhal fever in a heifer. Photo: Aideen Kennedy.**

Nervous System

Otitis media

Athlone RVL examined a two-month-old calf with a history of having been treated for an ear infection before it died. Its body condition was poor, weighing 49kg. There was bilateral enophthalmia, indicating dehydration. The rumen was dilated with sour milk and there was thickening of the ruminal wall and ulceration of the ruminal pillars. Intestinal contents were loose and the faeces pasty. There was pus in the tympanic bullae of both ears and a swab of the pus was positive on PCR testing for *Mycoplasma bovis*. *Candida* sp. was isolated from the rumen. A conclusion of otitis media, ruminal drinking, and rumenitis was made. *Mycoplasma bovis* is frequently involved in cases of otitis media in calves. However, *Mannheimia haemolytica*, *Pasteurella multocida*, *Trueperella pyogenes*, *Streptococcus* sp. and *Histophilus somni* can also be involved.

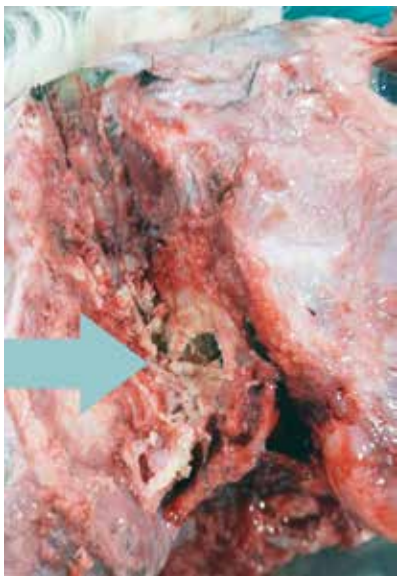

Figure 8: **Purulent exudate in the tympanic bullae of a calf that tested positive on PCR testing for *Mycoplasma bovis*. Photo: Denise Murphy.**

Musculoskeletal

Blackleg

Athlone RVL examined a yearling heifer with a history of having been moved to new pasture two days prior to death. She was found in a ditch, struggling and unable to get up, and was treated by the vet but there was no response to treatment, and she died. On gross post-mortem examination, there was severe, haemorrhagic oedema in the subcutaneous tissues of the ventral neck. There were dry, emphysematous haemorrhagic lesions in the muscles of the distal neck and shoulder, and there was excess blood-tinged thoracic fluid and a fibrino-haemorrhagic pericarditis. There was mild splenic enlargement. Fluorescent antibody technique (FAT) of the lesioned muscle was positive for *Clostridium chauvoei*. A diagnosis of blackleg was made, and advice given to vaccinate comrades with a multivalent clostridial vaccine.

Figure 9: **Blackleg lesion in the skeletal muscle of a heifer. Photo: Denise Murphy.**

A four-month-old calf was found dead and submitted to Kilkenny RVL. There was a fibrinous pericarditis, and the myocardium was blackened in appearance. The tongue muscle was black multifocally and there was dry emphysematous black muscle. *C. chauvoei* FAT results were positive, and a review of vaccination protocols was advised.

Figure 10: **Blackleg lesion in the tongue of a calf. Photo: Aideen Kennedy.**

Poisonings

Ragwort toxicity

A seven-year-old cow was presented to Kilkenny RVL with a history of neurological signs prior to death. On post-mortem examination, there was marked abomasal fold oedema and the liver was firm. Histopathology of the liver revealed multifocal-to-coalescing areas of dissecting fibrosis with disruption of the normal hepatic architecture. There was bile duct proliferation and, multifocally, hepatocytes varied in size with suspected megalocytosis. There was an associated encephalopathy with vacuolation noted predominantly at the grey/white matter interface. One very likely differential diagnosis for the changes seen is pyrrolizidine alkaloids toxicity or ragwort (*Jacobaea vulgaris*) poisoning. In cattle, most cases of ragwort poisoning occur over a period of weeks to months, but clinical signs can take up to 18 months to develop. Diarrhoea with straining, jaundice, photosensitisation, bottle jaw, and neurological signs can be symptoms of poisoning. There is no treatment for affected animals.

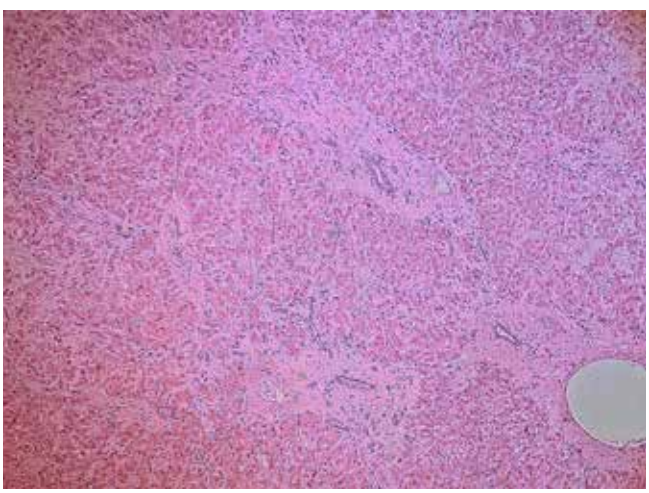

Figure 11: **Dissecting fibrosis, bile duct proliferation, and suspected megalocytosis in the liver of a cow. Photo: Lisa Buckley.**

Lead toxicity

Athlone RVL examined a 13-month-old heifer, submitted with a history of neurological signs; two cohort animals were displaying similar clinical signs. On necropsy, there was severe ecchymosis, petechiation, and haemorrhage of the thymus, kidneys and mediastinum. There was severe ecchymosis across the carcase musculature. Examination of the reticular contents disclosed a large aggregate of particulates that were grey and shiny. Toxic concentrations of lead were detected in the renal and hepatic tissue. Lead toxicity (plumbism) can present with a range of clinical signs including sudden death, blindness, ataxia, bruxism, head pressing, and other neurological presentations. Risk material for exposure to lead can include: old batteries; old lead paint, either on surfaces or in tins; painted gates, etc; lead pipes; and bonfire ash, among others. In this case, a discarded battery was discovered on the periphery of the field these heifers were grazing. Lead poisoning outbreaks are investigated thoroughly to safeguard public health and animal welfare. To reduce risk of lead poisoning, farmers are urged to examine their fields and hedges for sources of lead before turning cattle out to pasture and before silage-making.

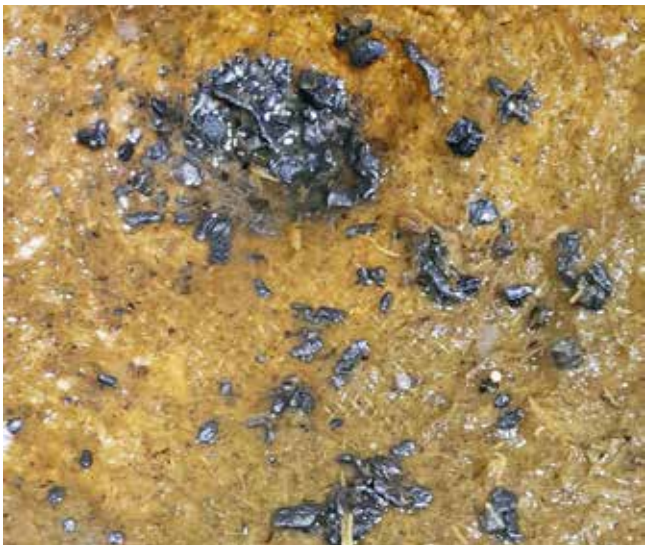

Figure 12: **Particulate fragments in the reticulum of a heifer that died from lead toxicity. Photo: Aoife Coleman.**

Sheep

Parasitic gastroenteritis and bacteraemia/septicaemia were the most common diagnoses at necropsy in sheep in the RVLs during May 2025.

Table 2: **The most common diagnoses in sheep submitted for necropsy in May 2025.**

Gastrointestinal Tract

Haemonchosis

Athlone RVL examined a three-year-old ewe with a history of sudden death. On necropsy, there was severe pallor of the carcase, and excess ascitic, pericardial, and thoracic effusions. Myriad parasites were disclosed across oedematous abomasal rugal folds and within the abomasal contents. *Haemonchus contortus* was identified as the parasite, with over a 70,000 eggs per gram (EPG) strongyle count. A diagnosis of haemonchosis was applied. *H. contortus* are prolific egg-layers. The principal way in which *H. contortus* survives in flocks over winter is through the persistence of larvae in a hypobiotic (dormant) state in the gut of the host. This feature lends itself to the development of anthelmintic resistance in *H. contortus* worms, and so resistance is a common feature in flocks affected by the parasite. Haemonchosis can occur in both adults and in young sheep. Anaemia due to blood loss is the usual cause of death in these cases, and it has been determined that each worm removes about 0.05ml of blood daily from its host, so a burden of 2,000 worms would result in a daily blood loss of 100ml. This can present as outbreaks across both lambs and ewes.

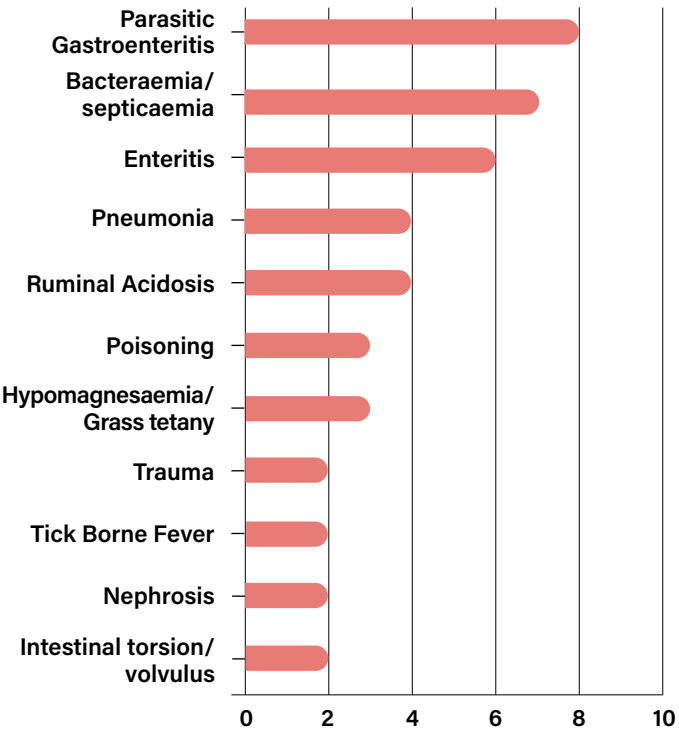

Figure 13: ***Haemonchus contortus*** **on the abomasal mucosa of a ewe. Photo: Aoife Coleman.**

A three-year-old ewe that was "pining" was submitted to Kilkenny RVL. On necropsy, the carcase was pale. There were large numbers of *H. contortus* parasites in the abomasum. The intestinal content was liquid. Strongyle egg counts were almost 3,000EPG and a review of parasite control was recommended, with examination of cohorts for signs of anaemia advised.

Fasciolosis

The carcases from two approximately-four-year-old ewes from the same holding were submitted to Sligo RVL with a history of sudden death. They had appeared normal, had lambed recently, and had access to meal. Both ewes presented with similar findings on gross post-mortem. They presented with fibrosed livers and large amounts of adult liver flukes (*Fasciola hepatica*) present in the gall bladder. Both rumens contained large amounts of meal. The ruminal pH was 5.45 and 5.46 respectively. The cause of death in these ewes was chronic fasciolosis and ruminal acidosis.

Intestinal torsion

Sligo RVL received two cases of caecal torsion in sheep. The first case was in a four-year-old ewe which had stopped eating, seemed dazed, and did not respond to treatment. There was a substantial strongyle burden and mild coccidial infection. In the second case, a two-month-old lamb which had been found dead was submitted for post-mortem examination. In this case, a severe coccidial burden was detected.

Respiratory Tract

Pneumonia

A three-month old lamb presented to Kilkenny RVL with a history of sudden death. The lungs had well-demarcated, bilateral, cranioventral consolidation. *M. haemolytica* was cultured. Histopathology revealed a fibrinopurulent bronchopneumonia characterised by leukocytes, predominantly neutrophils, fibrinous exudate, and cellular debris. Clusters of inflammatory cells with elongated nuclei ('oat cells') were also seen. *M. haemolytica* is one of the most important respiratory pathogens, resulting in serious outbreaks of acute pneumonia and deaths in neonatal, weaned, and growing lambs. The disease appears to occur most often in animals that have undergone recent stress such as transportation, weaning, change of diet, or commingling with animals from unrelated farms.

Figure 14: **Well-demarcated, bilateral, cranioventral, pulmonary consolidation in a hogget. Photo: Lisa Buckley.**

Ovine pulmonary adenocarcinoma

Athlone RVL examined a two-year-old hogget with a history of being found frothing at the mouth, coughing, and "off form" the day before she died. On post-mortem examination, there was bilateral anteroventral pulmonary consolidation extending into caudal lobes and pleuritis with adhesions to the costal pleura. In addition, an approximately 10cm-diameter, pale, firm tumour-like lesion was seen in the right caudal lung lobe that was suspicious for an ovine pulmonary adenocarcinoma (OPA) lesion. Other organs were unremarkable. *M. haemolytica* was isolated from lungs on culture. Histopathology of the lungs showed multifocal-to-coalescing areas of neoplastic nodules with acinar and papillary patterns adjacent to areas of suppurative bronchopneumonia with streaming activated macrophages ('oat cells'). The PCR test for OPA was positive. A diagnosis of OPA caused by jaagsiekte sheep retrovirus was made.

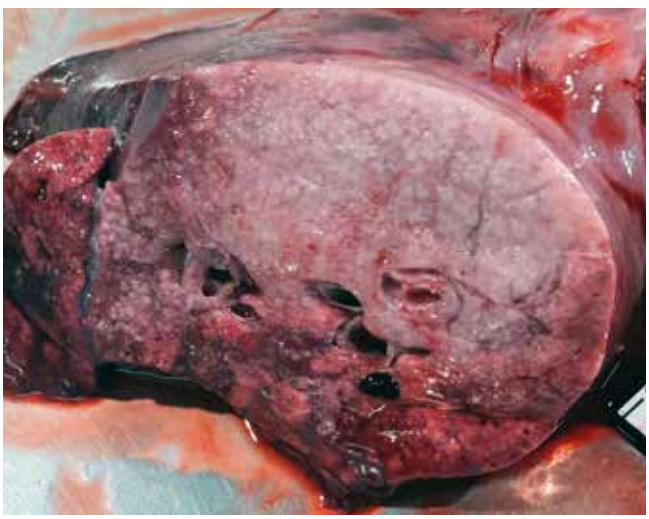

Figure 15: **Pale, firm, tumour-like lesion in the lung lobe that diagnosed as ovine pulmonary adenomatosis in a hogget. Photo: Denise Murphy.**

Urinary/Reproductive Tract

Urolithiasis

Sligo RVL examined the carcase of a five-week-old, recently-weaned pet lamb which had presented with bloating a day before death. On post-mortem examination, there were several litres of ascites with a distinctive urinary smell. There was an approximately 2cm-diameter haematoma affecting the right ureter where it inserts into the bladder. There were mild-to-moderate haemorrhages along the right ureter to the corresponding kidney. The bladder was small and contracted with petechiae on the mucosa. On histopathology, there was chronic, severe, diffuse, necro-haemorrhagic cystitis and nephritis. In this case, the cause of death most likely related to the ruptured ureter. Ureteral rupture most likely occurred due to urolithiasis. Male small ruminants are predisposed to urinary obstructions due to their special anatomy, namely the sigmoid flexure, as well as the urethral process in which urinary crystals or uroliths can get caught, leading to a mechanic obstruction. The formation of uroliths in small ruminants has been shown to be feed and water intake-related.

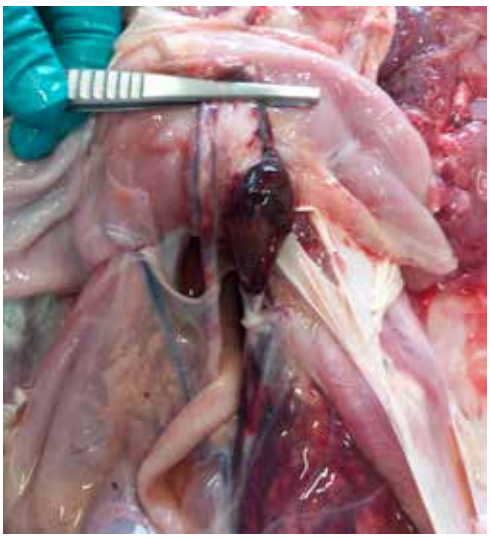

Figure 16: **Haematoma due to a ruptured ureter in a lamb. Photo: Rebecca Froehlich-Kelly.**

Poisonings

Copper toxicity

A six-year-old ewe was submitted to Kilkenny RVL. On necropsy, the carcase was jaundiced, and the kidneys were dark. There was also pneumonia with approximately 15 per cent of lung tissue consolidated. Copper levels were elevated, and histopathology changes were consistent with copper toxicity. *M. haemolytica* and *P. multocida* were identified in the lungs.

Horses

Intestinal volvulus

A fifteen-year-old Irish Sport Horse mare was submitted for post-mortem at Limerick RVL. The mare had been observed staggering and collapsed and died within a very short time frame despite treatment. On external examination, the abdomen was distended, and a large volume of blood was dispelled on opening into the abdominal cavity. A well-demarcated small-intestinal twist/volvulus was revealed containing bloody, watery contents. Multifocal-to-coalescing areas of petechial and ecchymotic haemorrhages were observed on the spleen, liver, kidneys and lungs, suggestive of endotoxaemia, disseminated intravascular coagulation, and septicaemia. A diagnosis of small-intestinal twist/volvulus was made.

Figure 17: **A well-demarcated, small-intestinal twist/volvulus containing bloody, watery contents. Photo: Brian Toland.**

Cats

Tuberculosis

An eleven-year-old, male, domestic, short-haired, neutered cat was submitted to Limerick RVL with a history of severe cough, dyspnoea, lethargy, weight loss, and bilateral uveitis for approximately three to four months. There was no response to treatment with antibiotics and anti-inflammatories. The lungs had a mottled appearance with dark red/black discolouration and multifocal pale areas. They were firm to the touch with multifocal areas of consolidation on the surface and in the parenchyma of the lungs with no abscessation present. There was a lack of normal aerated tissue and no gross lesion visible in bronchial and mediastinal lymph nodes. *Mycobacterium bovis* was cultured from lung tissue and lymph nodes. Human-to-cat and cat-to-human transmission of *Mycobacterium bovis* is rare but previously documented. The animal's feline leukaemia virus and feline immunodeficiency virus status was unknown; these infections could increase susceptibility to opportunistic infections like TB.

Figure 18: ***Mycobacterium bovis*** **was cultured from the lungs of a cat. Photo: Brian Toland.**