REGIONAL VETERINARY LABORATORIES REPORT

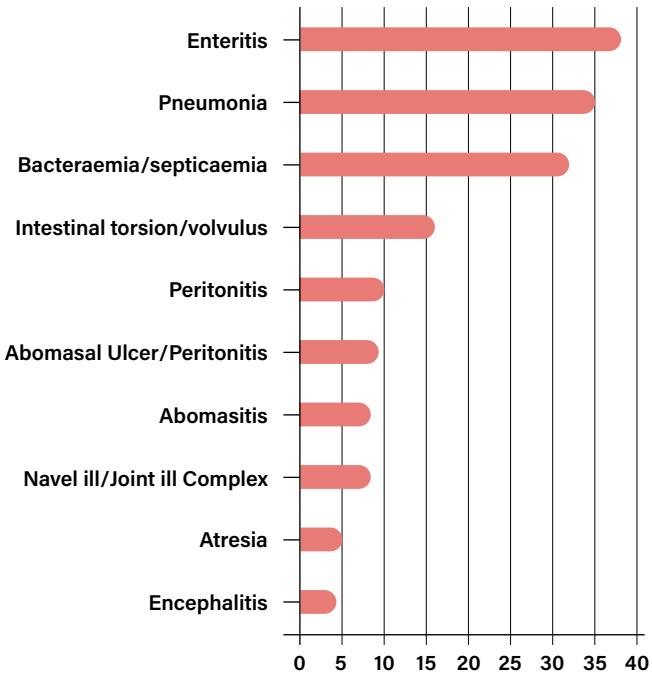
March 2024

Regional Veterinary Laboratories (RVLs) carried out necropsy examinations on 683 carcases and 338 foetuses during March 2024. Additionally, 1,933 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 March 2024.
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

Enteritis and pneumonia were the most common diagnoses at necropsy in cattle in the RVLs during March 2024.

Table 1: **The most common diagnoses in cattle submitted for necropsy in March 2024.**



Gastrointestinal Tract

Enteritis

Sligo RVL diagnosed enteritis of parasitic (e.g., *Cryptosporidium parvum*, coccidia), viral (e.g., Rotavirus, Coronavirus), or bacterial (*Escherichia coli*) aetiology in several young calves and neonates in March 2024. *E. coli*, in particular *E coli* K99, is a common cause of bacterial enteritis in neonates. Sligo RVL diagnosed neonatal enteritis and bacteraemia caused by this agent in a one-day-old calf who had presented with dullness and a very watery diarrhoea. *E. coli* K99 was detected in the very watery intestinal contents of this calf and *E. coli* was cultured from several organs.

Figure 1: **Liquid intestinal contents in a calf with enteritis. Photo: Ian Hogan.**

Rotavirus and *Cryptosporidium* were the most commonly detected pathogens in cases of calf diarrhoea over all the RVLs during the first quarter of 2024 (see Table 2). This finding is in line with previous years.

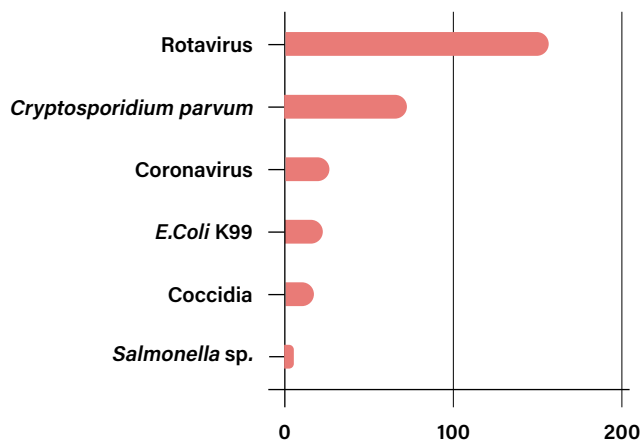


Table 2: **Pathogens detected in calf diarrhoea investigations during the first three months of 2024.**

Parasitic gastroenteritis

A two-year-old Limousin heifer was submitted to Limerick RVL. The animal had been found dead at an outside farm, where cohorts were not thriving, with some scouring; they had been wormed the previous September and were fed silage and hay outdoors. Necropsy revealed a dehydrated animal in poor condition, where the main findings were in the abomasum with multifocal non-perforated ulcers

approximately 0.5-1cm in diameter with minimal intraluminal haemorrhage on the abomasal mucosa, mostly concentrated near the duodenum; there was also a cobblestone appearance suggestive of parasitism. The rumen contained a moderate number of adult paramphistomes (rumen flukes). Histopathology of the abomasum showed marked mucus hyperplasia and metaplasia with larvae in one dilated gland indicative of nematode parasitism. There was a strongyle egg count of 600 eggs per gram (EPG) and very low liver copper concentration of 0.01mmol/kg (normal range 0.06-2.5mmol/kg). Parasitism is more severe in copper-deficient animals. A diagnosis of parasitic gastroenteritis was reported.

Figure 2: **Non-perforated ulcers in an adult heifer with parasitic gastroenteritis. Photo: Brian Toland.**

Abomasitis

A five-week-old calf from a group of 250 calves was submitted to Limerick RVL. The calves were housed and fed on an automatic feeder. Five calves had developed abomasal bloat; two died including the one submitted for necropsy, three recovered. On necropsy, the abdomen was distended. There was reddening of the small intestinal mucosa and emphysema of abomasal mucosa. Histopathology revealed lesions of haemorrhagic abomasitis.

Sarcina sp. bacteria were identified in the abomasal sections examined. This bacterium is strongly associated with emphysematous abomasitis in young calves. *Sarcina* are tolerant of low pH and may proliferate when there is an excess of fermentable carbohydrate within the acidic environment of the abomasum. Invasion of the abomasal mucosal barrier may require a mucosal defect which could be caused by ingestion of large volumes of milk or by abomasal ulcers associated with various stressors. *Sarcina* may be present in the environment but when introduced to abomasal contents may ferment sugars, producing carbon dioxide and ethanol, which can cause further gas accumulation and mucosal damage exacerbating severity. The importance of methodical, regular, and effective cleaning protocols for feeding equipment is also paramount.

Perforated abomasal ulcer

Athlone RVL examined a two-week-old calf with a history of being found recumbent and listless, and dying an hour later. On gross post-mortem examination, the abdomen was distended. There were ingesta free in the abdominal cavity and there was a 1cm perforation of the abomasal wall. There were two ulcers (one perforated, one non-perforated) on the abomasal mucosa. *Clostridium perfringens* toxins were not detected in a sample of abomasal contents and there was no significant bacterial isolate following culture of the abomasum. A diagnosis of a perforated abomasal ulcer was made.

Figure 3: **The serosal surface of the abomasum showing a perforated ulcer (above the label). Photo: Denise Murphy.**

Abomasal ulcers

Factors that are considered to contribute to the prevalence 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, type and quality of roughage being fed; bovine virus diarrhoea (BVD); infectious bovine rhinotracheitis (IBR); and the presence of certain enteric bacteria, fungi, and parasites.

Traumatic peritonitis

Two cows found dead were submitted to Kilkenny RVL. One cow had peritonitis with adhesions between the liver, diaphragm, and reticulum. A thin, approximately 9cm-long, sharp wire was located in the wall of the reticulum. The second cow had similar adhesions. There was also an abscess in the liver and there was pneumonia. No wire was identified in the second case, but previous foreign body involvement could not be excluded and an examination of feed and feeding equipment was advised.

Figure 4: **A metal wire in the wall of the reticulum, which led to peritonitis. Photo: Aideen Kennedy.**

Caecal volvulus

A three-year old-cow was presented to Kilkenny RVL with a history of abdominal distension prior to death, she had calved four days previously. On opening the abdomen, there was a diffuse peritonitis and the organs were coated with ingesta. There was dilation, torsion and subsequent rupture of the caecum. Caecal dilation, with or without volvulus, occurs sporadically in adult dairy cattle, usually within the first two months after calving, and hypocalcaemia can be a common lab finding. The aetiology of caecal dilation and volvulus is unclear, but the pathogenesis has been reported to be similar to that of abomasal displacement, in that increased grain feeding may result in greater quantities of volatile fatty acid production. This causes increased intraluminal gas production and decreases motility (ileus). The blind sac nature of the caecum perhaps contributes to the development of the condition.

Figure 5: **Rupture of the caecal wall following dilation and volvulus. Photo: Lisa Buckley.**

Respiratory Tract

Pneumonia

A four-month-old Friesian bull calf was submitted to Limerick RVL from a calf-to-beef production system with several losses. Necropsy revealed severe bronchopneumonia with consolidation of approximately fifty per cent of the lungs, with grossly visible and palpable white nodular necrotic foci in the parenchyma of the lungs. The trachea was inflamed, with bloody, frothy contents and the regional lymph nodes were markedly enlarged. *Trueperella pyogenes* was detected on culture and polymerase chain reaction testing (PCR) was strongly positive for *Mycoplasma bovis* and *Histophilus somni*.

Figure 6: **Pneumonia in the cranio-ventral lung lobes, a typical distribution in cases of bronchopneumonia. Photo: Brian Toland.**

A cow was submitted to Kilkenny RVL approximately five days after calving and having been noticed "off form". On necropsy, there was severe fibrinous pleuritis and pneumonia. The majority of the pulmonary tissue was affected, and there was severe oedema and distension of the interlobular septae. There was also a severe fibrinous pericarditis with adhesions to the pleura. *Mannheimia haemolytica* was cultured from multiple organs. Reports of acute pleuropneumonia in dairy cows, associated with *M. haemolytica*, have increased in Europe in the last number of years and these are sometimes associated with stressful conditions.

Figure 7: **Fibrinous pleuropneumonia from which *Mannheimia haemolytica* was cultured. Photo: Aideen Kennedy.**

Pneumonia, arthritis, and otitis

Sligo RVL received three calves, approximately four weeks old, from one holding which had reported a range of different problems within their calf group and had experienced significant losses. The first calf presented with widespread, rice grain-like, pale, necrotic foci in the lung, as well as consolidation affecting approximately 60 per cent of the lung parenchyma. *M. haemolytica* was cultured from lung tissue and *Mycoplasma bovis* was detected by PCR. Histopathology of the lung showed diffuse, chronic, severe, necro-suppurative pneumonia with multifocal areas of coagulative necrosis corresponding to necrotic foci noticed on gross. Some bronchioles presented with bronchiolitis obliterans, loss of epithelium, and epithelial attenuation, consistent with an earlier viral insult.

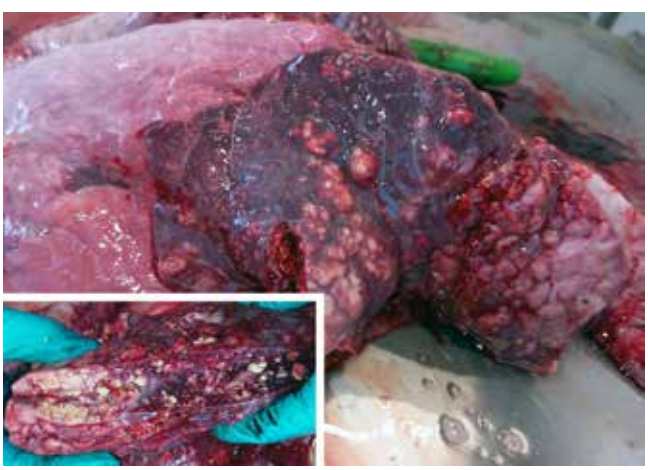


Figure 8: **"Rice grain necrotic foci" in a case of *Mycoplasma bovis* pneumonia in a calf, and in cross section (inset). Photo: Rebecca Froehlich-Kelly.**

The second calf was euthanised due to a purulent otitis which did not improve on treatment. On post-mortem examination, there was a purulent ear infection present in the right ear. There were no other visible lesions. *Mycoplasma bovis* was detected in the ear lesion and bovine herpesvirus 1 (BHV1), the causative organism of IBR, was detected in lung tissue by PCR. Histopathology of the lung showed diffuse, acute, moderate, interstitial pneumonia, and multifocal, acute, mild suppurative bronchopneumonia.
The third calf presented with purulent arthritis in the right carpal joint. No pathogen could be detected in the joint. *M. haemolytica*, *Pasteurella multocida* and BHV-1 were detected by PCR in lung tissue. Histopathology of the lung showed diffuse, acute, moderate necro-suppurative pneumonia. Chronic pneumonia, arthritis, and otitis media are common presentations of *Mycoplasma bovis*. IBR was a concurrent factor, potentially predisposing and adding to the severity of presentation.

Figure 9: **Fibrino-suppurative bronchopneumonia in a calf with concurrent arthritis. Photo: Brian Toland.**

A two-week-old Friesian heifer calf was submitted to Limerick RVL. The calf was recumbent for a week, with swollen front legs and there was no response to treatment with antibiotics. Necropsy revealed a swollen umbilicus with abscessation of the front legs and fibrin tags present in the joints of the fore and hindlimbs; lungs had a severe, diffuse fibrino-suppurative pleuropneumonia. Histopathology revealed a severe fibrino-suppurative bronchopneumonia with multifocal areas of caseous necrosis in the lungs, and discrete areas of non-suppurative inflammation suggestive of gram-negative bacteria in the liver. A mixed bacterial growth was isolated from joint fluid, spleen, liver and lung. Previous treatment may have impaired culture results.

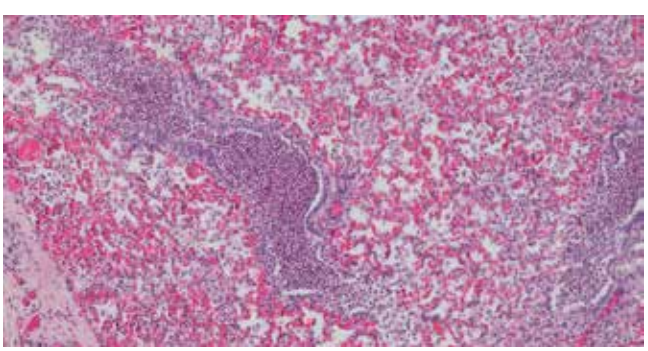


Figure 10: **Bronchopneumonia in a calf. Photo: Brian Toland.**

Urinary/Reproductive Tract

Deformities

Sligo RVL diagnosed schistosomus reflexus in a perinatal calf which had been delivered by caesarean section. This is a relatively common malformation. The case presented typically with a curved spine and non-closure of the midline resulting in exposed viscera. The head was tucked in between the limbs. The tongue was protruding, and the limbs ankylosed, both common findings in this condition.

Figure 11: **Schistosomus reflexus in a calf. Photo: Shane McGettrick.**

Similarly common, but rare in the context of overall birth numbers, is the occurrence of atresia jejuni. Sligo RVL detected a cord atresia in the last third of the jejunum in a four-hour-old calf.

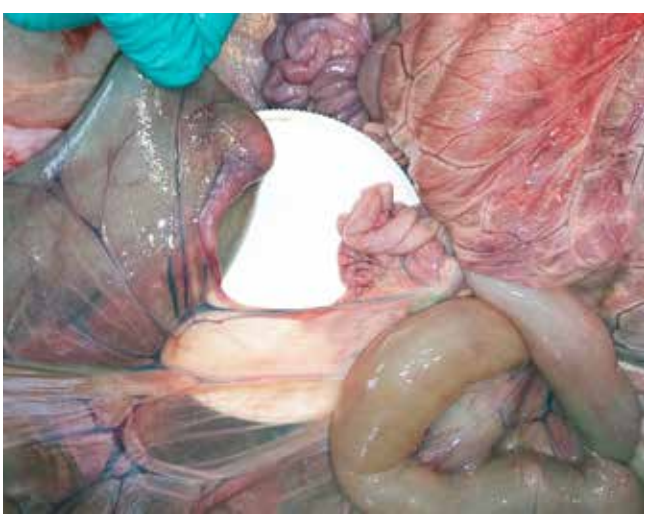


Figure 12: **Atresia jejuni in a perinatal calf. Photo: Rebecca Froehlich-Kelly**

A two-day-old calf was presented to Kilkenny RVL with a history of bloat and dehydration prior to death. On post-mortem examination, there was a diffuse fibrinous peritonitis. The colon was blind ending, so a diagnosis of atresia coli was made. Intestinal atresia is usually considered a sporadic event, although there may be a hereditary aetiology in some dairy calves, with the condition predominantly reported in the Holstein-Friesian breed. An ischaemic event affecting intestinal vasculature is considered to be the most likely explanation for sporadic cases.

Dystocia

Figure 13: **Haemorrhages in the costal pleura, a finding associated with dystocia. Photo: Denise Murphy.**

Athlone RVL examined a bovine perinate that had lived for only 12 hours. It had been an assisted delivery, and the calf was given two litres of colostrum after birth. It took the calf a while to stand but he seemed to be doing well. The calf was found dead the next morning. On gross post-mortem examination, the calf was very big with a bodyweight of 58kg and there was marked bilateral enophthalmia suggestive of dehydration and metabolic acidosis. There were haemorrhages on the right costal pleurae at the level of the first four ribs, and haemorrhage in the right hindquarter muscles. Tests for bovine abortifacients proved negative. A conclusion of metabolic acidosis and foetal hypoxia secondary to dystocia was proposed. Foetal hypoxia can be caused by a number of things, including dystocia (e.g., due to foetal oversize, as suspected in this case), prolonged calving (e.g., maternal hypocalcaemia), and placental insufficiency (perhaps due to a placentitis).

Cardiovascular System

Cardiomyopathy

Figure 14: **Hepatic fibrosis in a case of chronic congestion due to right-sided heart failure. Photo: Rebecca Froehlich-Kelly**

A two-month-old calf with a history of mild pneumonia-like signs was submitted to Sligo RVL. On post-mortem, there was extensive pericardial effusion; the right ventricle was dilated. The lungs appeared mottled, and the liver was swollen and fibrosed, presenting a typical 'nutmeg' pattern. There was arthritis in the left carpal joint. On histopathology of the liver, there was diffuse hepatic vacuolation and periacinar congestion. In the lung, there were multifocal haemorrhages and atelectasis. Large amounts of macrophages and multinucleated cells were present. Dilatative cardiomyopathy with chronic congestive right-sided heart failure and likely terminal sepsis was diagnosed as cause of death.

Figure 15: **Hepatic fibrosis in a case of chronic congestion due to right-sided heart failure. Photo: Rebecca Froehlich-Kelly.**

Posterior vena cava thrombosis

Athlone RVL examined a 12-month-old weanling with a history of anorexia and some coughing. On post-mortem examination, there was a large abscess in the liver extending into the posterior vena cava with septic thrombus in the posterior vena cava, and multifocal septic thromboembolism and abscesses in all lung lobes. Hepatic abscesses are commonly associated with high-energy, limited-roughage diets, leading to increased lactic acid production and lower rumen pH, potentially causing lactic acidosis. Ruminal lesions may result from repeated bouts of lactic acidosis. Bacterial emboli from these lesions invade the hepatic portal venous system and are transported to the liver, where they can develop into abscesses. A diagnosis of posterior vena caval thrombosis and septic pulmonary thromboembolism secondary to liver abscessation was made.

Figure 16: **Septic pulmonary thromboembolism in a case of posterior vena cava thrombosis. Photo: Denise Murphy.**

Septic pulmonary embolism

An adult cow, with a history of having recovered from limb paralysis and facial swelling a month previously, was found dead before submission to Kilkenny RVL. There was moderate and extensive bruising/myositis and cellulitis adjacent to the tail head and extending to the hind quarter. There were multifocal septic nodules throughout the lungs. A diagnosis of septic pulmonary embolism was made, which may have been related to the extensive myositis seen. A role for injury cannot be ruled out, with subsequent septicaemia and embolic spread to the lungs.

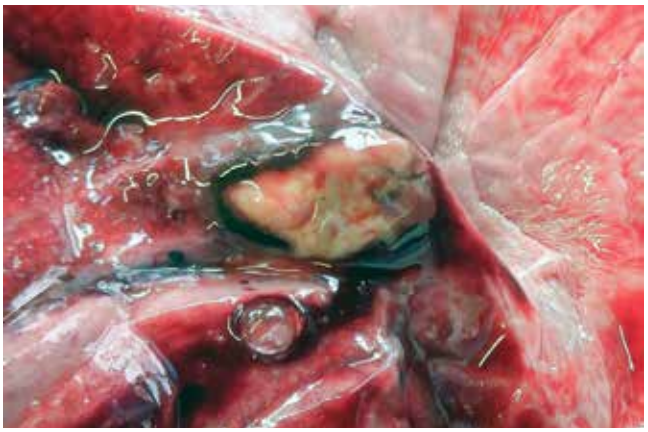


Figure 17: **A septic embolus in a cow's pulmonary parenchyma. Photo: Maresa Sheehan.**

Nervous System

Fractured skull

An 11-month-old weanling was found dead and submitted to Kilkenny RVL. On necropsy, there was a comminuted skull fracture approximately midline on the frontal bone. There was haemorrhage multifocally, particularly at the brain stem. Trauma was considered the likely cause.

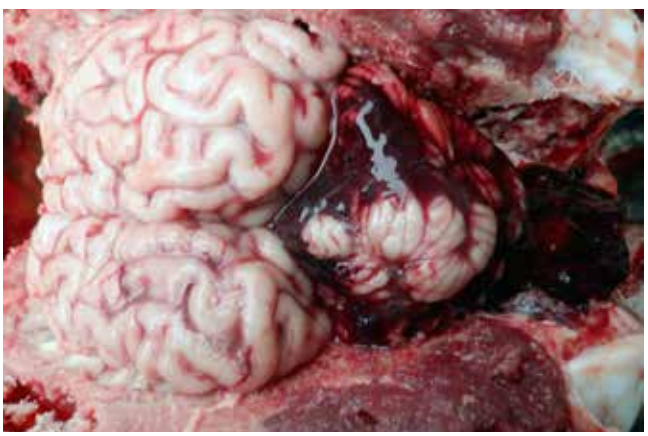


Figure 18: **Haemorrhage at the brain stem in a weanling with a fractured skull. Photo: Aideen Kennedy.**

Musculoskeletal

Congenital joint laxity and dwarfism

A one-day-old calf was submitted to Dublin RVL. The calf came from a small suckler herd of 22 cows. They all had been vaccinated against leptospirosis. The herd had had dwarf calves before. On gross post-mortem, the calf presented with kyphosis, bilateral excessive extension of metacarpophalangeal and metatarsophalangeal joints, and bilateral wide and short epiphysis of the femur and humerus. The femoral epiphysis measured 8cm in length and there was mild superior brachygnathia or 'parrot mouth.' The histopathological examination of the bone revealed that, in the physis, there was multifocal absence of proliferative zone and disorganisation of proliferative zone, changes that may be indicative of chondrodysplasia. The cobalt level in the liver was 0.18µmol/kg (normal range: 0.7-5.0µmol/kg), so quite low. A review of mineral supplementation was recommended, along with mineral forage analysis to ensure adequate cobalt intake. Manganese level in the liver was 18.72µmol/kg (normal range: 45.50-109.21µmol/kg). This level seems very low, but according to the literature, foetal and calf liver and kidneys levels are low if manganese is <1.0ppm wet weight and this result is 1.03ppm wet weight, so is still considered in the normal range.

Figure 19: **Bilateral excessive extension of metatarsophalangeal joints. Photo: Sara Salgado.**

The main findings in this case were lesions typically observed in congenital joint laxity and dwarfism (CJLD); this is a condition seen sporadically in beef cattle believed to be associated with gestational nutrition. The definitive cause of CJLD has not been determined, but it is mostly associated with sole feeding of fermented forages to cows during mid-to-late gestation, without any concentrate supplementation. From previous recorded outbreaks, spring born calves appear to be the most affected. Manganese levels seem to be an important factor in this condition. There is some evidence that correlates this condition to low concentrations of liver manganese in affected calves, however, confirmation of manganese deficiency in calves is difficult and time-consuming. Manganese deficiency has previously been associated experimentally and clinically with reduced reproductive performance and skeletal abnormalities in calves.

Miscellaneous

Figure 20: **Severe enophthalmos as a sign of dehydration in a calf with omphalophlebitis and peritonitis. Photo: Rebecca Froehlich-Kelly.**

Omphalophlebitis

Sligo RVL received two one-week-old calves from the same holding, which had presented with diarrhoea and dehydration. Both calves had similar findings on post-mortem examination. There was fulminant peritonitis in particular around the umbilical remnant vessels and liver, as well as some pleuritis. Both calves had severe enophthalmos. *E. coli* was cultured from several organs.

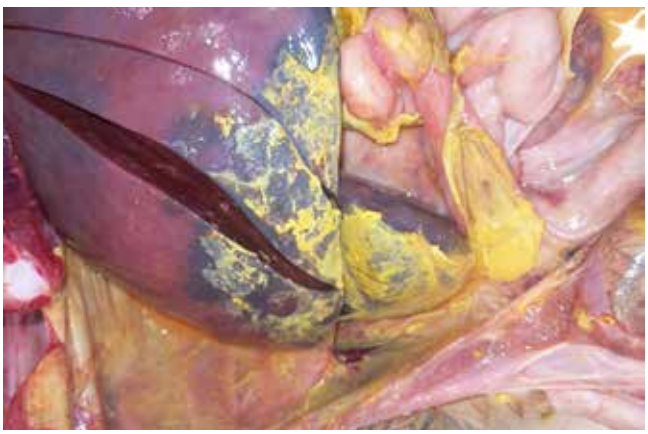


Figure 21: **Omphalophlebitis and peritonitis in a calf. Photo: Rebecca Froehlich-Kelly.**

A one-week-old calf was presented to Kilkenny RVL with a history of recumbency prior to death. On post-mortem examination, there was a diffuse severe fibrinous peritonitis and pleuritis. The umbilicus was swollen with pus at its centre. *E. coli* was cultured from multiple organs. The animal also had a very low zinc sulphate turbidity (ZST) test result of two, indicating failure of colostrum absorption which likely contributed to the ascending navel infection. A review of umbilical hygiene in the neonatal period, as well as a review of colostrum feeding and management, was advised.

Figure 22: **Peritonitis and pleuritis, both likely sequels to omphalophlebitis. Photo: Lisa Buckley.**

Athlone RVL examined a one-week-old calf with a history of sudden death. The umbilicus was enlarged and there was necrosis and pus visible in a cross section with the infection tracking into the abdominal cavity, and there was a diffuse fibrinous peritonitis. The joints and heart were unremarkable. *E. coli* was isolated from a swab of the navel. A diagnosis of omphalophlebitis ('navel ill') and peritonitis was made.

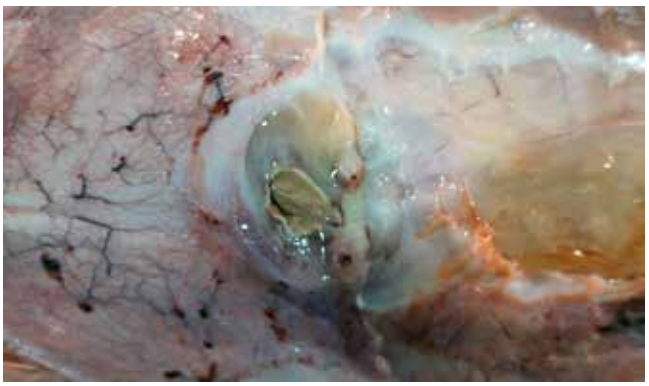


Figure 23: **View of the umbilicus in a case of omphalophlebitis and peritonitis. Photo: Denise Murphy.**

Poisonings

Pyrrolizidine alkaloid toxicity

Athlone RVL examined two eleven-month-old weanlings submitted for necropsy with a history of listlessness and inappetence. Both animals had been recently purchased. Gross lesions were consistent with severe, bilateral, renal haemorrhage with marked perirenal oedema. Haemorrhage into the pelvic cavities was pronounced. There was severe petechiation and ecchymosis across the mucosa of the forestomachs, with a thickened and hyperaemic mesentery. Meso-colonic oedema was severe on examination, with rectal prolapse. The liver was diffusely firm and yellow. Histopathology disclosed a severe, chronic, fibrosing, dissecting hepatopathy with bile duct hyperplasia, megalocytosis and multifocal necrosis. Further, there was multifocal mild spongiosis at the grey/white interface in the cerebrum. Severe hepatopathy was seen, which was likely toxic in origin. Differential diagnoses include ragwort (*Jacobaea vulgaris*) poisoning and aflatoxin, among others. The brain changes were consistent with secondary encephalopathy. Haemorrhages observed in the carcase were likely the result of liver failure (haemorrhagic diathesis).

Figure 24: **Renal pallor and haemorrhage. Photo: Aoife Coleman.**

Pyrrolizidine alkaloid toxicity due to ingestion of ragwort is a recognised syndrome in farmed animals and horses. Pyrrolizidine alkaloid hepatotoxins can be found in a variety of plant species with ragwort being associated most frequently. Alkaloids are metabolised to hepatoxic pyrrolic metabolites by cytochrome P450 in the liver. Interference with mitosis and normal hepatocellular function, tissue necrosis and fibrosis are featured consequences. The onset of clinical disease can often be several months after

exposure, with peak presentation tending to be in spring, possibly related to ragwort-contaminated silage being fed over winter. Described clinical signs include hypersensitivity, jaundice, hepatic encephalopathy, tenesmus, head pressing and secondary photosensitisation.

Figure 25: **Petechiation and ecchymosis over the sternum. Photo: Aoife Coleman.**

Sheep

Bacteraemia/septicaemia and chronic fasciolosis were the most common diagnoses at necropsy in sheep in the RVLs during March 2024.

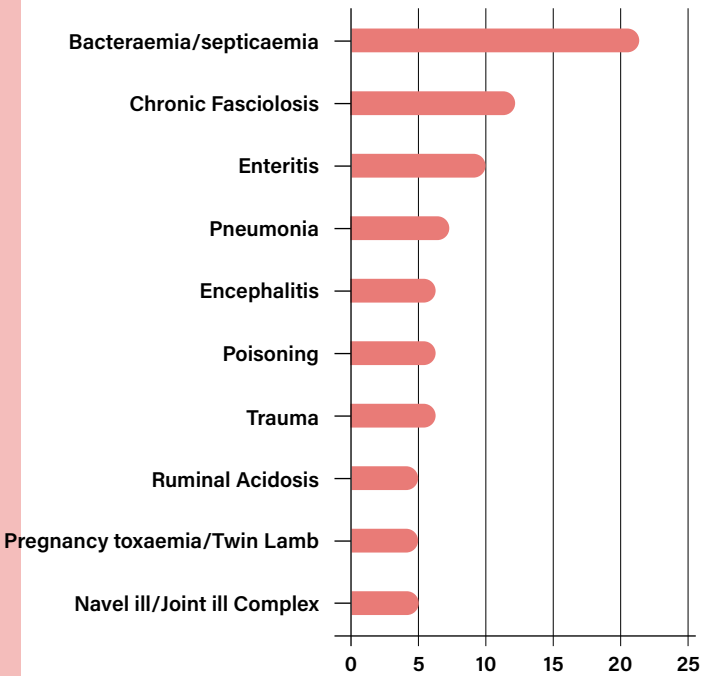


Table 3: **The most common diagnoses in sheep submitted for necropsy in March 2024.**

Gastrointestinal Tract

Figure 26: **Wet appearance of a lamb with watery mouth disease. Photo: Aideen Kennedy.**

Toxaemic colibacillosis ('watery mouth disease')

Two lambs, each two-days-old, were found dead and submitted to Kilkenny RVL. Their mouths had a wet appearance; there was a very small volume of milk mixed with saliva in the abomasum. ZST results indicated failure of passive transfer and *E. coli* was cultured from multiple organs. Toxaemic colibacillosis ('watery mouth disease') was diagnosed. This condition is caused by inadequate intake of colostrum and ingestion of *E. coli* from the environment after birth (bedding, teats etc). It typically affects lambs within 72 hours of birth. Interestingly, the *E. coli* isolated from these cases didn't possess the K99 antigen. Some lambs develop copious salivation. On post-mortem examination, the signs are non-specific. Affected lambs are usually severely dehydrated and there may be saliva or traces of colostrum in the abomasum.

Figure 27: **Abomasal contents in a lamb with watery mouth disease. Photo: Aideen Kennedy.**

Clostridial enterotoxaemia (pulpy kidney)

Limerick RVL examined a six-week-old Texel lamb from a 400-ewe flock. The lamb group had been vaccinated for clostridial disease 10 days prior to the death. The lamb was found dead and was the fourth death in 10 days. On post-mortem examination, there was a fibrin clot in the pericardial sac. A sample of urine tested positive for glucose and the intestinal contents tested positive for *C. perfringens* and its associated epsilon toxin. A diagnosis of pulpy kidney disease was made.

Fasciolosis

Fasciolosis, acute and chronic active, is an ongoing frequent diagnosis in sheep carcases submitted to Sligo RVL. Common post-mortem findings are subcutaneous oedema, ascites, pleural effusion and peritonitis, as well as a variety of liver damage. Lesions observed on the liver range from presence of haemorrhagic tracts which are caused by migrating larvae, to severe fibrosis and peritonitis due to chronic fasciolosis.

Figure 28: **Severely fibrosed liver due to fasciolosis with peritonitis in a ewe. Photo: Shane McGettrick.**

Respiratory Tract

Pulmonary abscessation

Athlone RVL examined a two-year-old ewe that had aborted twin lambs and died soon after. There were multifocal purulent necrotic abscesses throughout all lung lobes. The liver was enlarged; the uterus had not involuted and contained foetal membranes and bloody fluid. Tests for ovine abortifacients in the lambs proved negative. A conclusion of pulmonary abscessation was made and it was suggested that the bacteraemia/septicaemia led to the ewe aborting her lambs.

Figure 29: **Pulmonary abscessation in a ewe. Photo: Denise Murphy.**

Urinary/Reproductive Tract

Uterine trauma

Athlone RVL examined a two-year-old ewe that was heavily pregnant when found dead. The uterus was purple-coloured and friable, and had ruptured and contained macerated lamb parts. Eye fluid parameters were normal. A conclusion was reached of toxaemia secondary to carrying dead lambs and subsequent uterine rupture.

Figure 30: **An ovine uterus which had ruptured (arrow). Photo: Denise Murphy.**

Sligo RVL diagnosed uterine trauma, usually in the form of a tear in the corpus, as cause of death in four ewes submitted in March 2024. One case involved a six-year-old ewe which had given birth, with assistance, to a large lamb. The ewe appeared healthy in the hours after but then deteriorated rapidly. On post-mortem examination, there was abdominal haemorrhage around the uterus, placenta was found free in the abdomen, and an approximately 4cm-sized tear was detected on the dorsum of the uterus.

Abortion

Three lamb foetuses with their placentas were submitted to Kilkenny RVL. There were no lesions visible on the lambs. The placentas, however, were inflamed and there was an exudate on both the cotyledons and the intercotyledonary areas. PCR results were positive for both *Toxoplasma gondii* and *Chlamydophila abortus*. Both agents are potential zoonoses.

Figure 31: **Placentitis from a case where multiple abortifacients were detected. Photo: Aideen Kennedy.**

An aborted ovine foetus was submitted to Kilkenny RVL for post-mortem examination. There were multifocal pale circular lesions on the liver and the placenta appeared inflamed. On histopathology, there was a severe necro-suppurative hepatitis and a suppurative placentitis with intralesional bacterial colonies. *Campylobacter fetus* subspecies *fetus* was cultured from foetal stomach contents. The initial source of this infection is the faeces of domestic livestock, dogs, and wildlife, including birds. Contamination of water supplies or feed troughs with faeces may pose a risk. Ingestion of food or water contaminated with the bacteria gives rise to a primary infection during pregnancy. Large numbers of organisms are present in the products of abortion and these are the main source of infection for susceptible ewes. Abortion usually occurs in the last third of pregnancy and large abortion storms may occur. The ewes do not become clinically ill and do not abort from this cause in subsequent pregnancies. Immunity is likely to be lifelong. Control is by prompt, strict isolation of infected animals, early diagnosis, and disinfection of contaminated areas. Dividing the flock into two or three separate lambing groups may help to limit the spread of infection. Contamination of feedstuffs and water should be avoided. *Campylobacter fetus* is zoonotic.

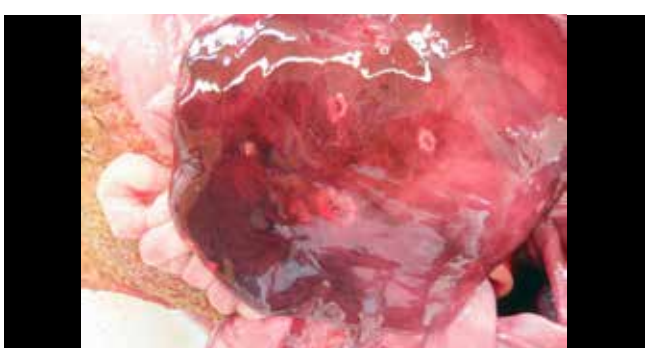


Figure 32: **Abortion due to *Campylobacter fetus* subspecies *fetus*. Photo: Lisa Buckley.**