

REGIONAL VETERINARY LABORATORIES REPORT

March 2025

Regional Veterinary Laboratories (RVLs) carried out necropsy examinations on 1,105 carcasses and 234 fetuses during March 2025. Additionally, 1,898 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 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

Enteritis and 'navel ill'/'joint ill' complex were the most common diagnoses at necropsy in cattle in the RVLs during March 2025.

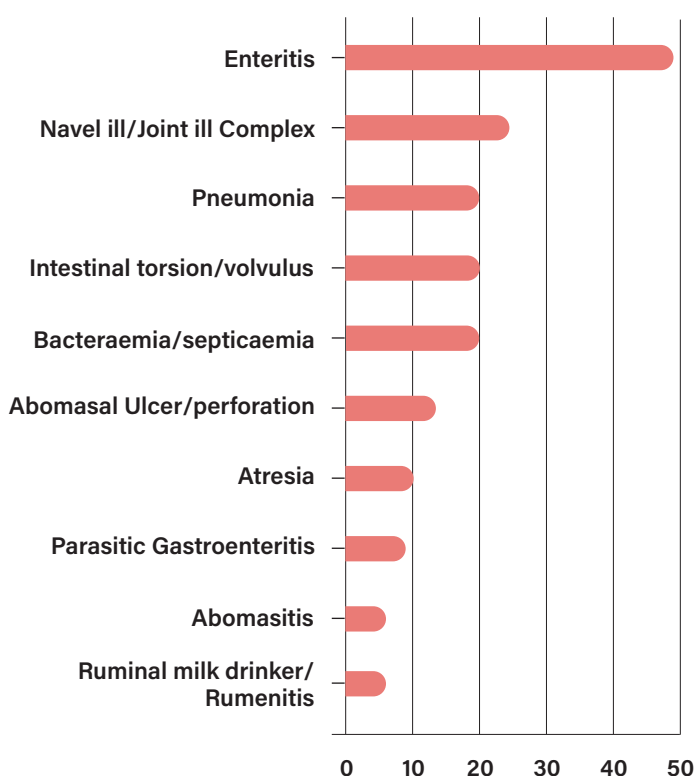


Table 1: The most common diagnoses in cattle submitted for necropsy in March 2025.

Gastrointestinal Tract

Parasitic gastroenteritis

A heifer with a history of diarrhoea was submitted to Kilkenny RVL. There had been one previous death on the farm. On post-mortem examination, there was a marked 'Morocco leather' cobblestone appearance to the mucosal surface of the abomasum indicating severe chronic diffuse abomasitis. In addition, there was a multifocal exudate on the surface. The intestinal contents were liquid. On McMaster examination, there was a strongyle egg count in excess of 2,000 eggs per gram (EPG). Parasitic gastroenteritis was diagnosed, and a review of parasite control was advised.

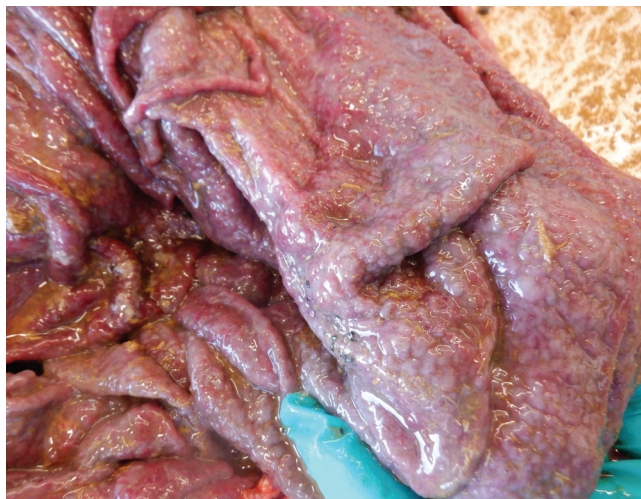


Figure 1: 'Morocco leather' appearance to the abomasum in a case of parasitic gastroenteritis. Photo: Aideen Kennedy.

Athlone RVL examined a one-year-old bullock with a history of loss of condition and diarrhoea over the preceding days with no response to treatment. Necropsy disclosed a pale carcass with fibrinous exudate in the peritoneal and pleural cavities. The rugal folds of the abomasum were markedly thickened, with hyperaemia and multifocal fibrinous deposition across apical surfaces. McMasters testing and parasitic identification revealed a 10,000EPG strongyle egg count with a severe adult trichostrongyle burden in abomasal washings. On histopathology, diffusely the mucosa was severely thickened by elongated and tortuous hyperplastic abomasal glands, with multifocal lymphoid follicles in the lamina propria extending into the submucosa. Within the abomasal wall and lumen were myriad sections and cross-sections of parasites. There was a diffuse, fibrinosuppurative, necrotising abomasitis at the apical surface of the abomasal mucosa.

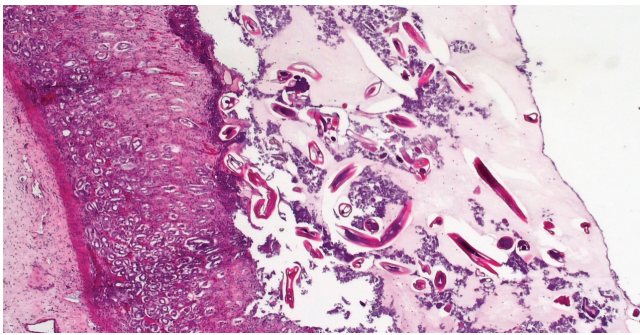


Figure 2: Sections and cross-sections of nematodes in the abomasal wall of a bullock. Photo: Aoife Coleman.

Enteritis and septicaemia

Two Friesian calves, one-week-old, were submitted to Limerick RVL with no response to treatment for pneumonia. There had been a number of deaths with similar symptoms among their cohorts. On external examination of the carcasses, there was faecal staining of the tail and hindquarters, and post-mortem examination also revealed congested lungs with multifocal yellow areas of fibrin exudation on the surface. The small and large intestines had hyperaemic mucosa with pale brown watery contents. *Salmonella enterica* subspecies Arizona was detected from the lung, spleen, liver, and intestines. ZST results were less than 12 units, which is interpreted as inadequate, and suggests that colostrum feeding was not successful. However, calves with a concurrent disease will have reduced immunoglobulin as it binds with antigen, and it may be difficult to determine whether inadequate immunity or excessive challenge is the more significant factor in causing disease. A diagnosis of *Salmonella* septicaemia was made. *Salmonella* Arizona can cause disease in various farmed species, including cattle, and may be involved in outbreaks. It is a zoonosis and elevated hygienic precautions on farm are indicated to prevent human infection especially among pregnant or immunocompromised staff or family.

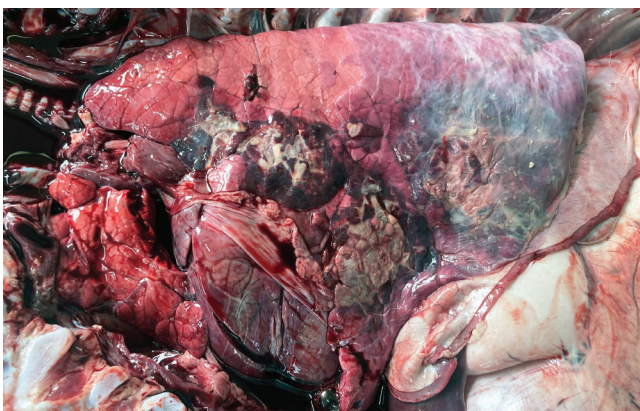


Figure 3: Calf lungs with congestion and multifocal yellow areas of fibrinous pleuritis from which *Salmonella enterica* subspecies Arizona was detected. Photo: Brian Toland.

Abomasal ulceration

A one-month-old calf presented to Kilkenny RVL with a history of bloat prior to death. On post-mortem examination, there were multifocal, circular 'target lesions' on the abomasal mucosa. Histopathology revealed a severe

necro-suppurative abomasitis with multiple fungal hyphae visible. A diagnosis of abomasal ulceration with secondary fungal infection was made. A large number of 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; deficiencies in minerals 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* spp., and *Helicobacter pylori*.

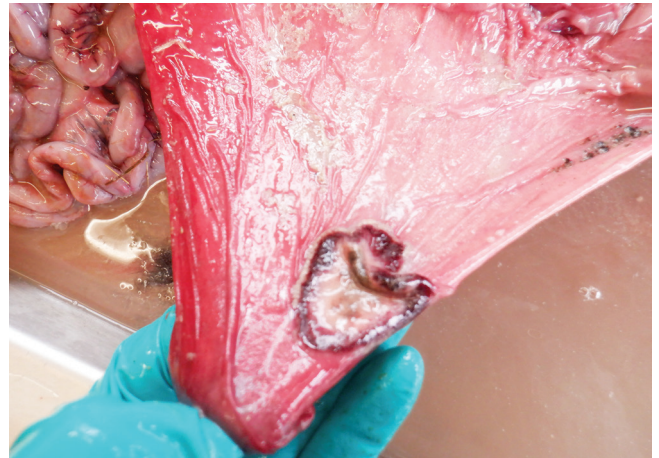


Figure 4: Abomasal ulceration with secondary fungal infection in a calf. Photo: Lisa Buckley.

Peritonitis

A one-day-old pedigree Aberdeen Angus calf was submitted to Limerick RVL for post-mortem, it had had an uneventful birth and appeared distressed before it died. Post-mortem examination revealed infected umbilical vessels extending to the bladder and liver and a generalised peritonitis. There was a mixed bacterial growth from liver, spleen, lung, and kidney. Navel infection (omphalitis) can lead to peritonitis and septicaemia. In many cases of septicaemia, bacteria may also gain entry through the gut within the first few hours of life before colostrum ingestion, rather than from umbilical infection.



Figure 5: A diffuse peritonitis in a calf. Photo: Brian Toland.

Athlone RVL examined a two-day-old calf with a history of having been dull since birth. It was treated but showed poor response and died. On gross post-mortem examination, there was a diffuse, fibrinous peritonitis and a fibrinous arthritis in both stifle joints. The liver was enlarged and jaundiced, and the lungs were congested with some fibrinous pleurisy on the caudal lung lobes. There was also a mild fibrinous pericarditis. The navel appeared unremarkable. A diagnosis of peritonitis, pericarditis, pleurisy, and joint ill was made.



Figure 6: A fibrinous arthritis in a calf. Photo: Denise Murphy.

A one-week-old calf was submitted to Kilkenny RVL. On necropsy, there was diffuse, fibrinous peritonitis; the intestines, liver, and kidneys were fibrin-covered. There was a purulent abscess deep in the umbilical vessels. A diagnosis of navel ill and peritonitis was made and a review of navel hygiene at calving was recommended.



Figure 7: Peritonitis in a calf; the intestines, liver, and kidneys are fibrin-covered. Photo: Aileen Kennedy.

Gastrointestinal herpesvirus infection

A neonatal calf with respiratory signs was submitted to Kilkenny RVL. On examination, there were multifocal, raised pale areas of necrosis along the mucosa of the oesophagus. There was pneumonia with approximately 30 per cent of pulmonary tissue consolidated cranioventrally. Polymerase chain reaction (PCR) testing returned a positive result for bovine herpes virus 1 (BHV-1) and zinc sulphate turbidity (ZST) results indicated failure of passive transfer of colostral immunity. BHV-1 usually causes pathological changes to the respiratory systems, such as infectious bovine rhinotracheitis (IBR); however, the virus has the ability to induce necrotic lesions in the alimentary system.



Figure 8: Multifocal, raised white areas of necrosis along the mucosa of the oesophagus of a neonatal calf, due to bovine herpesvirus 1. Photo: Aileen Kennedy.

Respiratory Tract

Infectious bovine rhinotracheitis

A four-month-old calf with a history of respiratory signs was submitted to Kilkenny RVL. There had been two previous losses in the herd. On necropsy, there was a marked tracheitis. The lungs were congested and oedematous. PCR results for IBR (BHV-1) were positive. In addition, there was a large volume of undigested grain in the rumen. Ruminal acidosis was confirmed by a very acidic rumen pH. A review of diet and feeding management was advised.

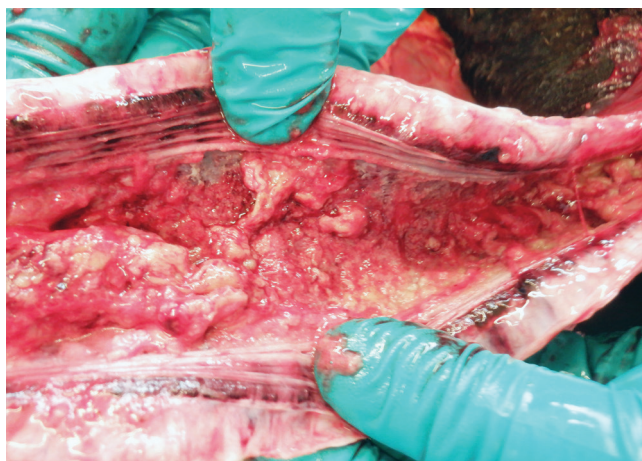


Figure 9: Fibrino-necrotic tracheitis due to bovine herpesvirus 1 in a calf. Photo: Aileen Kennedy.

Urinary/Reproductive Tract

Schmallenberg virus

A calf was euthanised at birth due to severe arthrogryposis of all four limbs and presented to Kilkenny RVL. Schmallenberg virus was detected by PCR. Schmallenberg virus infection causes only mild, unspecific clinical signs such as pyrexia, milk drop, anorexia, weight loss, and diarrhoea in adults. In pregnant animals, it can cause abortions from the early stages of pregnancy and a range of congenital deformities that primarily affect the central nervous and musculoskeletal system and may be variable in severity. Deformities commonly include: arthrogryposis, kyphosis, scoliosis, torticollis, brachygnathia, hydranencephaly, and cerebellar dysgenesis, or 'dummy' calves may be born, if the dam is infected at certain times during pregnancy.



Figure 10: Severe arthrogryposis of all four limbs of a bovine foetus due to Schmallerberg virus. Photo: Lisa Buckley.

A full-term bovine foetus was submitted to Kilkenny RVL. On examination, there was arthrogryposis, an enlarged heart, and mild hydranencephaly. PCR results were positive for Schmallerberg virus.



Figure 11: Another case of arthrogryposis due to Schmallerberg virus in a bovine foetus. Photo: Aideen Kennedy.

Mastitis

A 13-month-old heifer was submitted to Kilkenny RVL for post-mortem examination. The animal was observed recumbent and gasping prior to death. On necropsy, there was a severe, suppurative mastitis affecting the front and hind quarters. The udder was hard and enlarged. *Trueperella pyogenes* and *Streptococcus dysgalactiae* were isolated from the mammary gland. *S. dysgalactiae* was also isolated from the liver, suggesting a bacteraemia. It was advised to examine the housing environment and determine if there was a cohort animal that was 'suckling' other animals, or other risk factors that may have resulted in the development of mastitis in such a young animal.

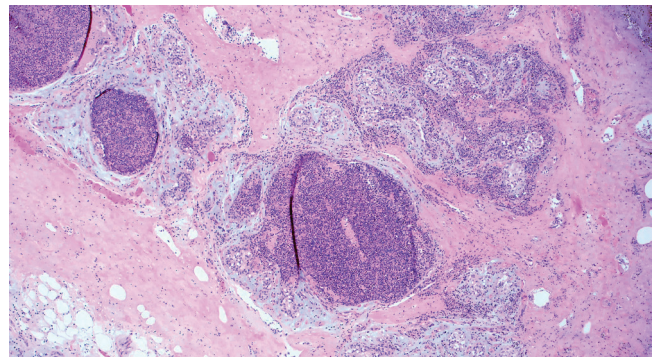


Figure 12: Severe suppurative mastitis in a yearling heifer from which *Trueperella pyogenes* and *Streptococcus dysgalactiae* were isolated. Photo: Maresa Sheehan.

Nervous System

Malignant catarrhal fever

Athlone RVL examined a two-year-old bullock with a history of sore eyes and polydipsia a week previously. The bullock became blind and was showing nervous signs. There was no response to treatment with antibiotics and death followed. On gross post-mortem examination, moderate bilateral enophthalmia and bilateral corneal opacity were noted. There were multifocal ulcers along the length of the oesophageal mucosa, and loose grey intestinal contents, and faeces. There was mild splenic enlargement and pulmonary congestion. Renal lead levels were normal and there were elevated urea levels in a sample of the vitreous humour. There was a positive ovine herpesvirus 2 (OHV-2) PCR result. This is the causative agent for malignant catarrhal fever (MCF). Histopathology of the brain showed a non-suppurative meningoencephalitis with vasculitis, arteritis, and fibrinoid necrosis, and there was also a non-suppurative interstitial nephritis with vasculitis, with fibrinoid arteritis. A diagnosis of malignant catarrhal fever was made. Sheep are carriers of OHV-2 and are generally unaffected clinically. MCF in cattle normally occurs sporadically, generally affects single animals (although outbreaks occur), and is typically fatal. MCF is transmitted only between carriers and clinically susceptible animals; affected animals do not transmit MCF to their comrades. Peripheral corneal opacity is an important clinical sign suggestive of MCF in cattle. High fever, depression, lymphadenopathy, erosions, and mucopurulent exudation affecting the upper respiratory and oral mucosa, hypopyon, and central nervous system (CNS) signs are frequently seen. Haemorrhagic enteritis and cystitis is less frequently seen in cattle than in deer and bison. Skin lesions are common in chronic cases.

Cardiovascular System



Figure 13: 'Nutmeg liver' in a calf, usually a result of hepatic venous congestion. Photo: Denise Murphy.

Atrial and ventricular septal defects

Athlone examined a two-week-old calf that had been disbudded the day before death. He was noticed with a heavy pant later after the disbudding and was given antibiotics but was found dead the next morning. The disbudding wounds were unremarkable. The heart was enlarged and rounded, and there was a very large ventricular septal defect. The liver was enlarged with rounded edges. A diagnosis of a congenital ventricular septal defect was made.

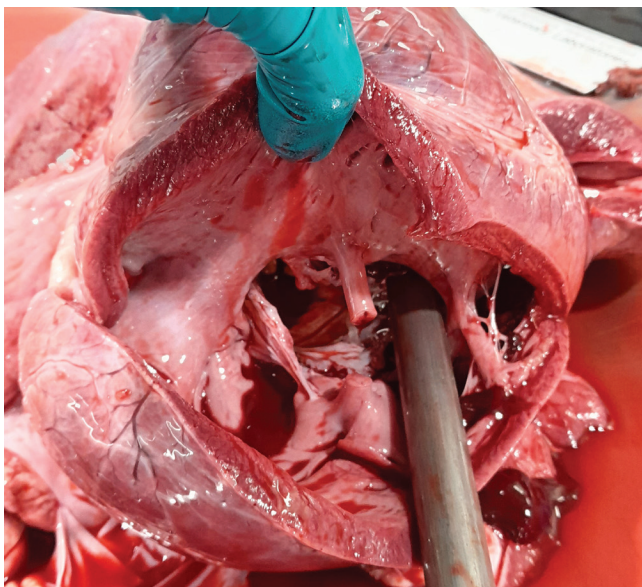


Figure 14: A very large ventricular septal defect. Photo: Denise Murphy.

Athlone RVL examined a two-month-old calf with a history of having been treated for a navel infection at one week of age and seeming to respond well, but was noticed sick, was treated again, didn't respond, and died. At post-mortem examination, the navel was enlarged but mainly consisted of thick fibrous tissue with a very small focus of infection on cross section. The liver was enlarged and had a 'nutmeg' pattern on cross section. The heart was enlarged and rounded, and there was a large atrial septal defect and a smaller ventricular septal defect also. *T. pyogenes* was isolated from the navel. A conclusion of congenital atrial and ventricular septal defects was made.

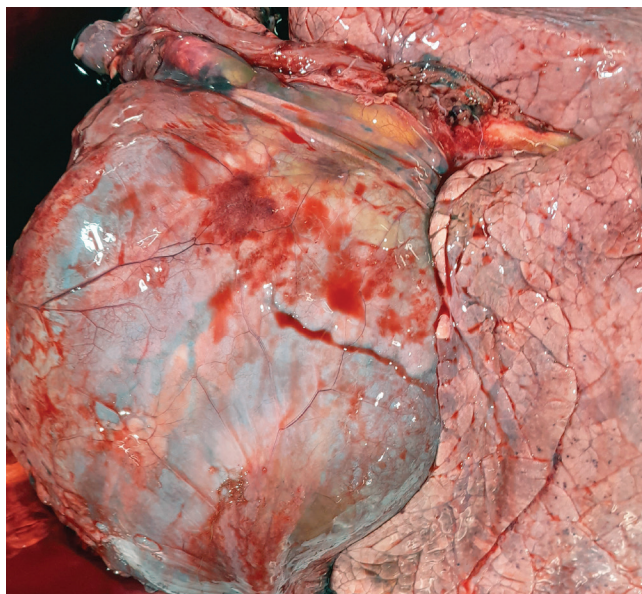


Figure 15: An enlarged and rounded heart from a calf, due to a large atrial septal defect and a smaller ventricular septal defect. Photo: Denise Murphy.

Miscellaneous

Bovine viral diarrhoea

Limerick RVL examined a six-year-old Friesian cross cow and a two-week-old Hereford cross calf, both with histories of non-response to treatment for diarrhoea and pneumonia; several animals in the herd were similarly affected. There were four recent bovine viral diarrhoea (BVD) positive calves from bought-in 'Trojan' dams (a pregnant animal that is not itself persistently infected [PI] with BVD virus, but which is carrying a PI calf). Necropsy revealed multifocal haemorrhages on the mucosa of the small and large intestines with watery brown contents, the caecum was distended, and lungs were heavy and oedematous with multifocal areas of congestion. Laboratory tests detected strong BVD PCR positives for both animals. This case highlights the importance of biosecurity and the risk of buying in pregnant dams carrying infected calves.

Sheep

Bacteraemia/septicaemia and enterotoxaemia were the most common diagnoses at necropsy in sheep in the RVLs during March 2025.

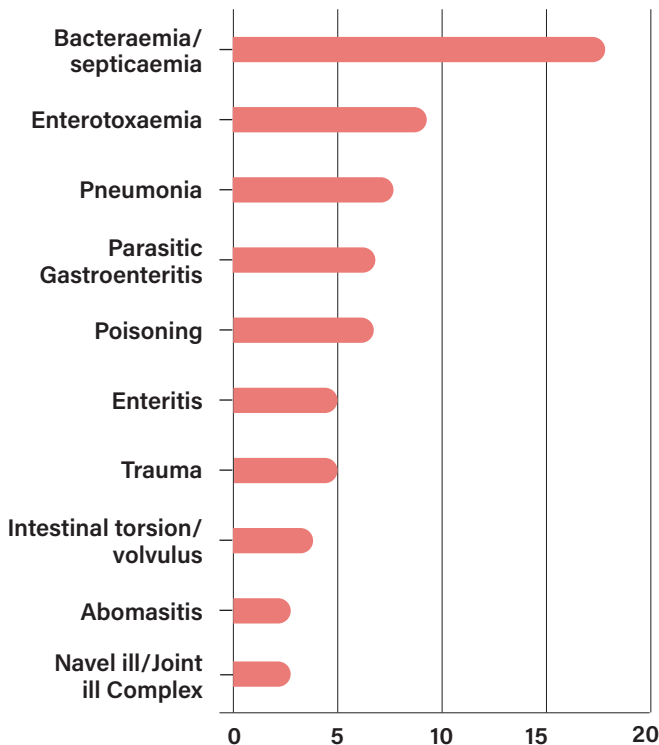


Table 2: The most common diagnoses in sheep submitted for necropsy in March 2025.

Urinary/Reproductive Tract

Metritis

Athlone RVL examined a three-year-old ewe with a history of sudden death. The necropsy disclosed voluminous, gaseous distension of the uterus with necrosis of the uterine wall multifocally, and focally-extensive severe fibrinous peritonitis. One fetid, emphysematous, decomposed lamb was identified within the uterus in addition to a macerated lamb. Molecular and cultural diagnostics did not identify a causative infectious abortifacient. A diagnosis of metritis and peritonitis was applied.



Figure 16: Voluminous gaseous distension of the uterus with necrosis of uterine wall. Photo: Aoife Coleman.

A two-year-old ewe was found dead and submitted to Kilkenny RVL. There were emphysematous dead lambs in the uterus and a resulting bacteraemia was considered the likely cause of death. In addition, there was an abscess in the laryngeal cartilage (laryngeal chondritis). Laryngeal chondritis is a disease of undetermined aetiology, characterised by oedema, ulceration, abscessation, and necrosis of the laryngeal mucosa and cartilage.

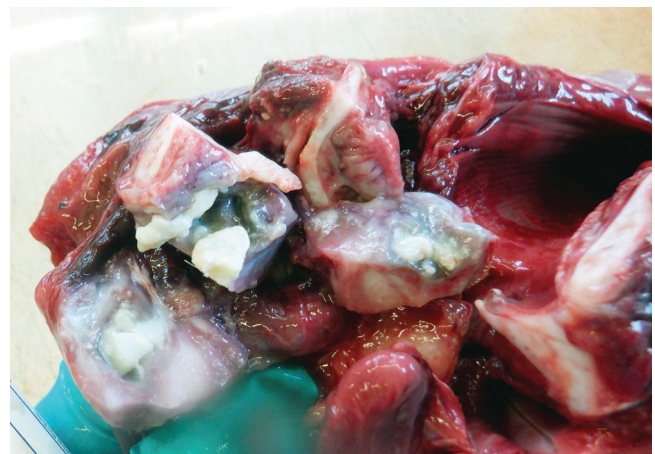


Figure 17: An abscess in the laryngeal cartilage of a ewe (laryngeal chondritis). Photo: Aideen Kennedy.

Enzootic abortion of ewes

Two four-month-gestation lamb foetuses were submitted to Kilkenny RVL. Ten cases of abortion had occurred in the flock. The flock was not vaccinating for any abortifacients. On necropsy, there were no visible lesions on the lambs, the placenta was oedematous, and there was an exudate that was mainly inter-cotyledonary, but multifocally involving cotyledons. PCR results were positive for *Chlamydophila abortus*, the causative organism of enzootic abortion of ewes (EAE). It was advised to isolate aborting ewes for three weeks and to destroy placentae, and disinfect pens. It was

also advised to keep pregnant ewes away from infected pens, and not to use ewes that have aborted to foster replacement ewe lambs. *C. abortus* is a potentially zoonotic agent, and a particular threat to pregnant or immune-compromised people.



Figure 18: Placentitis in a case of enzootic abortion of ewes (EAE). Photo: Aideen Kennedy.

Poisonings

Copper poisoning

Three two-year-old ewes presented to Kilkenny RVL with a history of sudden death shortly after lambing. All three carcasses were jaundiced, the kidneys were dark in colour, and the urine was bloody. Copper levels were detected above the reference range in the livers and kidneys. A diagnosis of copper toxicity was made. Copper toxicity in sheep usually results from the accumulation of excess copper in the liver over a period of a few weeks to more than a year with no clinical signs, followed by a sudden release of hepatic copper stores to cause toxicity (rapid breakdown of red blood cells). In these situations, chronic copper poisoning may result from excessive copper intakes or from low intakes of molybdenum, sulphur, zinc, or calcium, or following liver damage. Stresses, such as weather, environment, poor nutrition, transportation, and handling, can also cause the liver cells to die and release the stored copper into the bloodstream. Affected sheep are lethargic and anaemic. They may grind their teeth incessantly and experience extreme thirst. Membranes are very pale and may appear yellow, as jaundice sets in. Urine is a bloody color. Death usually occurs one to two days after the onset of clinical symptoms.

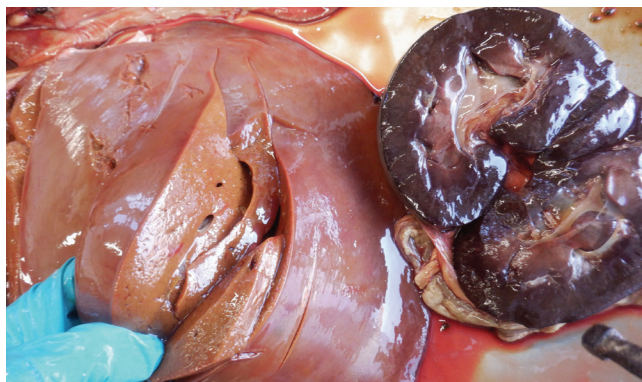


Figure 19: Dark kidneys and jaundiced liver in a case of copper toxicity. Photo: Lisa Buckley.

Poultry

Egg peritonitis

Two backyard hens were submitted to Kilkenny RVL, the owner was concerned about avian influenza. Both hens tested negative for avian influenza. Necropsy disclosed that both hens had egg peritonitis. Egg peritonitis follows the reverse movement of albumin and *Escherichia coli* from the oviduct to the abdomen. Antibiotic treatment of egg peritonitis is usually ineffective. Management of body weight, reproductive development, and drinking water hygiene are the best preventive strategies.



Figure 20: Egg peritonitis in a laying hen. Photo: Aideen Kennedy.