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| Dental caries - dog | Dental caries in the carnassial tooth of a dog. Note the interruption on the external surface of the tooth, where the enamel is covered with tartar. The exposed dentine has become oxidised after contact with environmental air, giving the lesion its dark colour. |
| Dental discoloration - dog | Pink pigmentation of the superior incisors of unknown cause. |
| Epulis - dog | Epulis. Several nodular formations can be seen in the gums and around the teeth. This is especially evident in the upper jaw. These formations appear to arise from periodontal tissue and can be the end result of an inflammatory (more frequently) or neoplastic (rare) process. |
| Epulis - dog | Epulis in a Boxer. Apart from moderate gingival hypertrophy, this dog also exhibits epulis surrounding the superior and inferior pre-molars. |
| Epulis - dog | Gingival epulis in a 6-year-old female Boxer. |
| Gingival hypertrophy - dog | Gingival hypertrophy of unknown cause in a dog. |
| Gingival hypertrophy - dog | Particularly pronounced gingival hypertrophy in a 7-year-old Labrador, diagnosed with epilepsy. The animal had been submitted to long-term therapy with phenobarbital.  (photo provided by Centro de Medicina Veterinária Anjos de Assis, Barreiro, Portugal) |
| Icterus - dog | Yellowish pigmentation of the oral mucosa – icterus (jaundice). |
| Incisor teeth agenesis – dog | Agenesis of four teeth (inferior incisors) and inferior prognathism in a 1-year-old male Boxer. |
| Malignant lymphoma of the tonsil - dog | Irregular hypertrophy of both tonsils, although more evident on the right tonsil. These nodules correspond to lymphoid neoplastic tissue. |
| Oral melanoma - dog | Oral melanoma with renal metastasis. The neoplastic mass has invaded the right upper jaw so that the teeth are inserted in the neoplastic tissue, which caused them to fall out of alignment. A metastasis of this tumour was identified in a kidney. |
| Papilloma – dog | Papilloma on the dorsal surface of the tongue, in a dog. |
| Periodontal disease - dog | Stage 2 periodontal disease. The dental plaque is particularly evident on the right superior canine. Around the inferior canine a periodontal pocket allows for the introduction of a scalpel blade to a depth of 2mm. |
| Periodontal disease - dog | Late stage periodontal disease in a 13-year-old female mixed-breed dog. Tartar covers every tooth, including the incisors and canines. |
| Periodontal disease - dog | Gingival recession in a case of stage 4 periodontal disease. The arrow points to a molar tooth completely covered in tartar. |
| Periodontitis, gingival ulcers – dog | Periodontal disease and necrosis of the oral mucosa. |
| Pseudopolyodontia - dog | Pseudopolyodontia in a dog. The definitive teeth erupted before the complete expulsion of the deciduous teeth. |
| Segmentary tooth enamel hypoplasia - dog | Segmentary tooth enamel hypoplasia. Note the interruptions in the tooth enamel (arrows) due to its deficient synthesis. The yellowish material present in the affected areas corresponds to dentine. |
| Squamous cell carcinoma of the tonsil – dog | Squamous cell carcinoma of the left tonsil. Note the mass on the left tonsil (arrow) and the hypertrophied homolateral cervical lymph node (image on the right). |
| Squamous cell carcinoma of the tonsil – dog | Metastatic squamous cell carcinoma of the tonsil in a 10-year-old Belgian Shepherd. This large cervical mass extended through the cervical soft tissues to the pharynx and to the area where the left tonsil, excised 4 months before, was previously located. On the right, one can see the macroscopic appearance of the mass’s cut surface, which exhibits mucinous-like areas. |
| Ulcerative stomatitis – dog | Ulcerative stomatitis in a dog presenting with uremic syndrome. Ulcers are visible on the lateral borders of the tongue and on the mucosal surface of the lips. |
| Cleft palate - cat | Extensive palate fissure in a 6-year-old male cat that had been run over by a car. |
| Eosinophilic complex – cat | Indolent ulcer extending over the upper lip of a cat diagnosed with feline eosinophilic complex (image on the left). Granulomas were present on the palate and tongue (image on the right). |
| Eosinophilic stomatitis - cat | Eosinophilic stomatitis of the lip corners in a cat. The congestion and oedema combine and result in an extremely painful condition. |
| Lip ulcer - cat | Bilateral lip ulcers in a cat. Orange-coloured plaques, corresponding to inflammatory lesions with intense eosinophilic infiltration, have formed on the lips. |
| Necrotic stomatitis – cat | Necrotic stomatitis in a 2-year-old cat. The whole palate, as well as the pharynx and oesophagus, exhibit mucosal lesions covered in a fibrinous material. Microbiological analysis was positive for Corynebacterium sp. |
| Squamous cell carcinoma – cat | Squamous cell carcinoma of the upper lip with soft tissue damage. |
| Abnormal dental erosion - horse | Abnormal dental erosion in a horse. Note how the erosion is particularly accentuated on the upper jaw. |
| Porphyria – horse | Pink pigmentation of the bone tissue, including the dental cementum and dentine, in a case of porphyria. |
| Actinobacillosis - microscopy image - bovine | This is the typical microscopic appearance of an actinobacillosis granuloma. It consists in an eosinophilic central area, called sulphur granule, (formed by the pathogen and by immune complexes synthesized as a response to the infection) enclosed in a neutrophilic cellular atmosphere. Peripherally, several mononuclear cellular elements can be found, namely macrophages, plasmocytes and lymphocytes (H&E, 100x). This inflammatory response causes a fibroblastic reaction that progressively isolates the granuloma from the surrounding tissue. On the right, radiated structures arranged in palisade, called clubs, form the periphery of the sulphur granule (H&E, 400X). |
| Actinomycosis - bovine | Actinomycosis of the left mandible. Note the difference in the thickness of the hemimandibles. On the right, a light-yellow material can be seen draining from a cut on a recent lesion. |
| Necrotic glossitis/palatitis - calf | Necrotic stomatitis in a calf with obvious lesions on the tongue. These yellow-red lesions are covered in necrotic material. |
| Necrotic stomatitis – calf | Necrotic stomatitis in a calf. Note the necrotic lesions, considerably deep at this point and covered in a yellow-grey necrotic material. |
| Sialorrhoea – bovine | Sialorrhoea caused by stomatitis. |
| Blue tongue – sheep | Sheep with lesions caused by infection with the blue tongue virus. The animal’s tongue is cyanotic and the lips exhibit oedema that is particularly severe on the lower lip.  (photo by Dr. Rita Mendes and Dr. Iolanda Gomes) |
| Contagious ecthyma - sheep | Above, gross lesions corresponding to contagious echtyma on the lips of a sheep.  Below, on the left, a microscopy image of the lesions can be seen, showing the irregularity of the epithelial surface, which exhibits ballooning degeneration as well as invasion of the mucosal lamina propria by irregular columns of epithelium (H&E, 40x). On the right, note the epithelial hyperplasia forming columns that plunge deep into the oral mucosal lamina propria (H&E, 100x). |
| Necrotic/ulcerative stomatitis – sheep | Necrotic/ulcerative stomatitis. A deep ulcer is present in the oral surface of the cheek. |
| Necrotic/ulcerative stomatitis – sheep | Necrotic/ulcerative stomatitis. There is considerable loss of material on the gum and oral surface of the lip. |
| Excessive dental growth – rabbit | Excessive dental growth in a rabbit due to deficient wear. The nostrils are covered in desiccated mucopurulent nasal discharge. |
| Excessive dental growth – rabbit | Excessive dental growth in an 8-year-old female dwarf rabbit, diagnosed with uterine adenocarcinoma. |
| Excessive growth of the incisor and molar teeth – rabbit | Excessive dental growth in a rabbit due to poor dental arch alignment, particularly evident on the superior incisors and molars. |
| Persistent fourth right aortic arch - dog | Persistent fourth right aortic arch, causing constriction of the oesophagus. The organ is dilated cranially to the vascular ring formed by the base of the heart, aorta, the pulmonary artery and the ligamentum arteriosum. |
| Spirocerca lupi - dog | Spirocerca lupi in the oesophagus of a dog. There are mucosal orifices connecting the surface to the parasitic nodules. These are surrounded by an inflammatory reaction. |
| Spirocerca lupi - dog | Spirocerca lupi in the oesophagus of a dog (organ fixed in formalin). The oesophageal wall cranial to the stomach is thickened. Removing the muscle layer of the organ reveals the pink-coloured nematodes. |
| Gangrenous coryza - bovine | Ulcers in the oesophageal mucosa in a case of gangrenous coryza.  (Image generously donated by Serviço de Patologia do Laboratório Nacional de Investigação Veterinária, Portugal) |
| Pseudomembranous ingluvitis - chick | Pseudomembranous ingluvitis caused by infection with Aspergillus fumigatus. The crop is coated with a fibrinous exudate weakly adherent to the mucosa. |
| Abomasal ulcer – bovine | Abomasal ulcer in a cow. The mucosa exhibits severe congestion. |
| Abomasal ulcers – bovine | Abomasal ulcers (arrow). |
| Abomasitis- calf | Abomasitis in a calf. |
| Congestive ruminitis -bovine | Congestive ruminitis in a calf. The submucosa is severely congested while the mucosa is easily detachable. |
| Necrobacillosis - bovine | Fibrous scars in the rumen. These star-shaped scars are the result of outbreaks of necrobacillosis. |
| Normal ruminal mucosa - sheep | This is the typical appearance of the ruminal mucosa, easily detached even in fresh cadavers. The mucosa is not as easily detached if ruminitis has occurred. |
| Oedema of the abomasum – calf | Oedema of the abomasum in a calf that died of infectious enteritis. Apart from the mucosal congestion the organ’s surface exhibits excessive reflectiveness of ambient light caused by mucosal oedema (image on the right).  (photos by Nelson Benevides) |
| Paramphistomum larvae in the rumen - bovine | Paramphistomum larvae in the ruminal lumen of a cow. The reddish pigmentation of these parasites (magnified image on the right) indicates that these parasites are haematophagous, though well-tolerated by their host. |
| Ruminal papillomas – bovine | Papillomas in the rumen, arising as nodular formations similar to nacreous pearls inserted in the mucosa. |
| Chronic abomasitis - sheep | Chronic abomasitis with mucosal atrophy in a sheep. The arrow points to an area of hyperplastic mucosa forming thick pleats. |
| Congestive ruminitis - sheep | Congestive ruminitis in a sheep. The areas where the mucosa has been detached show severe congestion of the underlying submucosa. This type of lesion is common in ruminal acidosis with uncomplicated gaseous or foamy distension. |
| Haemorrhagic abomasitis - sheep | Haemorrhagic abomasitis. |
| Acute catarrhal gastritis - dog | Acute catarrhal gastritis in a puppy infected with canine parvovirus. Apart from gastric congestion, there is abundant leakage of mucous-rich fluid. |
| Acute gastritis - dog | Acute gastritis in a dog. The mucosa exhibits exceptional reflectiveness due to the abnormal amount of mucous that can be seen flowing from the gastric lumen. |
| Chronic atrophic gastritis - dog | Chronic atrophic gastritis. The gastric wall on the left side is thinner than the remainder of the gastric wall. |
| Erosive gastritis – dog | Erosive gastritis in a 9-year-old Siberian Husky treated with anti-inflammatory drugs. The animal suffered from pulmonary carcinoma. |
| Gastric rupture – dog | Gastric rupture due to a perforated ulcer caused by a foreign body, in a dog. The rupture resulted in haemoperitoneum. |
| Gastric ulcers - dog | Pyloric ulcers in a dog. Note the invaginating lips of the lesions. |
| Gastric volvulus – dog | Gastric volvulus in a dog. There is extreme dilation of the stomach as well as dislocation of the spleen to the right (arrow). Additionally, the stomach is compressing the liver (F), which is dislocated to the left. The image on the right corresponds to a craniocaudal view of the thoracic and abdominal organs. The stomach can be seen, covered with the omentum. The image below shows the stomach which has been lifted to expose the point of torsion (arrow). |
| Gastric volvulus – dog | Typical appearance of a gastric volvulus in a dog. The stomach is severely distended caused by gas retention. The spleen, on the right side of the image, is intensely congested. |
| Haemorrhagic gastritis - dog | Haemorrhagic gastritis. |
| Haemorrhagic gastritis - dog | Haemorrhagic diathesis in a 12-year-old bitch diagnosed with leishmaniasis. Small haemorrhagic foci and petechiae can be seen in the gastric mucosa. |
| Haemorrhagic gastritis - dog | Haemorrhagic gastritis in a 6-year-old Golden Retriever. Note the superficial irregularity of the gastric mucosa. |
| Hypertrophic gastritis - dog | Hypertrophic gastritis in an 8-year-old Boxer. The pyloric area of the gastric mucosa exhibits superficial irregularity (arrow) caused by regional glandular hyperplasia. The animal also presented thickening of the intestinal wall due to lymphoplasmacytic enteritis (image on the right). |
| Malignant lymphoma – dog | Malignant lymphoma in a dog. The stomach exhibits multiple nodules that correspond to neoplastic lymphoid tissue. The arrow on the left-side image indicates a point of gastric rupture. The image on the right shows the same rupture point, on the left border. |
| Mast cell tumour of the gastric wall - dog | Mast cell tumour of the gastric wall in a 5-year-old Cocker Spaniel. The image on the right shows the cut surface of this infiltrative mass. One other smaller neoplastic nodule has been identified in the colonic wall. |
| Gastric rupture – cat | Gastric rupture in an 8-year-old cat. The stylet indicates the point of perforation. On the right, the stomach is opened, showing its blood clot-rich contents. A part of the intestine has also been cut open in order to show its blackened contents. Below, the clots have been removed exposing two separate points of perforation in the gastric wall. |
| Gastric rupture - cat | Gastric rupture in a cat. The tip of the scissors has been inserted in the point of rupture of the gastric wall. |
| Gasterophilus intestinalis larvae- horse | Gasterophilus intestinalis larvae in the stomach of a horse. |
| Gastric ulcers - horse | Cardiac ulcers in the stomach of a 20-year-old horse with gastric and oesophageal impaction. On the right, one can see the mucosal necrosis due to the compression exerted over several days by the impacted oesophageal contents (feed). |
| Diaphragmatic hernia -pig | Diaphragmatic hernia. A portion of the stomach is lodged in the thoracic cavity. |
| Gastric rupture – pig | Gastric rupture with dispersion of stomach contents all over the abdominal cavity. |
| Gastric ulcer - pig | Cardiac ulcer with invaginating hyperaemic lips in the stomach of a pig. The fundus is also congested. |
| Gastric ulcer - pig | Severe cardiac ulcer with invaginating lips. |
| Gastric ulcers - pig | Cardiac gastric ulcers. |
| Normal gastric pleating - pig | Normal pleating of the gastric mucosa of the diverticulum in the cardia of a pig. |
| Foreign body – chicken | Foreign body (nail) in the gizzard. |
| Proventricular haemorrhage - chicken | Proventricular haemorrhage in a case of Newcastle disease. |
| Proventriculitis in Marek’s disease – chicken | Marek’s disease in a laying hen. The proventricular mucosa is congested and exhibits glandular cystic dilation while the proventricular wall is thickened. There is concurrent splenic hypertrophy. On the right, a microscopy image shows lymphoid infiltration of the proventricular wall, typically found in Marek’s disease. |
| Congestion - kangaroo (Macropus rufogriseus) | Moderate gastric congestion in a kangaroo. |
| Erosive gastritis – northern fur seal (Callorhinus ursinus) | Erosive gastritis in a northern fur seal. Note the reddish foci that correspond to points of erosion of the gastric mucosa. |
| Erosive gastritis - okapi (Okapia johnstoni) | Erosive gastritis in an okapi. The animal had ingested poisonous plants which resulted in its death. |
| Mycotic gastritis - hippopotamus (Hippopotamus amphibius) | Mycotic gastritis in a hippopotamus. |
| Ascaridiasis - dog | Ascaridiasis. A large number of parasites, arranged in bundles, lead to difficulties in intestinal transit. |
| Chronic enteritis - dog | Chronic enteritis in a 14-year-old dog, with accentuated shedding of villous epithelium. The necrotic cells remain attached to the mucosa creating what appear to be slender white projections. Below, microscopy images show deformed and dilated intestinal glands, retaining mucous secretion. The lamina propria exhibits infiltration by mononuclear inflammatory cells. |
| Congenital diaphragmatic hernia - dog | Congenital diaphragmatic hernia in an 8-month-old Rottweiler. Most of the intestine and stomach are lodged in the thoracic cavity as well as the spleen and part of the liver. On the right, a clamp is holding the fibrous and regular border of the diaphragmatic defect. |
| Diaphragmatic hernia - dog | Diaphragmatic hernia with almost complete migration of the intestine into the thoracic cavity. Additionally, there is gastric dilation. |
| Duodenal ulcers - dog | Duodenal ulcers on the pylorum-duodenum transition. One of the 2 juxtaposed ulcers has ruptured, resulting in fatal peritonitis. The bottom of the ulcers exhibits congestion as well as a few fibrinous foci. |
| Fibrinous enteritis - dog | Fibrinous enteritis in a dog. The intestinal mucosa is lined with fibrinous material. |
| Haemorrhagic enteritis - dog | Haemorrhagic enteritis in a dog. The swollen dark-red appearance of the intestine is due to intestinal wall haemorrhaging in addition to the organ’s haemorrhagic contents. |
| Haemorrhagic ileitis - dog | Haemorrhagic ileitis The intestinal wall is thin and its vasculature extremely evident. |
| Intestinal compression - dog | Intestinal compression caused by an intra-abdominal neoplastic mass (arrow). There is intestinal dilation cranially to the area of compression. |
| Intestinal obstruction - dog | Intestinal obstruction in a 6-year-old mixed-breed dog. The intestine is distended about 12 cm cranial to the ileocecal transition. The distension was caused by two pieces of garden hose (image on the right) that obstructed the intestinal lumen and caused its contents to accumulate cranially. Intestinal contents were found in the oesophagus. |
| Intestinal obstruction - dog | Intestinal obstruction caused by a peach pit (arrow) in a puppy. There is intestinal haemorrhage cranially to the point where the foreign body was fixed. |
| Intestinal volvulus - dog | Intestinal volvulus in a 4-year-old dog. Upon opening of the peritoneal cavity, the intestinal loops appeared dilated and haemorrhagic. The arrow (image on the right) indicates the point of torsion of the intestine around its mesenteric axis. The walls as well as the content of the intestine were intensely haemorrhagic. |
| Lymphoid follicular hyperplasia in the colon - dog | Lymphoid follicular hyperplasia in the colon of a dog. This can correspond to an individual physiologic characteristic of no consequence to the organ’s primary function. |
| Lymphoplasmacytic enteritis – dog | Intestinal wall thickening in an 8-year-old Boxer suffering from lymphoplasmacytic enteritis. The animal also exhibited focal hypertrophic gastritis (arrow). |
| Metastatic osteosarcoma - dog | Metastatic osteosarcoma with masses on the pericardium, diaphragm and intestinal serosa (arrow). |
| Nodular parasitic enteritis - dog | Nodular parasitic enteritis. Parasite larvae penetrate the intestinal wall to attempt survival through encystment, in a hibernation process called hypobiosis. Once in the intestinal wall the larvae trigger a granulomatous inflammatory reaction that may or may not succeed in destroying them. |
| Perforated duodenal ulcer - dog | Perforated duodenal ulcer in a dog diagnosed with a mast cell tumour. The lesion is triangular in shape. On the right, the wall is open showing the lips of the ulcer (close to the upper right corner of the label). |
| Intestinal haemorrhage - cat | Intestinal haemorrhage in a 15-year-old cat diagnosed with hepatic lipidosis complicated by diffuse hepatic necrosis. The hepatic failure resulted in low serum coagulation factors. |
| Intestinal lymphoma - cat | Intestinal lymphoma in a cat. The intestinal wall is thickened in two separate areas due to neoplastic lymphoid cell infiltration. |
| Rectal prolapse - cat | Rectal prolapse in a 3-month-old male Domestic European cat. |
| Rectal prolapse - cat | Rectal prolapse in a cat that died of severe diarrhoea of parasitic aetiology. The rectal mucosa is oedematous and congested. |
| Colonic diverticula - horse | Colonic diverticula in a 10-month-old horse. |
| Fibrous stenosis - equine | Intestinal fibrous stenosis in an Arab horse. The lesion is a result of a prior surgery performed to extract an enterolith. The resulting fibrous scar lead to constriction of the intestinal wall in addition to haemorrhagic necrosis of the cranial intestinal sectors, violent colic and, ultimately, death. |
| Hemomelasma ilei - equine | Hemomelasma ilei: subserosal haemorrhagic lesions in the ileum, possibly caused by the migration of strongylide larvae. |
| Intestinal stenosis - horse | Abrupt transition between a haemorrhagic and a congested portion of intestine corresponding to a point of intestinal stenosis (image on the right) The stenosis may have been due to intestinal incarceration, since there was no evidence of any other possible cause. |
| Parasitic enteritis - equine | Parasitic enteritis lesions caused by the attachment of *Strongylus* larvae to the mucosa, forming translucent nodules sometimes surrounded by a congestive halo. |
| Acute congestive enteritis - calf | Acute congestive enteritis in a calf. The intestinal wall is open showing its thin congested mucosa. |
| Acute enteritis – calf | Acute enteritis in a calf. Note the mucosal congestion and yellowish colour of the intestinal contents, in which fibrin fragments can be identified. On the right, the intestinal contents have been removed and the congested mucosa is readily seen.  (photos by Nelson Benevides) |
| Fibrinous enteritis - calf | Fibrinous enteritis in a 2-week-old calf. A fibrinous exudate can be seen in the open segments of intestine moulding the intestinal lumen. The mesenteric lymph nodes (L) are hypertrophied as a result of reactive hyperplasia. |
| Paratuberculosis - bovine | Hypertrophied mesenteric lymph nodes in a case of paratuberculosis. |
| Acute enteritis - piglet | Acute enteritis in a piglet. Congested blood vessels are readily seen in the intestinal wall, staining dark-pink. This type of enteritis is frequently associated to infection with Escherichia coli. |
| Atresia ani - pig | *Atresia ani*. The anus has failed to form during foetal development.  (Image generously donated by Serviço de Patologia do Laboratório Nacional de Investigação Veterinária, Portugal) |
| Atresia ani - pig | Atresia ani. The anal opening has failed to form in this female pig. |
| Atresia ani - pig | Atresia ani. The animal’s impossibility to defecate has resulted in chronic retention of faecal matter with extreme dilation of both colon and caecum. The pressure exerted by the faecal matter retained in the rectum has lead to fistulisation to the vulva (image on the right) creating an opening through which faeces could be excreted, allowing the animal to survive. |
| Autolysis and putrefaction - pig | Greenish pigmentation of the intestine attributable to autolysis and putrefaction.  (Image generously donated by Serviço de Patologia do Laboratório Nacional de Investigação Veterinária, Portugal) |
| Acute catarrhal enteritis - pig | Acute catarrhal enteritis. A slightly congested intestine retains a yellowish mucoid fluid. |
| Acute congestive enteritis - pig | Acute congestive enteritis. Note the hypertrophied mesenteric lymph nodes (arrows).  (Image generously donated by Serviço de Patologia do Laboratório Nacional de Investigação Veterinária, Portugal) |
| Diphteroid/necrotic enteritis - pig | Diphteroid/necrotic enteritis in a pig. Strongly adhered yellowish plaques corresponding to focal fibrinous/necrotic inflammation can be identified on the mucosa. The mucosa has been destroyed and the exudate is strongly attached to the submucosa. On the right, a microscopy image of the lesions can be seen. Note how the necrotic portion of the mucosa (left side of the image) has become detached due to differences in resistance to traction. The intestinal glands (right side of the image) where the mucosa has remained attached do not show any necrosis. There is severe submucosal infiltration. |
| Haemorrhagic enteritis - pig | Haemorrhagic enteritis caused by infection with *Clostridium* spp.  (Image generously donated by Serviço de Patologia do Laboratório Nacional de Investigação Veterinária, Portugal) |
| Inguinal hernia - pig | Strangulated inguinal hernia. |
| Oedema disease - pig | Oedema disease. Oedema of the mesenterium causing separation of the colonic spirals and lymph node hypertrophy.  (Image generously donated by Serviço de Patologia do Laboratório Nacional de Investigação Veterinária, Portugal) |
| Trichobezoar - pig | Trichobezoar removed from the intestine of an adult pig. |
| Umbilical hernia - pig | Section of intestine incarcerated in an umbilical strangulated hernia that caused compression of a number of intestinal loops. |
| Intestinal coccidiosis - rabbit | Intestinal coccidiosis. The caecum and colon are dilated and haemorrhagic. |
| Mucoid enteritis - rabbit | Mucoid enteritis in a rabbit. The caecum is distended and the colonic content consists in a perfectly clear mucous plug. |
| Mucoid enteritis - rabbit | Mucoid enteritis in a rabbit. A mucous plug fills and moulds the colonic lumen. The caecum is distended. |
| Yersiniosis - rabbit | Rabbit infected with Yersinia pseudotuberculosis. Note the innumerous whitish necrotic foci that can be observed on the intestine and spleen. |
| Caecal coccidiosis - chicken | Infection of the caecum with *Eimeria tenella*. The lesions are those of haemorrhagic typhlitis.  (Image generously donated by Serviço de Patologia do Laboratório Nacional de Investigação Veterinária, Portugal) |
| Diphteroid enteritis - duck | Diphteroid enteritis in a duck. Note the fibrinous plaques strongly adhered to the mucosa. |
| Haemorrhagic viral enteritis - turkey | Haemorrhagic viral enteritis in a turkey. |
| Intestinal obstruction - chicken | Intestinal obstruction caused by parasitic plugs. |
| Intestinal stenosis – chicken | Idiopathic stenosis (arrow) causing dilation of the cranial intestinal segments. |
| Chronic colitis - black-tufted marmoset (*Callithrix penicillata*) | Severe bacterial colitis in a black-tufted marmoset. The colon is distended with a yellowish thick content. *Klebsiella oxytoca* was isolated from intestinal contents.  (photo by Diogo Guerra) |
| Chronic colitis - Geoffroy's marmoset (*Callithrix geoffroyi*) | Chronic colitis in a Geoffroy's marmoset. The colon is dilated and retains fibrinous material. Microbiological analysis was positive for Escherichia coli. Histological analysis revealed severe mucosal atrophy as well as extremely high numbers of bacteria in the intestinal lumen (not visible in the image). |
| Fecaloma – northern fur seal (Callorhinus ursinus) | Dilated segment of the rectum caused by the presence of fecalomas. The image on the right shows the intestine, cut open to reveal the fecalomas that lead to intestinal obstruction. |
| Mesenteric torsion – red squirrel (Sciurus vulgaris) | Mesenteric torsion in a squirrel. Note the spiral-like structure on the left side of the abdominal cavity (to the right on the image) that appears to end in a nodular mass. Unrolling this structure revealed it to be a portion of mesenterium twisted around granulomatous lesions of undetermined aetiology (image on the right). No specific pathogenic bacteria or fungi were identified and special stains (PAS and Ziehl-Neelsen) for these microorganisms were both negative.  (photos by Diogo Guerra) |

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| [Squamous cell carcinoma - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_091.htm) | Squamous cell carcinoma in the nasal cavity of a Poodle. A sagital cut of the nasal region (right half bent to display the cut surface) revealed how far the tumour had already infiltrated the surrounding tissue, destroying the nasal bone and invading the hard palate. Only a single tooth, completely covered with tartar, remained in its place. |
| Nasal cavity neoplasia [- cat](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_060.htm) | Nasal cavity neoplasia. Note the destruction of the nasal septum and of the left nasal conchae by a compact dark-red mass. Histology revealed the mass to be a chondroblastic osteosarcoma. |
| Pseudomembranous rhinitis [– cow](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_043.htm) | Pseudomembranous rhinitis in a case of malignant catarrhal fever. Note the abundant nasal discharge and the marked conjunctival inflammation. |
| [Oestrus ovis – sheep](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_102.htm) | *Oestrus ovis* in the nasal cavity of an adult sheep. The right-side image has been taken at a shorter distance, allowing the two spiracles that characterize the species to be seen. |
| Atrophic rhinitis [- pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_040.htm) | Deviation of the nasal septum due to atrophic rhinitis. Note how the anterior extremity of the lower jaw is not aligned with the medial axis of the nosepad. The deviation of the nasal septum is particularly evident on the left-side head. |
| Atrophic rhinitis [- pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_040.htm) | Destruction of the conchae and deviation of the nasal septum in a case of atrophic rhinitis. Note how the conchae have completely disappeared from the left nasal cavity. |
| Atrophic rhinitis [- pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_040.htm) | Destruction of the right nasal conchae and marked deviation of the nasal septum to the left in a case of atrophic rhinitis. |
| Haemorrhagic viral disease [- rabbit](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_014.htm) | Haemorrhagic viral disease. The nasal region is conspurcated with blood, indicating epistaxis. |
| Round cell tumour [- dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_044.htm) | Strongly invasive round cell tumour, with destruction of the hard palate. The image on the right shows the transversal cut of the nasal bones. Note how the invasion by this white-coloured neoplasm of medium consistency has destroyed the normal tissue. The surrounding tissues are haemorrhagic. |
| Infectious sinusitis [- turkey](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_046.htm) | Oedema of the nasal sinuses as a result of infection with Mycoplasma gallisepticum. Note how the sinuses are enlarged due to the accumulation of mucopurulent exsudate. |
| Acute laryngitis [– pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_094.htm) | Acute laryngitis in a pig. The mucosa exhibits diffuse and intense pink coloration and excessive reflectiveness. |
| Necrotizing ulcerative laryngitis [– pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_094.htm) | Necrotizing ulcerative laryngitis. Note the necrotic material and fibrin forming yellowish plaques that are strongly adhered to the laryngeal mucosa. Similar lesions can be seen immediately behind the tongue. |
| [Aspiration of ingested material - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_053.htm) | Aspiration of ingested material. The contents of the stomach are present in the tracheal lumen (extremity of the right hand tweezers) in a puppy with excessive gastric repletion. |
| Aspiration of vomit - dog | Aspiration of vomit in a 7-year-old dog. The tracheal lumen shows vestiges of food matter, identical to gastric content, equally present in the bifurcation of the main bronchi. |
| [Tracheal](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_052.htm) collapse - dog | Tracheal collapse. The membranous portion of the trachea is exceptionally wide, resulting in collapse. The glottis, held by the tweezers, exhibits deformation of the epiglottis with abnormal thickening and rounded edges. |
| Tracheal rupture and pericardial emphysema [- dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_067.htm) | Tracheal rupture in a dog that had been attacked by another dog. The rupture resulted in the penetration of air in the subcutaneous tissue of the cervical region and in the mediastinum, as well as in the pericardium. |
| Traumatic tracheal rupture - cat | Tracheal rupture in a 2-year-old cat, as a result of a fall from a high altitude. The point of rupture is located 2 cm above the main bronchial bifurcation. There is also pulmonary oedema, attending to the excessive reflectiveness and smooth surface of the lungs. |
| Haemorrhagic tracheitis - cow | Haemorrhagic tracheitis. Note how the tracheal mucosa exhibits an intense red colouration and scarce greyish fibrin plaques. The visible part of the lung is emphysematous, on the left, and shows lesions consistent with bronchopneumonia, to the right. |
| Pseudomembranous tracheitis - cow | Pseudomembranous tracheitis. The tracheal mucosa is completely covered with abundant fibrinous exsudate, slightly adhered to the mucosa. |
| Haemorrhagic tracheitis - chicken | Haemorrhagic tracheitis. Note the intense red colouration of the tracheal mucosa and a few discrete yellowish fibrin flakes. |
| Haemorrhagic tracheitis - rabbit | Haemorrhagic tracheitis in a case of haemorrhagic viral disease. Note the intense red colouration of the tracheal mucosa. |
| Acquired air cyst and purulent bronchitis - dog | Air cyst on the anterior left lobe of the lung in a dog with purulent bronchopneumonia. The trachea, open in the image on the right, exhibits purulent content. The now open air cyst is also visible in the same image. |
| [Air cysts - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_039.htm) | Pulmonary air cysts. These malformations correspond to air bubbles that develop in the lung, apparently due to deficient segmentation of the bronchi. |
| [Anthracosis – microscopy image - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_065.htm) | Anthracosis can be found in the lungs of animals (dogs) that dwell in urban environments or industrial areas, without clinical manifestation. The deposition of anthracitic pigment in the lung is a result of continuous and frequent inhalation of charcoal dust (H&E, 40x). |
| [Atelectasis - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_086.htm) | Atelectasis due to lung collapse caused by the presence of a large mediastinal tumour in a dog (head to the right). The lung can be seen, dark-coloured and intensely reflective, just above the tumour. The splenic capsule exhibits an area of fibrous thickening, possibly unrelated to the neoplasm. |
| Bronchial carcinom[a - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_011.htm) | Bronchial carcinoma in a dog. |
| [Bronchopneumonia - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_066.htm) | Lung, heart and thymus of a puppy that died with canine distemper. Note the marked atrophy of the thymus (to the left), and the transparency of the interstitial tissue in this organ. The lymphoid tissue is reduced to the red-coloured areas. The lung exhibits bronchopneumonia in disseminated pale-coloured foci. |
| Endogenous lipoid pneumonia – dog | Endogenous lipoid pneumonia in a dog. The lung is moderately atrophied, exhibiting several bright filiform lesions on the surface. The image on the right corresponds to the histology image of one of these subpleural foci, composed of foamy macrophages and cholesterol crystals. The alveoli show moderate atelectasis (H&E, 40x). |
| Metastatic cholangiocarcinoma [- dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_085.htm) | Pulmonary metastases of cholangiocarcinoma. The arrow points to an area of ossification of a tracheal ring, not very visible in the photo. |
| Metastatic mammary carcinoma [- bitch](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_026.htm) | Pulmonary and pleural metastases of mammary carcinoma. The lung is completely involved by the neoplastic lesions. The reddish prominent nodule that can be seen in the centre of the right-side image corresponds to a pleural metastasis. The pleural metastases can arise from continuity with the pulmonary lesions. |
| Papillary alveolar carcinoma [- dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_002.htm) | Large pulmonary tumour (T), that histopathology revealed to be a papillary alveolar carcinoma. On the right, the same mass can be seen after sagital cut. |
| Pulmonary congestion [– microscopy image - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_061.htm) | Congestion of the alveolar capillaries is a common alteration in animals with cardiac failure (passive congestion) or with inflammatory conditions of the lung (active congestion). Note the dilation and repletion of the alveolar capillaries with erythrocytes, in smaller amplification on the left (H&E, 100x) and in greater amplification on the right (H&E, 400x). |
| Septal sclerosis - dog | Septal sclerosis in a dog’s lung. Note the discrete fibrous thickening of the alveolar walls, in some cases associated with atelectasis (H&E, 100x). |
| Arteriole hypertrophy [– cat](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_093.htm) | Arteriole hypertrophy in a cat’s lung. It is a very frequent modification of unknown cause that does not seem to involve any kind of functional disruption (left-side image, H&E, 40x; right-side image, H&E, 100x). |
| [Atelectasis – cat](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_095.htm) | Severe atelectasis due to lung collapse in a cat with pleuritis. Note the presence of fibrinous exsudate on the parietal pleura and in a particularly thickened pericardium. Approximately 100 ml of serofibrinous exsudate have been removed from the thoracic cavity. |
| Focal emphysema [- cat](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_077.htm) | Focal emphysema, possibly vicarious, on the internal border of the main lobe of the lung in a cat, resulting from densification of the remainder of the organ. |
| Pulmonary adenocarcinoma – cat | Pulmonary adenocarcinoma in a cat. Note the heterogeneous, confluent, nodular lesions which cut surface releases sanguinolent mucous. |
| Pulmonary oedema [- cat](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_015.htm) | The surface of the lung is very smooth and excessively reflective indicating the presence of pulmonary oedema. In the histology images displayed below, the majority of the alveoli is filled with a pink material, that represents the oedema liquid (left-side image, H&E, 100x; right-side image, H&E, 400x). As with congestion, pulmonary oedema may be a consequence of haemodynamic disturbances – caused by cardiac failure, for instance – or of inflammatory processes of the lung. |
| Purulent bronchopneumonia [- cat](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_009.htm) | Fine white punctuations on all lobes, corresponding to purulent pneumonia in disseminated foci. |
| Obliterating bronchiolitis - horse | Obliterating bronchiolitis in a horse. Note the exceptional distension of the lung caused by alveolar emphysema, particularly marked on the edges and on the cranial extremity of the lung. Below, to the right, the mucosa of the main bronchi was covered with a very thick and adherent mucopurulent material. |
| Chronic lardaceous pneumonia [horse](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_034.htm) | Chronic lardaceous pneumonia. Note how the lung has lost its spongeous appearance, appearing as a solid organ. Consistency is very firm due to the fibrous organization of the exsudates. The designation of this process is justified by the lardaceous appearance of the lesions. |
| [Fibroadenocarcinoma - horse](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_022.htm) | Large fibroadenocarcinoma in the lung of a horse. |
| Rhodococcus [pneumonia - foal](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_079.htm) | Suppurative *Rhodococcus* *equi* pneumonia in a foal. Note the presence of a large number of abscesses disseminated throughout the lung, particularly in the cranial regions (cranial and intermediate lobes and cephalic portion of the main lobes). Cutting the lung revealed the purulent material contained in the abscesses (right-side image). |
| Alveolar [emphysema – cow](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_019.htm) | Alveolar emphysema. Note the extraordinary distension of the lung due to the retention of air in the alveoli. The lung is larger and paler than usual, with increased crepitation. |
| Gangrenous [pneumonia – cow](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_054.htm) | Gangrenous pneumonia secondary to aspiration of ingested material. Note the brown colouration of the affected areas, contrasting with intense congestion of the remaining parenchyma. |
| Interstitial emphysema - cow | Interstitial emphysema. Note the presence of air bubbles rupturing the interlobular space. |
| Lobar [pneumonia - cow](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_023.htm) | Lung fragment with lobar pneumonia in the “red hepatisation” stage. Note the yellowish, jagged edge, necrotic foci inserted in a solid-looking parenchyma of homogenous colouration. The hole that can be seen in the centre of the fragment corresponds to material that has been removed for complementary exams. |
| Lobar [pneumonia - cow](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_037.htm) | Lobar pneumonia. Note how the lesions are homogenous and how they affect entire lobes (apical, intermediate, cardiac and about half of the main right lobe), corresponding to the “red hepatisation” stage. |
| [Neurofibromatosis - cow](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_029.htm) | Note the small, firm and pale nodules corresponding to neurofibromas on the edges of the ribs (arrows) A diagnosis of neurofibromatosis is emitted whenever these lesions appear in various locations, indicating primary multiplicity. |
| [Pasteurella pneumonia - cow](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_071.htm) | Pasteurella pneumonia in a calf. The affected pulmonary lobes (P) appear dark-red and firm upon palpation. The paler lobes are merely congested. The arrow on the right-side image points to a bronchus containing pus. C – Heart. |
| Pasteurella [pneumonia - cow](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_071.htm) | Pasteurella pleuritis and necrotizing pneumonia in a calf. Note how areas of parietal serosa that were continuous with the visceral serosa and surface of the lungs, to which they were attached, appear necrotic. On the bottom of the image, thin membranes corresponding to adherences between the two layers of the pleura can be seen. |
| [Peripneumonia - cow](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_013.htm) | Contagious peripneumonia in a cow. The cut surface of the lung exhibits the marked heterogeneity of the lesions that grants the lung a distinctive marble-like appearance. Note the very evident oedema of the interlobular septa. The image on the right shows the septal distension in greater detail, where thrombosed lymphatic vessels (arrow) as well as foci of perivascular organization (circles) can be seen. The first arise as elongated structures of clear content, sometimes occupying more than half of the total diameter of the septum in which they are inserted. The latter, appear as small red dots corresponding to blood vessels surrounded by a halo of lardaceous tissue. |
| Suppurative [pneumonia - calf](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_096.htm) | Focal suppurative [pneumonia in a calf](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_096.htm). This cadaver exhibited several abscesses distributed throughout the abdominal cavity secondary to dissemination of bacterial agents following omphalophlebitis. |
| [Bronchopneumonia and emphysema - sheep](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_018.htm) | Foci of bronchopneumonia and lesions of alveolar emphysema. Note the dark-coloured lobes affected by heterogeneous exsudative inflammation of lobular distribution. The interlobular tissue of the lobe located in the centre of the image is similarly distended due to inflammatory oedematous infiltration. Some areas of the lung (below and to the left) exhibit excessively dilated alveoli probably as a way of compensating the respiratory difficulties caused by bronchopneumonia (vicarious emphysema). |
| Echinococcosis - sheep | Echinococcosis cysts on the cranial regions of left main lobe and in the middle regions of the main right lobe. The greyish jagged lesion that can be seen on the caudal third of the left main lobe corresponds to an area of parenchymal densification secondary to localized interstitial pneumonia, as a response to the presence of strongylide eggs and larvae. This type of lesion is called an “incubation nodule”. |
| Echinococcosis - sheep | Multiple *Echinococcus polymorphus* cysts on the main pulmonary lobes. |
| Strongylosis - sheep | Grey parasitic nodules about 2 to 3 mm in diameter, distributed throughout the lung in a case of pulmonary strongylosis. These lesions correspond to inflammatory granulomas formed around parasites that were retained in the course of their migrations. |
| [Bronchopneumonia - pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_010.htm) | Lesions of bronchopneumonia in confluent foci. Note the heterogeneous appearance of the lesions, with some of the lobules exhibiting a dark-red colouration while others appear greyish or pink. Some areas have been spared, like the ones on the right. |
| Chronic fibrous alveolitis [– microscopy image - pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_100.htm) | Alveolar wall fibrosis in a case of chronic alveolitis in a pig. The collagen fibres have been stained with Van Gieson stain (100x). |
| Interstitial and pleural [oedema - pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_016.htm) | Interstitial and pleural [oedema](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_016.htm) granting the surface of the lung a very smooth and reflective appearance. The interlobular spaces are dilated as a result of fluid infiltration. |
| Interstitial [pneumonia – pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_038.htm) | Lesions consistent with interstitial pneumonia on the cranial and cardiac lobes. The dark-coloured, retracted areas (atelectasis) represent affected territories. |
| [Lobar pneumonia - pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_036.htm) | Lobar pneumonia. Note how the cranial lobes, as well as the cranial portion of the caudal lobe, appear dark-red and with increased parenchymal density. These lesions correspond to the “red hepatisation” stage. |
| Suppurative [pneumonia – pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_096.htm) | Focal suppurative [pneumonia in a pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_096.htm) that was diagnosed with vertebral osteomyelitis associated with tail necrosis, secondary to cannibalism. |
| Aspergillosis – chicken | Numerous small aspergillosis nodules on the lung and in the air sacs of a chicken. |
| [Aspergillosis – common quail (Coturnix coturnix)](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_007.htm) | Nodules in the air sacs and on the peritoneal serosa in a case of aspergillosis in a common quail. |
| Aspergillosis – microscopy image – chicken | Aspergillus fumigatus in a case of mycotic pneumonia (left-side image, 40x; right-side image, 100x). |
| [Aspergillosis - turkey](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_006.htm) | Aspergillosis lesions in the air sacs of a poult. |
| Anthracosis [- chimpanzee](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_003.htm) (Pan troglodytes) | Pulmonary anthracosis in a chimpanzee. The fine black punctuations correspond to charcoal fixation points. |
| Chronic fibrous pleuritis – dog | Chronic fibrous pleuritis in a dog. Note how the lung is deformed, its lobes rounded and firm, the edges poorly defined. The heart can be seen on the left. |
| Diaphragmatic hernia – dog | Diaphragmatic hernia. The traumatic rupture of the diaphragm has resulted in migration of a very significant part of the stomach into the thoracic cavity. On the right, the rupture point can be seen. The opening located on the right in the image corresponds to the oesophageal foramen. |
| Mediastinal lymphoma - dog | Note the large neoplastic mass that can be seen in the cranial mediastinum, partially concealing the heart. The mass was revealed to be a mediastinal lymphoma. |
| [Necrosis of the intercostal muscles - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_028.htm) | Pale striation of the intercostal muscles in a case of elevated uraemia secondary to renal failure. The striae are perpendicular to the ribs and correspond to necrotic areas of the muscles. |
| Diaphragmatic hernia – cat | Congenital diaphragmatic hernia in a cat. Note how most of the intestine, the stomach and part of the liver are now located in the thoracic cavity. The image on the right was taken after the viscera were removed. The diaphragm was placed on a white board, enhancing the fissure that exhibits smooth borders with no signs of fibrosis. |
| Diaphragmatic hernia – cat | Congenital diaphragmatic hernia. A major part of the intestine has migrated into the thoracic cavity through an opening in the diaphragm that resulted from a congenital malformation. |
| Diaphragmatic hernia – horse | Diaphragmatic rupture in a horse. The perfectly smooth edges suggest that it must be congenital or have occurred a long time before death. |
| Diaphragmatic hernia – horse | A significant portion of the stomach of this horse was located inside the thoracic cavity. The stomach in itself is extremely distended due to the presence of gas produced in the organ, as a consequence of the animal’s grain-rich diet. |
| [Fibrinous](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_087.htm) pleuritis – horse | Severe pleuritis in a horse. Approximately 15 litres of serofibrinous fluid have been removed from the thoracic cavity, which pleural layers are completely covered with a thick coat of fibrin that conceals the heart. The loose fibrin plaques represent adherence points between the pleural layers that were ruptured during the opening of the thoracic cavity. A very small portion of a much congested lung is visible in the right-side image, near the right upper corner. Microbiological analysis revealed the presence of Streptococcus equi. |
| [Fibrinous](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_087.htm) pleuritis – horse | Severe lesions of [fibrinous](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_087.htm) pleuritis in a horse. Microbiological analysis was positive for Streptococcus equi ssp zooepidemicus. |
| Congestive-haemorrhagic pleuritis – calf | Congestive-haemorrhagic pleuritis in a calf diagnosed with pneumonia. |
| Fibrinous pleuritis [- pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_031.htm) | Fibrinous pleuritis, with adherence points between the pleural layers. |
| [Fibrinous](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_087.htm) pleuritis and pericarditis [– pig](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_101.htm) | [Fibrinous](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_087.htm) pleuritis and pericarditis. Note how both pleura and pericardium are coated with fibrinous white-yellow exsudate that causes the pleural layers to adhere to each other. |
| [Suppurative](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_087.htm) pleuritis and pericarditis [– goat](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_101.htm) | [Suppurative](file:///C:\Users\Dalia\Desktop\Htm\ap_resp\resp_087.htm) pleuritis and pericarditis in a 23-day-old kid. This animal was also diagnosed with fibrinous arthritis. |
| Intrathoracic abscesses - rabbit | Large intrathoracic abscesses caused by Pasteurella spp. Note the fluid white pus contained in the abscesses. |

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| [Atopy – dog](file:///D:\Meu\FMV\Htm\pele\pele_056.htm) | Superficial pyoderma with intense exsudation in a dog with atopic dermatitis. Note the oedema of the fingers, erythema of the interdigital skin and blood-stained exsudation. This animal was also diagnosed with hyperplastic otitis, evident in the image shown below, in which the external auditory canal is completely obstructed by hyperplastic tissue. |
| [Bullous pemphigoid – microscopy image - dog](file:///D:\Meu\FMV\Htm\pele\pele_034.htm) | Bullous pemphigoid in a dog with formation of a sub-epidermal vesicle, full of polymorphonuclear neutrophils. This lesion is a consequence of the synthesis and release of autoantibodies against the basal membrane (H&E, 40x). |
| Chronic demodicosis [with seborhea oleosa- dog](file:///D:\Meu\FMV\Htm\pele\pele_082.htm) | Chronic demodicosis lesions in a Cocker. These lesions had gone undiagnosed for over a year. The darkening and lichenification of the skin demonstrate the chronic character of the illness. The image on the right shows scales of secondary seborrhoea oleosa. |
| Cushing’s syndrome [- dog](file:///D:\Meu\FMV\Htm\pele\pele_005.htm) | Cushing’s syndrome in a Rottweiler. Note the large calcificied plaques in the dermis - *calcinosis cutis*. |
| Cushing’s syndrome [- dog](file:///D:\Meu\FMV\Htm\pele\pele_005.htm) | Bilateral alopecia and abdominal distension caused by loss of muscle tonus in a case of Cushing’s syndrome. In this case alopecia is considered a primary lesion. |
| [Demodicosis - dog](file:///D:\Meu\FMV\Htm\pele\pele_009.htm) | Severe diffuse superficial pyoderma and folliculitis secondary to demodicosis. The affected areas exhibit exsudative lesions that bleed easily. The right-side image shows the same animal after a few weeks of treatment. Recovery is nearly complete. |
| [Demodicosis – microscopy image - dog](file:///D:\Meu\FMV\Htm\pele\pele_010.htm) | Demodex canis mites in the hair follicles (H&E, 40x). |
| [Demodicosis with generalized pyoderma - dog](file:///D:\Meu\FMV\Htm\pele\pele_081.htm) | Severe case of demodicosis in a young Doberman bitch with secondary generalized infection of the skin. The animal died a few days after this consult such was the severity of her condition. Note how thin and prostrated she was. |
| Diffuse superficial [pyoderma - dog](file:///D:\Meu\FMV\Htm\pele\pele_075.htm) | Epidermal collarettes on the inner thigh (arrows), in a case of pyoderma. Collarettes are secondary lesions that result from the rupture of pustules. They appear as small circles of erythematous skin surrounded by a “collar” of loosened epidermis overhanging the periphery of the lesion. |
| [Discoid lupus erythematosus - dog](file:///D:\Meu\FMV\Htm\pele\pele_062.htm) | Discoid lupus erythematosus on a dog’s nose characterized by crust formation. The lesions become worse after exposure to sunlight. |
| [Discoid lupus erythematosus - dog](file:///D:\Meu\FMV\Htm\pele\pele_062.htm) | Crusted lesions corresponding to discoid lupus erythematosus on the muzzle of a 10-year-old Siberian Husky. |
| Endocrine alopecia - dog | Symmetrical alopecia and hyperpigmentation in a case of growth hormone deficiency. Note how this animal’s coat has all the characteristics of a puppy’s coat. In such cases, alopecia is considered a primary lesion. |
| Endocrine alopecia - dog | Endocrine alopecia. Note the symmetrical absence of hair and hyperpigmentation. In such cases, alopecia is considered to be a primary lesion. |
| Endocrine alopecia - dog | Symmetrical alopecia and hyperpigmentation due to hyperoestrogenism secondary to a sertolinoma. In such cases, alopecia is considered a primary lesion. |
| Endocrine alopecia - dog | Symmetrical dorsal alopecia and hyperpigmentation due to hypothyroidism in a dog. |
| Epidermal collarettes - dog | Shed keratinized material surrounding an erythematous hyperpigmented lesion on a dog’s abdomen. Behind it, smaller collarettes can be seen. |
| [Erythematous plaques - dog](file:///D:\Meu\FMV\Htm\pele\pele_011.htm) | Erythematous plaques on the back of a dog suffering from dermatitis after contact with a caustic substance. These plaques are primary lesions. |
| F.A.D. (flea allergy dermatitis) [- dog](file:///D:\Meu\FMV\Htm\pele\pele_006.htm) | Flea allergy dermatitis. The posterior skin of the hind limbs and the perianal region show alopecia and lichenification, the latter due to thickening of the epidermis caused by the chronic evolution of the condition. In such cases alopecia is considered to be a secondary lesion caused by the destruction of hair as a result of pruritus. |
| [Fleas, severe infestation – dog](file:///D:\Meu\FMV\Htm\pele\pele_093.htm) | Severe flea infestation on a 7-year-old mixed-breed dog. The animal exhibited severe anaemia that must have contributed to the cause of death. |
| Generalized [pemphigus foliaceus - dog](file:///D:\Meu\FMV\Htm\pele\pele_052.htm) | Epidermal collarettes disseminated through the surface of the skin in a dog with an autoimmune disease (pemphigus foliaceus). The collarettes, shown in greater detail on the right, were formed when the vesicles ruptured. |
| Generalized [pemphigus foliaceus – dog](file:///D:\Meu\FMV\Htm\pele\pele_091.htm) | Generalized [pemphigus foliaceus](file:///D:\Meu\FMV\Htm\pele\pele_091.htm) in a 5-year-old Rafeiro do Alentejo. The lesions affected not just the facebut also theabdominal wall, torso and limbs. Intact vesicles can be seen on the right-side image. The microscopy image (below) shows the contents of one of these vesicles, consisting in neutrophils and free round keratinocytes (acanthocytes) (H&E, 100x). |
| Intraepidermal pustule [– microscopy image - dog](file:///D:\Meu\FMV\Htm\pele\pele_021.htm) | Small intraepidermal extrafollicular pustule (H&E, 40x). Innumerous polymorphonuclear neutrophils can be seen where the epidermal layers have become detached. Pustules are always classified as primary lesions. |
| Juvenile cellulitis - dog | Juvenile cellulitis in a puppy complicated by adverse drug reaction. The skin of the head is inflamed and thickened, while the mandibular and cervical lymph nodes are noticeably enlarged. |
| Juvenile cellulitis - dog | Juvenile cellulitis in a two-and-a-half-month-old puppy. It consists in a pyogranulomatous deep infection of unknown aetiology. The origin of this condition is most likely multifactorial, in part due to bacterial infection. The lesions can be seen on the face, accompanied by cervical lymph node hypertrophy. |
| [Leishmaniasis - dog](file:///D:\Meu\FMV\Htm\pele\pele_013.htm) | Alopecia, lichenification and atrophy of the head muscles in a case of leishmaniasis. Note the dry furfuraceous desquamation, made evident by the presence of small keratin fragments on top of the necropsy table. In such cases, seborrhoea sicca is considered a secondary lesion. |
| [Leishmaniasis - dog](file:///D:\Meu\FMV\Htm\pele\pele_014.htm) | Chronic periocular dermatitis, in a case of leishmaniasis. Note the lichenification of the skin in the affected areas. |
| [Leishmaniasis - dog](file:///D:\Meu\FMV\Htm\pele\pele_015.htm) | Cutaneous leishmaniasis. Note the multiple, very firm, cutaneous nodules, some of them with a few centimetres in the diameter, located in various areas of the skin. The one on the dorsal region is particularly evident. |
| [Leucotrichia - dog](file:///D:\Meu\FMV\Htm\pele\pele_016.htm) | Leucotrichia after treatment for demodicosis. Periocular lesions were particularly severe in this case. |
| Localized [demodicosis - dog](file:///D:\Meu\FMV\Htm\pele\pele_066.htm) | Atypical form of localized demodicosis in a dog. Note the circular alopecia associated with erythema and crusts. |
| Localized dermatophytosis [- dog](file:///D:\Meu\FMV\Htm\pele\pele_067.htm) | Confluent areas of circular alopecia, erythema, desquamation and crusts on the left posterior limb of a dog with localized dermatophytosis. |
| Malassezia [dermatitis - dog](file:///D:\Meu\FMV\Htm\pele\pele_086.htm) | Severe lesions of Malassezia dermatitis in a dog. Note the epidermal hyperplasia as well as the presence of a thick layer of keratin (orthokeratotic hyperkeratosis) between which scales innumerous forms of Malassezia may be seen. This case is particularly severe since the agent is seldom visible in skin biopsy samples in mild infections (above, H&E 40x; below, H&E 400x). |
| Metatarsal fistulation – dog | Fistula on the caudal surface of a German Shepherd’s metatarsus, in the skin-paw pad transition. This affliction has been described as particularly frequent for this breed. |
| Paw pad [hyperkeratosis - dog](file:///D:\Meu\FMV\Htm\pele\pele_046.htm) | Paw pad [hyperkeratosis in a dog](file:///D:\Meu\FMV\Htm\pele\pele_046.htm) diagnosed with canine distemper. |
| [Pemphigus foliaceus - dog](file:///D:\Meu\FMV\Htm\pele\pele_026.htm) | Crusted pemphigus foliaceus lesions on the dorsal surface of a Setter’s muzzle diagnosed upon skin biopsy. |
| Pemphigus foliaceus – dog | Nasal hyperkeratosis secondary to facial pemphigus foliaceus in a 10-year-old Labrador. The image on the right shows droplets of pus being released from the pyogranulomatous lesions.  (photo by Vera Santos Pereira, veterinary surgeon) |
| [Petechiae on the skin and oral mucosa - dog](file:///D:\Meu\FMV\Htm\pele\pele_096.htm) | Petechiae on the skin and oral mucosa of a 10-year-old Portuguese Podengo, that died of tick fever. |
| [Phlegmon - dog](file:///D:\Meu\FMV\Htm\pele\pele_085.htm) | Dog bite on the back of a dog that died after developing severe bacterial infection with extensive pyoderma and pus accumulation (phlegmon). The image on the right shows the lesion after skinning. |
| [Phlegmon - dog](file:///D:\Meu\FMV\Htm\pele\pele_085.htm) | Muscle necrosis and subcutaneous inflammation in a dog, due to a phlegmon caused by an injection without asepsis. |
| Pustules [- dog](file:///D:\Meu\FMV\Htm\pele\pele_027.htm) | Numerous pustules completely disseminated throughout the skin in a Rafeiro do Alentejo with nearly generalized furunculosis. The nodules correspond to furuncles. The fur has been shaved allowing for better visualization of the lesions. |
| Sarcoptic mange [- dog](file:///D:\Meu\FMV\Htm\pele\pele_061.htm) | Generalized sarcoptic mange. Note the generalized erythema and alopecia, associated with loss of body condition and prostration. Pruritus is usually intense. |
| [Seborrhoea oleosa - dog](file:///D:\Meu\FMV\Htm\pele\pele_048.htm) | Seborrhoea oleosa plaques on the cervical region of a dog with multicentric lymphoma. |
| [Seborrhoea oleosa - dog](file:///D:\Meu\FMV\Htm\pele\pele_048.htm) | Strongly adhered plaques corresponding to cutaneous desquamation in a case of seborrhoea oleosa on a Cocker Spaniel. A collarette can be seen in the centre of the image. |
| [Seborrhoea oleosa - dog](file:///D:\Meu\FMV\Htm\pele\pele_048.htm) | Seborrhoea oleosa secondary to severe pyoderma. The large, adherent scales are a result of the loss of cornified keratinocytes. |
| Seborrhoea sicca – dog | Seborrhoea sicca in a dog. Note the presence of fine loose dry scales on the dorsal fur. |
| Subcorneal vesicles – microscopy image [- dog](file:///D:\Meu\FMV\Htm\pele\pele_031.htm) | Subcorneal vesicles on the skin of a dog (H&E, 40x), possibly as a result of contact dermatitis. Vesicles are always classified as primary lesions. |
| Subcutaneous haematoma - dog | Purple staining of the skin in a dog with multiple subcutaneous haematomas. The hair has been shaved to allow for better visualization of the lesions. |
| Superficial necrolytic dermatitis [- dog](file:///D:\Meu\FMV\Htm\pele\pele_083.htm) | Superficial necrolytic dermatitis in a dog with severe hepatic disease. Note the sequence of coloured layers that characterize this condition. From top to bottom, a red layer (parakeratosis), a white layer (intracellular keratinocyte oedema) and a blue layer (epidermal hyperplasia), can be seen. |
| Superficial [pyoderma - dog](file:///D:\Meu\FMV\Htm\pele\pele_075.htm) | Beyond numerous recently formed collarettes, it is possible to identify a small intact pustule (to the right), on the abdominal skin of this dog. |
| Toxic epidermal necrolysis [- dog](file:///D:\Meu\FMV\Htm\pele\pele_087.htm) | Toxic epidermal necrolysis in a dog with griseofulvin intoxication. The animal developed severe hepatic failure associated with cirrhosis. The skin is alopecic, erythematous and moist, with extremely severe lesions around the anus. Note the necrosis of the nails. |
| Eosinophilic granuloma [- cat](file:///D:\Meu\FMV\Htm\pele\pele_095.htm) | Eosinophilic granuloma on the chin and nose of a 9-year-old, male Domestic European cat. |
| Miliary feline dermatitis [– cat](file:///D:\Meu\FMV\Htm\pele\pele_068.htm) | Miliary feline dermatitis, probably due to food allergy, in a cat. The face exhibits alopecia, erythema abrasions and crusts. |
| Necrotic panniculitis [- cat](file:///D:\Meu\FMV\Htm\pele\pele_079.htm) | Necrotic dermatitis and panniculitis in a cat after local injection of Alsir (enrofloxacin). |
| Pemphigus foliaceus – cat | Crusted lesions of pemphigus foliaceus, located on the edge of the ears, in a 4-year-old cat. On the right, note the appearance of the dorsal surface of the ear (image taken with the animal under anaesthesia). |
| [Pemphigus vulgaris - cat](file:///D:\Meu\FMV\Htm\pele\pele_054.htm) | Cat diagnosed with pemphigus vulgaris. The animal’s general condition was severely affected. |
| Skin fragility syndrome [– cat](file:///D:\Meu\FMV\Htm\pele\pele_076.htm) | This cat was diagnosed with skin fragility syndrome. Note how the skin is very thin and transparent, allowing the visualization of vascular structures. |
| Skin fragility syndrome [– cat](file:///D:\Meu\FMV\Htm\pele\pele_076.htm) | Skin fragility syndrome in a cat. The dorsal and lumbar regions exhibit extensive crusted lesions with underlying purulent material. This animal’s liver (on the right) presented with an intense yellow colouration, corresponding to a severe degenerative lesion.  Below, on the left, a microscopy image of the skin is displayed. There is marked atrophy of the dermis, with hair follicles appearing close together in a very small area. This cat was also diagnosed with apparently secondary hyperadrenocorticism, although no hypophyseal tumour has been detected. A microscopy image of an adrenal gland can be seen on the right, showing marked hypertrophy of the cortical cells, which cytoplasm appears finely granulous. Note the small cortical nodule that invades the extracapsular space, corresponding to cortical hyperplasia. The extracapsular nodule that can be seen above and to the left is a ganglion. |
| Culicoid [hypersensitivity - horse](file:///D:\Meu\FMV\Htm\pele\pele_070.htm) | Crusts and dry desquamation (seborrhoea) on the hindquarters of a horse diagnosed with culicoid hypersensitivity. |
| Besnoitiosis – bull | Uniformly distributed papulae on the scrotal skin of a bull diagnosed with besnoitiosis. The present of parasitic cysts elicits a microscopic granulomatous inflammatory reaction that corresponds macroscopically to the papulae. |
| Orthokeratotic hyperkeratosis [– microscopy image - cow](file:///D:\Meu\FMV\Htm\pele\pele_012.htm) | Orthokeratotic hyperkeratosis (H&E, 40x). Additionally to the extraordinary thickening of the epidermis (achantosis), the cornified layer appears thickened, although its typical architecture has not changed and no nuclei can be seen in the cornified keratinocytes. This skin sample was collected from the back of a cow diagnosed with type 3 photosensitivity secondary to ingestion of hepatotoxic plants. |
| Parakeratotic hyperkeratosis [– microscopy image - pig](file:///D:\Meu\FMV\Htm\pele\pele_012.htm) | Parakeratotic hyperkeratosis (H&E, 40x and 400x). Note the abnormal thickness of the cornified layer, in which vestiges of nuclei can be seen, and cellular proliferation in the stratum spinosum, corresponding to achantosis. The dermis is particularly congested. |
| [Mixomatosis - rabbit](file:///D:\Meu\FMV\Htm\pele\pele_018.htm) | Nodules on the ears and around the eyes and mouth in a case of mixomatosis. On the right, note the corresponding microscopy image with ballooning degeneration of the epidermal cells and dermal oedema (H&E, 40x). |
| [Mange - chicken](file:///D:\Meu\FMV\Htm\pele\pele_029.htm) | Irregular position of the scales of the cornified layer on a rooster’s feet, secondary to Cnemidocoptes mutans infestation. This mite is responsible for the so-called “scaly leg” disease of fowls. |
| [Intramuscular mast cell tumour - dog](file:///D:\Meu\FMV\Htm\pele\pele_090.htm) | Grade 3 mast cell tumour invading the biceps femoris muscle of the left hind limb of an 11-year-old Boxer. On the left, note how the muscle exhibits strands of white tissue that gives it an unusually firm texture. The right-side image shows the hypertrophied iliac lymph nodes (arrow above the bladder pointing to the smallest lymph node, cranial to the bladder). |
| Mammary tumour [- bitch](file:///D:\Meu\FMV\Htm\pele\pele_077.htm) | Large ulcerated mammary tumour in a bitch. |
| [Mast cell tumour – dog](file:///D:\Meu\FMV\Htm\pele\pele_073.htm) | Band-like lesion consistent with mast cell tumour on the left thoracic limb of a dog. Note the alopecia and abnormal thickness of the skin. Note the diffuse mastocyte infiltration surrounding the annexa on the right-side microscopy image (Toluidine Blue, 40x). |
| Metastatic perianal gland carcinoma - dog | Metastatic hepatoid (perianal) gland carcinoma in a dog. On the left, several metastases can be seen, disseminated throughout the omentum. Metastases were also present in the spleen (right-side image). |
| [Papilloma - dog](file:///D:\Meu\FMV\Htm\pele\pele_032.htm) | Isolated papilloma on the back of a male Cocker Spaniel. The hair around the lesion has been clipped. Note the irregular appearance of the broad-based neoplastic lesion. |
| [Papilloma - dog](file:///D:\Meu\FMV\Htm\pele\pele_022.htm) | Isolated cutaneous papilloma. Note the broad-based, jagged, exophytic neoplastic lesion in the area where the hair has been clipped. |
| [Papillomas - dog](file:///D:\Meu\FMV\Htm\pele\pele_019.htm) | Multiple very small papillomas on the abdominal wall. |
| Perianal gland tumour [- dog](file:///D:\Meu\FMV\Htm\pele\pele_097.htm) | Large perianal gland tumour in an old mixed-breed dog. In spite of its extraordinary size, the tumour did not exhibit any signs of malignancy which is consistent with the absence of metastases. |
| Squamous cell carcinoma of the nail bed [- dog](file:///D:\Meu\FMV\Htm\pele\pele_072.htm) | Recurrence of a squamous cell carcinoma of the nail bed on a missing, previously amputated, finger. |
| Squamous cell carcinoma –microscopy image [- dog](file:///D:\Meu\FMV\Htm\pele\pele_033.htm) | A squamous cell carcinoma is a tumour derived from spinous cells of pavemented stratified epithelia. Histological analysis of the tumour reveals that the neoplastic epithelial cells are arranged in groups that accumulate in the dermal connective tissue. Undifferentiated tumours such as the one depicted in the image do not exhibit keratin pearls (keratinisation nests formed in the dermis). In this case, only isolated keratinized cells can be seen (H&E, 40x). |
| [Cutaneous horn - cat](file:///D:\Meu\FMV\Htm\pele\pele_041.htm) | Cutaneous horn in a cat. |
| Mammary tumour [– cat](file:///D:\Meu\FMV\Htm\pele\pele_094.htm) | Infected ulcerated mammary adenocarcinoma in an 11-year-old female cat. |
| Squamous cell carcinoma [- cat](file:///D:\Meu\FMV\Htm\pele\pele_037.htm) | Destruction of the nares and upper lip of a cat diagnosed with a squamous cell carcinoma. |
| Subcutaneous [fibrosarcoma - cat](file:///D:\Meu\FMV\Htm\pele\pele_044.htm) | Subcutaneous [fibrosarcoma in a cat](file:///D:\Meu\FMV\Htm\pele\pele_044.htm). The bosselated appearance of the tumour became evident once the skin was removed. On the right-side image, see how the cut surface of the tumour exhibits blood and fibrin-coated areas of necrosis (particularly on the left). |
| Subcutaneous [fibrosarcoma - cat](file:///D:\Meu\FMV\Htm\pele\pele_044.htm) | Subcutaneous [fibrosarcoma on the back of a cat](file:///D:\Meu\FMV\Htm\pele\pele_044.htm). The fur covering the lesion has been shaved. Note the bosselated and ulcerated appearance of the lesion. Necrotic material is flowing from the ulcerated area of the tumour. |
| [Papillomas - cow](file:///D:\Meu\FMV\Htm\pele\pele_023.htm) | Note the numerous papillomatous formations inserted on the back of this dairy cow, corresponding to infection with Papillomavirus. |
| [Fibrosarcoma – hedgehog (Erinaceus europaeus)](file:///D:\Meu\FMV\Htm\pele\pele_092.htm) | Subcutaneous [fibrosarcoma located on a hedgehog’s right thoracic wall. The yellowish areas correspond to necrotic and calcified tissue.](file:///D:\Meu\FMV\Htm\pele\pele_044.htm) |

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| [Adherent kidney capsule - dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_080.htm) | Adherences between the cortex and the kidney capsule in a dog. This type of lesion is frequently a sign of renal inflammation. |
| Chronic interstitial nephritis [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_021.htm) | Chronic interstitial nephritis. Note the irregularity of the surface of the kidney. The parenchyma shows innumerous depressions while the cortex appears pale and marked by light spots. The medulla is atrophic. |
| Chronic interstitial nephritis [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_021.htm) | Chronic interstitial nephritis. Only one of the kidneys has been decapsulated, allowing one to see how the cortical surface is irregular and indented. |
| Chronic interstitial nephritis [– microscopy image - dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_021.htm) | Chronic interstitial nephritis. By staining collagen blue, Masson’s trichrome stain enhances the fibrosis of the renal interstitium. The glomerulus that can be seen on the left-side image (100x) exhibits severe lesions of chronic glomerulitis, translated in thickening of the Bowman’s capsule and in deposition of collagen in the glomerular tuft. On the right, note the cellular infiltration of the renal interstitium by mononuclear inflammatory cells, frequent in this kind of nephritis (400x). |
| Chronic interstitial nephritis [– microscopy image - dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_021.htm) | Chronic interstitial nephritis (H&E, 40x). Note the pronounced interstitial fibrosis and generalized tubular atrophy. |
| Chronic renal lesion [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_040.htm) | Severe chronic congenital renal lesion. Both kidneys appear atrophic and exhibit surface irregularity. The gastric wall (E) shows areas of necrosis and calcification as a consequence of the severe renal lesions. |
| Glomerular amyloidosis [– microscopy image - dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_005.htm) | Glomerular amyloidosis (H&E, 100x). Note the hyaline deposits in the glomerular tufts. |
| [Hydronephrosis - dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_055.htm) | Distension of the renal pelvis in a dog. Although bilateral, this distension is more evident on the left kidney (to the right in the image). The arrows indicate the distended ureters. |
| [Lymphoma – dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_066.htm) | Renal lymphoma in a dog. The kidney exhibits a nodule corresponding to lymphoid tissue. |
| Medullary amyloidosis [– microscopy image - dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_038.htm) | Medullary amyloidosis (H&E, 100x). Note the hyaline deposits in the medullary interstitium, separating rare severely damaged tubules. |
| Medullary atrophy [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_068.htm) | Medullary atrophy due to fibrosis in the kidneys of a dog. |
| [Nephrocalcinosis- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_024.htm) | Medullary sclerosis. Note the nacre-white striations corresponding to interstitial fibrous tissue. The pale colouration can also be due to intra or extratubular calcium deposition (nephrocalcinosis). |
| Persistent phoetal lobation – dog | Persistent phoetal lobation. The ridges that can be seen in the organ are a result of incomplete fusion of the renal lobes during organogenesis. This condition carries no functional consequences. |
| Polycystic kidney [- cat](file:///D:\Meu\FMV\Htm\ap_urina\urin_035.htm) | Polycystic kidney. The entire parenchyma is occupied by numerous cysts. The renal pelvis is not distended. These cysts must have formed during renal development, due to inappropriate fusion between the secretory portion of the metanephron and the excretory portion of the Wolff duct derivatives, originating small retention cysts. This lesion affects the entire parenchyma and is frequently bilateral, making it incompatible with life. |
| Renal atrophy [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_072.htm) | Marked atrophy of the right kidney in a 7-year-old bitch that died of sepsis secondary to dystocia. |
| Renal [carcinoma - dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_069.htm) | Renal carcinoma in an 8-year-old Poodle. The organ was more than 20 cm in diameter and weighted approximately 3 Kg. On the right, the cut surface of the mass can be seen. Note the white, multilobular appearance, with a few haemorrhagic foci and a small cystic cavity. |
| Renal lithiasis [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_070.htm) | Severe renal lithiasis in a 12-year-old German Shepherd. The renal pelvis is full of numerous yellow-green calculi. |
| Unilateral renal aplasia [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_002.htm) | Unilateral renal aplasia. Note how the left kidney is absent. |
| Acute focal nephritis [- cat](file:///D:\Meu\FMV\Htm\ap_urina\urin_071.htm) | Acute focal nephritis in a cat diagnosed with non-effusive (dry) feline infectious peritonitis. The image on the left shows a decapsulated kidney, showing renal surface, which is irregular, punctuated with small pale nodules. A sagital cut of the organ, on the right, exhibits oedema and nodular lesions (corresponding to focal pyogranulomatous nephritis) that only affect the cortex. |
| [Carcinoma in atrophic kidney – cat](file:///D:\Meu\FMV\Htm\ap_urina\urin_062.htm) | Severe right kidney atrophy in a cat with apparent compensatory left kidney hypertrophy. On the right, the cut surface of the right kidney can be seen exhibiting cortical irregularity and proportional medullary atrophy. Below, note how the left kidney shows no significant changes. Instead, the surrounding adipose tissue made the kidney appear larger than normal. |
| Left kidney atrophy - cat | Abnormal shape of both kidneys in a cat. The right kidney is exceptionally enlarged to compensate for severe atrophy of the left kidney. |
| [Polycystic kidney disease – cat](file:///D:\Meu\FMV\Htm\ap_urina\urin_073.htm) | Polycystic kidney disease in a 7-year-old Persian cat. Both kidneys exhibit several cysts. These are particularly numerous in the cortex. |
| Renal atrophy [- cat](file:///D:\Meu\FMV\Htm\ap_urina\urin_081.htm) | Severe right kidney atrophy (arrow) in a 15-year-old female cat. Additionally, histological analysis of the left kidney showed severe medullary necrosis and multifocal cortical inflammation, justifying renal failure. |
| Renal cyst - cat | Renal cyst. The renal cortex is pale while the cut surface appears irregular and granular. |
| Sub-acute interstitial nephritis [- cat](file:///D:\Meu\FMV\Htm\ap_urina\urin_023.htm) | Sub-acute interstitial nephritis. The kidney is hypertrophied and appears variegated with elevated pale foci of inflammatory cell infiltration. |
| [Amyloidosis - cow](file:///D:\Meu\FMV\Htm\ap_urina\urin_001.htm) | Renal amyloidosis. Note the small yellowish spots in the cortex corresponding to amyloid deposits. |
| [Amyloidosis - cow](file:///D:\Meu\FMV\Htm\ap_urina\urin_001.htm) | Sagital cut of a kidney stained with lugol. Note the fine brown striations in the cut surface radiating from the papillae to the cortico-medullary junction. These striations correspond to amyloid deposits. |
| [Amyloidosis - cow](file:///D:\Meu\FMV\Htm\ap_urina\urin_001.htm) | Sagital cut of a kidney stained with lugol. The glomeruli with amyloid deposits are stained brown. |
| [Amyloidosis - cow](file:///D:\Meu\FMV\Htm\ap_urina\urin_001.htm) | Bovine kidney with medullary amyloidosis (weight, 2 Kg). |
| [Amyloidosis - cow](file:///D:\Meu\FMV\Htm\ap_urina\urin_001.htm) | Bovine kidney with glomerular amyloidosis (weight, 2,6 Kg). |
| [Amyloidosis – microscopy image - cow](file:///D:\Meu\FMV\Htm\ap_urina\urin_001.htm) | Glomerular amyloidosis. Congo Red stain reacts with amyloid, staining it orange. The presence of amyloid is evident in the glomerulus and in an arteriole (100x). |
| Chronic interstitial nephritis - cow | Bovine kidney with chronic interstitial nephritis. One of the lobes depicted in the bottom of the image exhibits a pale area corresponding to fibrous tissue. The other lobes also exhibit pale spots. Organ consistency was greater than normal. |
| Epithelial [nephritis -](file:///D:\Meu\FMV\Htm\ap_urina\urin_012.htm) cow | Epithelial nephritis secondary to enterotoxaemia. Note the variegated appearance of the renal parenchyma due to the contrast between yellow necrotic lesions and dark-red foci of haemorrhagic necrosis. The renal pulp is usually very soft in these cases (pulpy kidney disease). |
| [Pyelonephritis –](file:///D:\Meu\FMV\Htm\ap_urina\urin_030.htm) cow | Pyelonephritis. The greyish lesions surrounded by a haemorrhagic halo correspond to foci of purulent infection in the renal parenchyma. In this case, pyelonephritis, an ascending renal infection, was secondary to purulent cystitis. |
| Renal calculi - calf | Sample of kidney taken from an 8-month-old beef calf exhibiting pyelonephritis and ammonium magnesium phosphate calculi. Several animals from the same farm presented with similar lesions arising suspicion of a water-related illness. |
| [Renal cysts -](file:///D:\Meu\FMV\Htm\ap_urina\urin_033.htm) cow | Multiple renal cysts in a case of polycystic kidney disease. Note the numerous cysts restricted to an area of the kidney. These cysts must have formed during renal development, due to inappropriate fusion between the secretory portion of the metanephron and the excretory portion of the Wolff duct derivatives, originating retention cysts. If the lesion is restricted to a limited area of the parenchyma, as is in this case, no functional consequences are to be expected. |
| [Haemochromatosis - goat](file:///D:\Meu\FMV\Htm\ap_urina\urin_079.htm) | Renal haemochromatosis in a goat.  (photo by Nelson Benevides) |
| [Haemosiderine – microscopy image - sheep](file:///D:\Meu\FMV\Htm\ap_urina\urin_048.htm) | *Perls*' *Prussian blue* is a histochemical method to detect bivalent iron, usually used to identify haemosiderine in tissue. Haemosiderine granules are stained blue, as can be seen in the tubular epithelial cells, in this case of renal haemosiderosis (100x). |
| [Haemosiderine – microscopy image - sheep](file:///D:\Meu\FMV\Htm\ap_urina\urin_048.htm) | Haemosiderine is a pigmented form of iron storage that can be found in any organ with excessive accumulation of this mineral. Renal haemosiderine deposits may arise in the course of chronic haemolytic anaemia or as a result of acute haemoglobinuria. The pigment is produced when haemoglobin is degraded and can usually be seen as brown cytoplasmic granules in the tubular epithelial cells (H&E, 400x). |
| [Cortical petechiae - pig](file:///D:\Meu\FMV\Htm\ap_urina\urin_029.htm) | Cortical petechiae in a case of hog cholera. |
| [Lymphoma - pig](file:///D:\Meu\FMV\Htm\ap_urina\urin_061.htm) | Renal lymphoma in a pig. The dark nodules correspond to lymphoid tissue invading an excessively pale parenchyma due to concurrent anaemia. |
| [Renal cyst - pig](file:///D:\Meu\FMV\Htm\ap_urina\urin_031.htm) | Renal cyst. Singular cysts are generally congenital in nature. The content of this cyst is cloudy and forms a thick mass. The wall of the cyst is covered with fibrinous material. |
| [Renal cyst - pig](file:///D:\Meu\FMV\Htm\ap_urina\urin_032.htm) | Singular renal cyst, possibly congenital. The content is clear and kidney function was not affected. |
| Embryonal nephroma - rabbit | The kidney on the left exhibits a large, pale and friable neoplastic mass. Histopathology has revealed it to be an embryonic nephroma. The kidney on the right is normal. |
| Renal [carcinoma – common](file:///D:\Meu\FMV\Htm\ap_urina\urin_067.htm) hill myna (*Gracula religiosa*) | Renal [carcinoma renal in a 5-year-old common](file:///D:\Meu\FMV\Htm\ap_urina\urin_067.htm) hill myna. Note the large mass in the abdominal cavity, corresponding to a well-differentiated renal carcinoma. Additionally fibrinous aerosaculitis lesions have been found. |
| Uric acid nephritis [– microscopy image - chicken](file:///D:\Meu\FMV\Htm\ap_urina\urin_046.htm) | Uric acid nephritis is a pathologic condition of Man, birds and reptiles, resultant from the deposition of urate crystals in the kidney. Microscopically, gout lesions appear as necrotic foci in which many fine needles (corresponding to crystals) can be seen, surrounded by an inflammatory response with macrophages and frequent foreign body giant cells (arrows) (H&E, 400x). |
| Embolic purulent nephritis – chimpanzee (*Pan troglodytes*) | Embolic purulent nephritis in a chimpanzee. Note the innumerous minute abscesses (<1 mm), disseminated through the cortex, almost seeming to form continuous plaques. |
| Cystic ureteral distension [– cat](file:///D:\Meu\FMV\Htm\ap_urina\urin_011.htm) | Cystic ureteral distension and renal pelvis dilation in the right kidney (early stage hydronephrosis). The poor ureteral drainage may be due to congenital malformation and torsion. Note that the ureter is deformed, exhibiting a diverticulus in its distal third. The left kidney is normal. |
| [Fibrinonecrotizing cystitis - dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_065.htm) | Localized fibrinonecrotizing cystitis with marked tissue loss encompassing a vast area of a dog’s bladder. The yellowish material that covers the lesion corresponds to fibrinous exsudate. |
| Follicular cystitis  [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_007.htm) | Chronic follicular cystitis. Note the small, elevated, pale nodules surrounded by a hyperaemic halo, corresponding to lymphoid mucosal infiltrates. |
| Follicular cystitis  [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_007.htm) | Chronic follicular cystitis and purulent prostatitis in a 13-year-old Labrador. The bladder mucosa exhibits innumerous millimetric nodules corresponding to disseminated hyperplastic lymphoid follicles. The dark colouration of the prostate’s cut surface, as well as around the bladder nodules, is a result of post mortem changes of haematic pigments. |
| Haemorrhagic cystitis [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_007.htm) | Petechiae and haemorrhagic suffusions in a case of haemorrhagic cystitis. |
| Haemorrhagic cystitis [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_007.htm) | Note the intense red colour of the cranial pole of the bladder in this case of haemorrhagic cystitis. |
| Haemorrhagic cystitis [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_007.htm) | Haemorrhagic cystitis (outer wall). Note the haemorrhages that have formed between the serosa and the muscle wall, assuming the appearance of clots. |
| Lithiasis of the renal pelvis and bladder [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_017.htm) | Lithiasis of the renal pelvis and bladder. On the right-side image, it is possible to see how the calculi have moulded into the shape of the renal pelvis. The parenchyma is congested. Below, note the small yellow-brown calculi. |
| Ureteral distension [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_041.htm) | Ureteral distension in a case of inflammation of the peritoneal fat around the bladder that must have disturbed the urine flow into the latter. |
| Ureteral lithiasis [– dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_018.htm) | Urinary retention secondary to ureteral lithiasis. Above, and to the left, note the point of obstruction of the ureter that has led to its distension and urine retention in the renal pelvis, which is similarly distended and congested. The renal parenchyma is also congested. |
| [Urinary bladder leiomyoma - dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_078.htm) | Urinary bladder leiomyoma in a 14-year-old dog with testicular atrophy and prostatic hypertrophy. |
| Urinary retention - dog | Urinary retention. Note the extraordinary bladder distension due to absence of urination reflex in an animal with a spinal cord injury. |
| Vesical lithiasis [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_015.htm) | Vesical lithiasis in a dog. Note the large pale calculi. |
| Vesical lithiasis [- dog](file:///D:\Meu\FMV\Htm\ap_urina\urin_015.htm) | Vesical lithiasis and acute congestive cystitis in a dog. Note the congestion of the bladder mucosa, particularly marked on the cranial pole, and the numerous small calculi. |
| Bladder rupture – cat | Bladder rupture in a 1-year-old cat with severe necrotic bacterial cystitis. The cause of death was peritonitis secondary to the bladder rupture. |
| Fibrinous cystitis and bladder rupture – cat | This nuttered 5-year-old male’s clinical history mentioned recurrent cystitis that resulted in bladder wall irregularity and caused the bladder to rupture. The rupture point was millimetric. Below, the images of the now open bladder show fibrinous cystitis, in which fibrin has formed a mould that fills the bladder lumen. Note the urethral dilation. Microbiological analysis isolated multiresistent Corynebacterium urealyticum (susceptible only to vancomicin). |
| Haemorrhagic cystitis - cat | Haemorrhagic cystitis. The right-side kidney is normal. Kidney pallor is due to lipidic accumulation in tubular cells, which is considered physiologic in cats, particularly males. |
| Haemorrhagic cystitis – cat | Haemorrhagic cystitis in a cat. The bladder, to the right, appears dark red. |
| Necrotic cystitis and bladder rupture – cat | Necrotic bacterial cystitis due to infection with a multiresistent strain of Escherichia coli, in a 1-year-old cat. The bladder wall was made fragile by a severe chronic inflammatory lesion (image on the right) that has resulted in bladder rupture during catheterization. The mucosa is intensely congested. Histological analysis revealed profound mucosal necrosis. The mucosa is covered with a brownish material. |
| Neurogenic bladder – cat | Neurogenic bladder in a cat. Bladder distension is due to a spinal cord injury and absence of neurologic stimulation. |
| [Bladder rupture - foal](file:///D:\Meu\FMV\Htm\ap_urina\urin_058.htm) | Bladder rupture in a foal after dystocia. The scalpel handle was placed in the rupture point. On the right, the removed bladder can be seen. |
| Haemorrhagic cystitis [- cow](file:///D:\Meu\FMV\Htm\ap_urina\urin_003.htm) | Haemorrhagic cystitis in a case of bovine enzootic haematuria. |
| Purulent cystitis [- cow](file:///D:\Meu\FMV\Htm\ap_urina\urin_006.htm) | Purulent cystitis which must have caused pyelonephritis through ascendant infection. The arrow on the bladder is pointing to a place where purulent exsudate is fixated to the bladder wall. The kidney is hypertrophied and appears variegated. The arrow on the kidney is pointing to cortical foci of purulent infection surrounded by a polyciclical outline and a congestive halo, similar to anaemic infarcts. |
| [Hydronephrosis - sheep](file:///D:\Meu\FMV\Htm\ap_urina\urin_013.htm) | Hydronephrosis causing the kidneys to appear exceptionally enlarged. |
| Chronic hypertrophic cystitis [- pig](file:///D:\Meu\FMV\Htm\ap_urina\urin_004.htm) | Chronic hypertrophic cystitis. Note the unusual mucosal thickening with very pronounced pleats similar to brain convolutions. The surface is covered with fibrinous exsudate amongst which one can see glimpses of a very congested mucosa. |
| Haemorrhagic [cystitis - pig](file:///D:\Meu\FMV\Htm\ap_urina\urin_027.htm) | Haemorrhagic cystitis in classic swine fever cases. Note the petechiae and small haemorrhagic foci on the bladder mucosa. |
| Renal pelvis haemorrhage [- pig](file:///D:\Meu\FMV\Htm\ap_urina\urin_026.htm) | Renal pelvis haemorrhage in african swine fever. The renal parenchyma is congested. |
| Ureteral distension [- pig](file:///D:\Meu\FMV\Htm\ap_urina\urin_014.htm) | Ureteral distension secondary to torsion due to renal ptosis. Both ureters are severely dilated and flexuous. The left kidney exhibits a very irregular surface and pale colouration suggesting cystic cavity formation as a consequence of hydronephrosis. Lesions are less obvious in the right kidney. |
| Vesical lithiasis [- pig](file:///D:\Meu\FMV\Htm\ap_urina\urin_036.htm) | Vesical lithiasis in the form of fine sand. Note how the bladder mucosa is slightly congested indicating congestive cystitis. |
| Urinary obstruction [- rabbit](file:///D:\Meu\FMV\Htm\ap_urina\urin_010.htm) | Mineral and organic matter-rich urine has accumulated as a sort of dough, obstructing the urinary ways. Note the congested appearance of the bladder mucosa. |

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| Adipose [hyperplasia - dog](file:///D:\Meu\FMV\Htm\figado\figad_004.htm) | Large nodule corresponding to adipose hyperplasia. Cutting the nodule reveals the pale, greenish appearance of the parenchyma due to steatosis and biliary retention. |
| Focal necrosis [- dog](file:///D:\Meu\FMV\Htm\figado\figad_101.htm) | Focal hepatic necrosis in a 15-year-old dog. The affected area of the liver was in direct contact with a pyogranulomatous lesion of the peripancreatic fat. |
| Glycogen overload [- microscopy image - dog](file:///D:\Meu\FMV\Htm\figado\figad_031.htm) | This is the microscopic appearance of the liver in most cases of severe glycogen overload. Hepatocytes resemble a vegetal cell, such is the contrast between the vacuolated cytoplasm and the plasma membrane. The vacuoles are formed by the dissolution of glycogen in the aqueous solutions (e.g. formalin) used in histological processing (H&E, 100x). |
| Haemorrhagic zonal necrosis [- dog](file:///D:\Meu\FMV\Htm\figado\figad_067.htm) | Haemorrhagic zonal necrosis. Note the background yellowish colouration over which one can see haemorrhagic areas corresponding to centrilobular spaces. |
| [Hepatic centrilobular steatosis - microscopy image - dog](file:///D:\Meu\FMV\Htm\figado\figad_070.htm) | Depending on its location within the hepatic lobule, steatosis can be peripheral, central or diffuse. In this case steatosis is mainly found in the centre of the hepatic lobules (centrilobular steatosis) (H&E, 100x). |
| Hepatic steatosis [- dog](file:///D:\Meu\FMV\Htm\figado\figad_077.htm) | Liver with steatosis exhibiting hypertrophy and pale colouration. The red stripes alternating with pale bands that can be seen on the right lobe, result from the compression exerted by the ribs on the hypertrophied liver. The stripes correspond to the intercostal spaces while the bands correspond to the ribs. |
| Hepatic steatosis – microscopy image - dog | Macrovesicular hepatic steatosis (H&E, 100x). Note the single, large vacuole, corresponding to intracytoplasmic lipid accumulation that almost completely occupies the cytoplasm of each hepatocyte. |
| [Icterus - dog](file:///D:\Meu\FMV\Htm\figado\figad_048.htm) | Yellowish colouration of the subcutaneous tissue corresponding to icterus (jaundice). |
| [Icterus - dog](file:///D:\Meu\FMV\Htm\figado\figad_100.htm) | Marked icterus (jaundice) in a mixed-breed dog. Note the exceptional yellow colouration of the mucosas and subcutaneous fat. Death occurred in the sequence of severe idiopathic hepatitis. The images below show lesions of zonal hepatic necrosis (centrilobular) and biliary nephrosis with large amounts of biliary pigment visible in the cells of the renal tubules. |
| Yellow atrophy - dog | Acute diffuse yellow atrophy in the liver of a dog diagnosed with post-degenerative necrotic cirrhosis. |
| Zonal necrosis [- microscopy image - dog](file:///D:\Meu\FMV\Htm\figado\figad_075.htm) | Zonal necrosis. Note the sharp contrast between the necrotic and the normal territories. The necrotic areas are restricted to the centrilobular and the periacinar areas (H&E, 40x). On the right, the centrilobular areas are rich in cellular debris and erythrocytes. A portal space can be seen in the centre of the image (H&E, 100x). |
| [Lipofuscin- microscopy image - cat](file:///D:\Meu\FMV\Htm\figado\figad_050.htm) | Lipofuscin within the centrilobular hepatocytes. Note the cytoplasmic golden-brown granules within the hepatocytes corresponding to accumulation of ceroid pigment (H&E, 400x). |
| Zonal [necrosis - cat](file:///D:\Meu\FMV\Htm\figado\figad_061.htm) | Zonal degeneration/necrosis. Note the numerous, converging areas of haemorrhagic necrosis alternating with pale foci. |
| Adipose infarct [- microscopy image - cow](file:///D:\Meu\FMV\Htm\figado\figad_029.htm) | Adipose infarct. Note the contrast between the steatotic area and the normal liver (H&E, 40x). |
| [Hepatosis dietectica - pig](file:///D:\Meu\FMV\Htm\figado\figad_026.htm) | Hepatosis dietetica consists in a degenerative lesion caused by vitamin E and selenium insufficiency. |
| [Hepatic steatosis - chicken](file:///D:\Meu\FMV\Htm\figado\figad_056.htm) | Hepatic steatosis and vascular rupture with resulting perihepatic haematoma. |
| [Hepatic steatosis - chicken](file:///D:\Meu\FMV\Htm\figado\figad_056.htm) | Hepatic steatosis. Note the yellowish colouration and the irregular surface of the liver which exhibits rounded edges. |
| Haemorrhagic diathesis [- dog](file:///D:\Meu\FMV\Htm\figado\figad_096.htm) | Haemorrhagic diathesis in an 8-year-old Poodle. Additionally to splenic hypertrophy, the haemorrhagic contents of the stomach and intestine can be seen. It was not possible to determine the origin of the condition. |
| [Macular telangiectasia - microscopy image - dog](file:///D:\Meu\FMV\Htm\figado\figad_072.htm) | Macular telangiectasia in a dog. Note how some sinusoids exhibit focal distension when compared to normal sinusoids (H&E, 100x). |
| Passive [congestion - microscopy image - dog](file:///D:\Meu\FMV\Htm\figado\figad_034.htm) | Passive congestion consists in an increased quantity of blood present in a territory due to difficulties in venous blood flow. It may be generalized or localized, acute or chronic. The liver, like the lung, is one of the first organs to suffer from generalized congestion. Major causes of passive hepatic congestion include global or right cardiac failure. The microscopic appearance of a liver with passive congestion depends on the severity of the condition and on its evolution. In the initial stages, illustrated by the image, only blood accumulation in the centrilobular vein and sinusoids can be seen (H&E, 100x). |
| Cardiac liver [- microscopy image - pig](file:///D:\Meu\FMV\Htm\figado\figad_062.htm) | Cardiac liver secondary to passive congestion. Note the presence of blood in the centrilobular sinusoids (H&E, 40x). |
| [Diaphragmatic hernia - cat](file:///D:\Meu\FMV\Htm\figado\figad_044.htm) | Diaphragmatic hernia in which most of the liver is located inside the thoracic cavity. |
| Hepatic [rupture - pig](file:///D:\Meu\FMV\Htm\figado\figad_057.htm) | Degenerative hepatic lesion that resulted in rupture with formation of haematomas. |
| [Chronic active hepatitis - microscopy image - dog](file:///D:\Meu\FMV\Htm\figado\figad_054.htm) | Chronic active hepatitis in a dog. The portal spaces exhibit exuberant inflammatory infiltrates that penetrate the structure of the hepatic lobules which cells are predominantly necrotic (H&E, 100x). On the right, the animal’s kidney exhibits intense fixation of biliary pigment in the renal tubules, leading to biliary nephrosis. Death occurred in the sequence of hepatic and renal failure (H&E, 100x). |
| [Chronic hepatitis - dog](file:///D:\Meu\FMV\Htm\figado\figad_092.htm) | Chronic hepatitis in an adult dog. The surface of the liver appears irregular, particularly the left medial lobe. |
| Hepatic cirrhosis [- dog](file:///D:\Meu\FMV\Htm\figado\figad_087.htm) | Marked atrophy and fine irregular of the surface of the liver in a dog diagnosed with cirrhosis. Note and compare the size of the liver with the size of the neighbouring organs, namely the stomach. |
| [Hepatic cirrhosis - dog](file:///D:\Meu\FMV\Htm\figado\figad_093.htm) | Hepatic cirrhosis in a 6-year-old due to griseofulvin intoxication. The size of the liver is smaller than normal (compared to the size of the stomach and kidney) and its surface appears markedly irregular. The remaining hepatic cells exhibited severe degenerative lesions. |
| [Hepatic cirrhosis - microscopy image - dog](file:///D:\Meu\FMV\Htm\figado\figad_073.htm) | Postdegenerative hepatic cirrhosis. Note the interstitial fibrous tissue hyperplasia and the changes in the structure of the hepatic trabeculae that form a pseudolobule. Within the fibrous tissue, biliary canal hyperplasia can be identified (H&E, 100x). The image on the right shows the hyperplastic perilobular biliary ducts. Note how the peripheral hepatocytes have suffered metaplasia, transforming into lining cells. Although morphologically similar to normal ducts, the new biliary ducts are not functional (H&E, 400x). |
| [Hepatic cirrhosis - microscopy image - dog](file:///D:\Meu\FMV\Htm\figado\figad_074.htm) | Postdegenerative hepatic cirrhosis. Note the interstitial tissue hyperplasia with formation of pseudolobules in which the newly formed hepatocytes mimic hepatic lobules without a regular trabecular arrangement or a centrilobular vein (above, H&E, 40x). There is also evident formation of biliary neo-canaliculi (biliary way hyperplasia) resulting from metaplasia of peripheral lobular hepatocytes (below, H&E, 100x). |
| [Micronodular cirrhosis - dog](file:///D:\Meu\FMV\Htm\figado\figad_007.htm) | Micronodular cirrhosis. The liver atrophy is made obvious by the exposure of the gallbladder, usually hidden underneath the hepatic lobes. The brownish colouration of the organ suggests retention of ferric pigment (haemosiderine). |
| Hepatic [abscesses – calf](file:///D:\Meu\FMV\Htm\figado\figad_091.htm) | Hepatic abscesses in a calf. Note the large slowly growing abscesses adherent to the liver and involved by a thick pyogenic membrane. Above, to the right, there is a hypertrophic lymph node and, to the left of the organ, a second, smaller abscess, involved by fibrous tissue. This animal had been a victim of omphalophlebitis complicated, at the time of death, by suppurative pneumonia. |
| [Micronodular hepatic cirrhosis - cow](file:///D:\Meu\FMV\Htm\figado\figad_013.htm) | Micronodular hepatic cirrhosis with biliary retention. Additionally to the greenish colour of the liver one can see how the surface of the organ appears irregular due to the presence of small nodules. |
| [Necrobacillosis - sheep](file:///D:\Meu\FMV\Htm\figado\figad_051.htm) | Necrobacillosis. Note the occasionally confluent necrotic foci that appears sharply demarcated from the normal parenchyma. |
| Omphalophlebitic abscesses [- sheep](file:///D:\Meu\FMV\Htm\figado\figad_069.htm) | Omphalophlebitic abscesses in a lamb’s liver. Note the multifocal accumulation of purulent material on the left liver lobes, corresponding to the territories crossed by the venous duct that originates in the umbilical vein. |
| Chronic sclerotizing hepatitis – rabbit | Chronic sclerotizing hepatitis. Note the irregular surface of the liver which is crossed by bands of fibrous tissue. |
| Focal necrotic hepatitis [- microscopy image - rabbit](file:///D:\Meu\FMV\Htm\figado\figad_052.htm) | Focal necrotic hepatitis. Note the numerous necrotic foci consisting in a central necrotic area surrounded by inflammatory cellular response (H&E, 100x). The image on the right shows one of the lesions in greater detail. Note the central accumulation of necrotic material surrounded by mononuclear inflammatory cells (H&E, 400x). |
| Focal necrotic hepatitis [- microscopy image - rabbit](file:///D:\Meu\FMV\Htm\figado\figad_052.htm) | Focal necrotic hepatitis with bacterial clusters present in the centre of the lesion (H&E, 100x). |
| [Ascaridiasis - dog](file:///D:\Meu\FMV\Htm\figado\figad_055.htm) | Distension of the biliary ways in a case of intrabiliary migration of ascarid larvae due to excessive parasitary load. |
| [Ascarids - dog](file:///D:\Meu\FMV\Htm\figado\figad_001.htm) | Ascarid migration within the biliary ways in a case of exceptional parasitic load. |
| [Distomatosis - cow](file:///D:\Meu\FMV\Htm\figado\figad_023.htm) | Lesions of chronic distomatosis with thickening of the biliary ducts which walls appear sclerotic (CB). A few green coloured *Fasciola* have been placed over the liver after being removed from the biliary canals (arrows). The image on the right shows a *Fasciola hepatica*. |
| [Distomatosis - microscopy image - cow](file:///D:\Meu\FMV\Htm\figado\figad_019.htm) | Distomatosis lesions with young migrating parasites. Migration causes traumatic hepatic necrosis (H&E, 40x). |
| [Distomatosis - microscopy image - cow](file:///D:\Meu\FMV\Htm\figado\figad_020.htm) | Biliary duct epithelial hyperplasia and extra-biliary egg-laying by *Fasciola* sp. (H&E, 40x). |
| [Distomatosis - microscopy image - cow](file:///D:\Meu\FMV\Htm\figado\figad_021.htm) | Lesions of chronic distomatosis with an adult parasite inside the lumen of the biliary canal (Masson’s trichrome, 40x). |
| [Distomatosis - microscopy image - cow](file:///D:\Meu\FMV\Htm\figado\figad_022.htm) | Lesions of acute haemorrhagic necrosis due to distomatosis in a tissue already affected by fibrosis due to previous infestations. Note the fibrous hyperplasia of the interstitial tissue and neoformation of biliary canals (H&E, 40x). |
| Echinococcosis - buffalo (Syncerus caffer) | Hydatidosis in a buffalo’s liver. The hepatic parenchyma exhibits numerous clearly visible cysts. |
| [Dicrocoeliosis - goat](file:///D:\Meu\FMV\Htm\figado\figad_094.htm) | Trematodes in the liver of a goat. Cutting the liver exposes several small trematodes (*Dicrocoelium lanceolatum*) logged in the biliary ways. |
| [Echinococcosis - sheep](file:///D:\Meu\FMV\Htm\figado\figad_045.htm) | Hydatic cyst in the liver of a sheep. These cysts contain forms of *Echinococcus polymorphus*, the larval stage of *Echinococcus granulosus*. |
| Echinococcosis scars [- goat](file:///D:\Meu\FMV\Htm\figado\figad_085.htm) | Note the fibrous scars on the surface of the liver corresponding to previously resolved echinococcosis cysts (arrow). |
| [Hepatic coccidiosis - rabbit](file:///D:\Meu\FMV\Htm\figado\figad_065.htm) | Hepatic coccidiosis by *Eimeria stiedae* in a rabbit. The liver is exceptionally hypertrophied and full of small pale nodules corresponding to lesions in the biliary canals, in this exceptionally intense infection. On the right, note the microscopic lesions which consist in epithelial hyperplasia due to parasitic infection (H&E, 40x). |
| [Hepatic coccidiosis - rabbit](file:///D:\Meu\FMV\Htm\figado\figad_065.htm) | Liver with hepatic coccidiosis. Note the yellowish, elongated lesions corresponding to the affected biliary canals. |
| [Histomoniasis - turkey](file:///D:\Meu\FMV\Htm\figado\figad_046.htm) | Hepatic histomoniasis. Note the necrotic foci consisting in concentric circles of alternating pale and haemorrhagic appearance. |
| [Histomoniasis - turkey](file:///D:\Meu\FMV\Htm\figado\figad_046.htm) | Histomoniasis lesions in the caecal tonsils. Note the foci of hepatic necrosis, on the left. |
| Viral hepatitis [- dog](file:///D:\Meu\FMV\Htm\figado\figad_038.htm) | Viral hepatitis. Note the congested appearance of the liver and the rounded edges attributable to moderate hypertrophy. |
| Viral hepatitis [– microscopy image - dog](file:///D:\Meu\FMV\Htm\figado\figad_038.htm) | Viral hepatitis. Note the necrotic hepatocytes and the disrupted trabecular structure. Some cells exhibit intranuclear inclusion bodies (arrows) (H&E, 400x). On the right, the intranuclear inclusion bodies can be seen in greater magnification (arrows) (H&E, 1000x). |
| Viral hepatitis, sequela [- dog](file:///D:\Meu\FMV\Htm\figado\figad_038.htm) | Blue keratitis is one of the known sequelae of viral hepatitis. |
| Viral hepatitis - chicken | Viral hepatitis. Note the hypertrophic hepatic lobes and their variegated colouration. On the right, hepatocytes containing intranuclear viral inclusions can be seen (arrows) (H&E, 100x). |
| [Pericholangitis in hypereosinophilic syndrome - cat](file:///D:\Meu\FMV\Htm\figado\figad_095.htm) | Pericholangitis in the liver of a cat with hypereosinophilic syndrome. Note the portal space infiltration by mononuclear cells and eosinophils. The hepatocytes exhibit cytoplasmic vacuolation and a centrally located nucleus (H&E, 100x e 400x). |
| [Coligranulomatosis - chicken](file:///D:\Meu\FMV\Htm\figado\figad_018.htm) | Coligranulomatosis is an infectious disease caused by a coliform bacillus. The image on the left shows the macroscopic lesions typically found in this disease, consisting in confluent granulomas forming large, yellowish nodules sharply demarcated from the normal parenchyma. Similarly to avian tuberculosis, microscopic lesions consist in nodules of epithelioid and giant cells surrounding a necrotic centre. Acid-fast Ziehl-Neelsen Stain Reaction stains acid-fast *Mycobacterium* bacilli red, allowing distinction between coligranulomatosis and tuberculosis in dubious cases. PAS staining allows identification of fungal hyphae. Both stains produced negative results (PAS, 400x). |
| Trabecular hepatocellular carcinoma [- dog](file:///D:\Meu\FMV\Htm\figado\figad_043.htm)  Carcinoma hepatocelular de padrão trabecular | Trabecular hepatocellular carcinoma. Some of the neoplastic nodules appear necrotic, like the one presented on the right. The kidney, below, exhibits metastases. |
| Trabecular hepatocellular carcinoma [- dog](file:///D:\Meu\FMV\Htm\figado\figad_043.htm) | Trabecular hepatocellular carcinoma in a dog. |
| Avian leukosis - chicken | Hepatic lobe hypertrophy due to infiltration by lymphoid cells in a case of avian leukosis. In avian leukosis there is frequently invasion of several internal organs by neoplastic cells of lymphoblastic nature. See how, in this case, the infiltrating lymphoid cells dislodge and replace the hepatic tissue (H&E, 100x). |
| Hepatocellular carcinoma - duck | Toxin-induced hepatocellular carcinoma in a duck. The hepatic lobes exhibit marked hypertrophy and greenish colouration. |
| Marek’s disease – chicken | Marek’s disease (or avian neurolymphomatosis). Note the markedly hypertrophic hepatic lobes, which exhibit pale spots, and the intestinal nodules (arrows) consisting in infiltration by lymphoid tissue. |
| Marek’s disease – chicken | Small hepatic nodules (arrow) in the liver of a chicken diagnosed with Marek’s disease. |
| Marek’s disease – microscopy image – chicken | Marek’s disease is a lymphoproliferative avian illness similar to avian leukosis. Above, on the left, note how the neoplastic infiltration resulted in the destruction of several hepatocytes (H&E, 100x). In greater magnification (on the right), it can be clearly seen that the neoplastic cells comprise a mixed population of mature lymphocytes and lymphoblasts (H&E, 400x). Below, note the peripheral nerve infiltration by lymphoid neoplastic cells (which is not found in avian leukosis) (H&E, 100x). |
| [Tuberculosis - chicken](file:///D:\Meu\FMV\Htm\figado\figad_059.htm) | Avian tuberculosis. Note the hepatic and intestinal nodules (arrows). |
| Biliary calculi - dog | Biliary calculi in a dog. The gallbladder, here completely open, exhibited lesions of chronic hyperplastic cholecystitis, with the lining completely covered with spiculae of solidified mucous identical to the ones seen in the Petri dish, on the left. The gall bladder also contained dark, small, angular calculi that have been placed to the right of the liver. |
| Chronic cholecystitis [-](file:///D:\Meu\FMV\Htm\figado\figad_017.htm) dog | Chronic cholecystitis with gall bladder (V) repletion with thick mucous material. Note the haemorrhagic appearance of the gall bladder wall. |
| Chronic hyperplastic cholecystitis [-](file:///D:\Meu\FMV\Htm\figado\figad_017.htm) dog | Gall bladder mucosal hyperplasia. Near a pale liver, due to severe anaemia, an exceptionally thickened and dark gall bladder with chronic hyperplastic cholecystitis can be seen. |
| Chronic hyperplastic cholecystitis [-](file:///D:\Meu\FMV\Htm\figado\figad_017.htm) dog | Chronic hyperplastic cholecystitis. The gall bladder is hypertrophied and tense. The organ contained dense, mucous material that forms dark blades (due to impregnation with biliary pigment) arranged perpendicularly to the gall bladder wall. |
| Gall bladder distension - dog | Gall bladder distension in a 13-year-old dog. Despite the distended gall bladder there was no icterus or hepatic dysfunction. |
| Gall bladder leiomyoma – dog | Gall bladder leiomyomas in a 14-year-old Cocker. Note the presence of several firm nodules on the gall bladder wall, located near the lower edge of the image, in central position. Additionally, the pancreas appears multinodular, due to chronic pancreatitis, and the spleen exhibits a haematoma protruding from the splenic surface. |
| [Cholestasis- microscopy image - calf](file:///D:\Meu\FMV\Htm\figado\figad_079.htm) | One of the morphological signs of intra or extra-hepatic cholestasis is the accumulation of biliary pigment (bilirubin) inside dilated biliary canaliculi. The pigment forms yellow-brown ramified plugs designated biliary cylinders (H&E, 400x). On the right, bilirubin deposits in the lumen of the interlobulary biliary ducts are an additional morphological sign of cholestasis. In many situations cholestasis is due to difficulties in biliary flow caused by obstruction of the extra-hepatic biliary ways. The affected animal will most likely exhibit elevated serum bilirubin levels (hyperbilirubinaemia) and a yellowish tissue colouration (icterus), particularly striking in the mucosas, non-pigmented cutaneous areas and sclera (H&E, 400x). |
| Gall bladder polyp - sheep | A large polyp was identified, attached to the mucosa by a pedicle, upon opening of this sheep’s gall bladder. |

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| Concentric left ventricle hypertrophy [- dog](file:///D:\Meu\FMV\Htm\coracao\corac_038.htm) | | Abnormal shape of the heart of a 7-month-old puppy in a case of aortic stenosis. The heart’s elongated shape is a consequence of the marked concentric hypertrophy of the left ventricle. The degree of ventricular thickening is quite evident in the right-side image. Below, a cannula indicates the point of stenosis. | |
| [Cryptococcosis of the heart and other organs - dog](file:///D:\Meu\FMV\Htm\coracao\corac_042.htm) | | Cryptococcosis affecting several organs in a 5-year-old Labrador. Above, on the left, note the small pale nodules corresponding to cryptococcosis granulomas on the cardiac wall; on the right, similar nodules can be seen on both kidneys. Below, on the left, the lingual lesions and, on the right, the invasion of the right retrobulbar tissue by granulomatous inflammation caused by the *Cryptococcus*. The same image also shows the left eye which was not affected. | |
| [Dirofilariasis - dog](file:///D:\Meu\FMV\Htm\coracao\corac_003.htm) | | Dirofilariasis in a dog. Note the large number of parasites that occupied the right ventricle and eventually caused a fatal pulmonary embolism. | |
| [Endocardiosis, grade 1 - dog](file:///D:\Meu\FMV\Htm\coracao\corac_061.htm) | | Grade 1 endocardiosis in an 11-year-old dog. The free edges of the atrioventricular valve cusps appear slightly thickened and irregular. | |
| Eccentric hypertrophy [- dog](file:///D:\Meu\FMV\Htm\coracao\corac_029.htm) | | Eccentric hypertrophy of the left ventricle. Note the enlarged ventricular cavity as well as the thin ventricular wall. | |
| [Haemangiosarcoma – dog](file:///D:\Meu\FMV\Htm\coracao\corac_053.htm) | | Haemangiosarcoma in the heart of a dog. Note the abnormal colour of the right atrial wall which has been invaded by neoplastic tissue. On the right, the subcutaneous tissue of the same animal exhibitis small scattered foci of neoplastic tissue corresponding to metastases of the primary tumour. | |
| [Icterus - dog](file:///D:\Meu\FMV\Htm\coracao\corac_010.htm) | | Yellowish colouration of the aortic wall. The free edge of the mitral valve cusp that can be seen on the right exhibits nodular irregularity corresponding to grade 2 endocardiosis. There is also subendocardial haemorrhage. | |
| Incomplete formation of the pericardium - dog | | Incomplete formation of the pericardium. The interventricular sulcus is particularly marked in this heart due to the pressure exerted by the free edge of the abnormal pericardium (removed). | |
| [Metastatic mammary tumour – bitch](file:///D:\Meu\FMV\Htm\coracao\corac_060.htm) | | Metastasis of a mammary tumour on the atrial wall of a 12-year-old bitch. The primary tumour was a spindle cell carcinoma that also metastasized to the liver and spleen. | |
| Myocardial infarction [- dog](file:///D:\Meu\FMV\Htm\coracao\corac_008.htm) | | Extensive myocardial infarction appearing as a paler area of the cardiac muscle. | |
| Myocardial [lymphoma - dog](file:///D:\Meu\FMV\Htm\coracao\corac_067.htm) | | Metastatic lymphoma on the heart of a fully grown dog. Note the abnormal colouration of the outer right cardiac wall (image on the left). The image on the right displays a section of the heart showing the exceptionally thickened cardiac wall. | |
| [Necrotic endocarditis - dog](file:///D:\Meu\FMV\Htm\coracao\corac_032.htm) | | Necrotic endocarditis in a dog. Note the calcified necrotic foci on the left atrial wall (arrows). | |
| Right ventricle dilation [– dog](file:///D:\Meu\FMV\Htm\coracao\corac_047.htm) | | Marked right ventricle dilation in a 2-year-old Neapolitan Mastiff diagnosed with dirofilariasis. The image on the right shows several forms of *Dirofilaria* inside the right ventricle. | |
| Verrucous endocarditis [- dog](file:///D:\Meu\FMV\Htm\coracao\corac_007.htm) | | Verrucous valvular endocarditis. The initially vegetating lesion became chronic and the masses adhering to the free edges of the cusps have become firmer due to fibrous organization of the exsudates. | |
| Focal myocarditis [- cat](file:///D:\Meu\FMV\Htm\coracao\corac_064.htm) | | Focal myocarditis in a 5-year-old cat diagnosed with non effusive feline infectious peritonitis. The image on the right shows the animal’s kidneys which exhibit severe multifocal cortical response. | |
| Myocardial fibrosis – microscopy image – cat | | Myocardial fibrosis in a cat. Note how the muscle has been replaced by thick fibrous trabeculae. This cat died of heart failure (H&E, 100x). | |
| Endocardial haemorrhage [- horse](file:///D:\Meu\FMV\Htm\coracao\corac_037.htm) | | | | Endocardial and myocardial haemorrhage in a horse that died of asphyxiation. The endocardium has been cut to allow a better visualization of the myocardial lesion. | |
| Right ventricle hypertrophy [- horse](file:///D:\Meu\FMV\Htm\coracao\corac_059.htm) | | | | Right ventricle hypertrophy in a horse with obliterating bronchiolitis. The right ventricle appears larger than the left ventricle (to the right) which maintains its normal dimensions. | |
| Heart compression [- calf](file:///D:\Meu\FMV\Htm\coracao\corac_001.htm) | | | | This heart was lodged outside the thoracic cavity, compressed between the sternum and the skin. | |
| [Lipofuscins – microscopy image - cow](file:///D:\Meu\FMV\Htm\coracao\corac_011.htm) | | | | Lipofuscins are intracellular lipid-rich pigments rich that represent accumulation of undigested fragments of the plasma membrane in autophagic vacuoles. They are considered a normal age-related finding in several cellular types and are usually abundant in the heart and liver of older animals. Lipofuscins can also be found in animals suffering from wasting diseases, causing the organs to exhibit a brownish colouration that is often associated with cardiac and/or hepatic atrophy (brown atrophy of the heart and liver). In the heart, lipofuscins appear as brownish cytoplasmic granules located around the poles of myocytic nuclei (H&E, 400x). | |
| Purulent endocarditis - cow | | | | Valvular endocarditis and purulent myocarditis, Note the large thrombi that have formed around the free edges of the valves and the focal purulent inflammation of the cardiac wall. | |
| Trabecular vegetative endocarditis - cow | | | | Trabecular vegetative endocarditis. Note the formation of thrombi that appear adhered to the [*chordae tendineae*](http://en.wikipedia.org/wiki/Chordae_tendineae). | |
| [Tricuspid endocarditis – cow](file:///D:\Meu\FMV\Htm\coracao\corac_050.htm) | | | | Exuberant valvular endocarditis in a cow’s tricuspid valve. The large thrombi that appear adhered to the cusps block the blood flow between the right atrium and the right ventricle. On the right, note that the left heart chambers exhibit milder lesions of mitral valve endocarditis. | |
| Valvular haematomas - calf | | | | Valvular haematomas in the heart of a calf. Note the well-delimited cystic lesions corresponding to blood accumulation in cavities surrounded by a defined wall. | |
| Valvular vegetative endocarditis – cow | | | | Valvular vegetative endocarditis. Note the formation of thrombi that appear adherent to the free edges of the mitral cusps. | |
| Blue tongue - sheep | | | | Blue tongue lesions in a sheep’s heart. Note the small haemorrhagic foci on the aortic and cardiac wall (see oral lesions in the digestive tract section). Small haemorrhagic foci could also be seen in the pulmonary artery. | |
| Serosal atrophy of the coronary sulcus - goat | | | | Serosal fat atrophy in the coronary sulcus of a goat diagnosed with severe malnutrition. | |
| Tiger heart - kid | | | | Myocardial necrosis in a case of foot and mouth disease. This condition is designated “tiger heart disease” due to the overall appearance of the lesions. | |
| Valvular vegetative endocarditis – pig | | | | Valvular vegetative endocarditis in a pig’s heart. | |
| [Visceral gout- turkey](file:///D:\Meu\FMV\Htm\coracao\corac_009.htm) | | | | Visceral gout is a result of the deposition of urates (insoluble crystalline uric acid salts) in several organs. In this case, note the deposition of salts on the pericardium, staining it bright white. | |
| Endocardial haemorrhages [- okapi (Okapia johnstoni)](file:///D:\Meu\FMV\Htm\coracao\corac_056.htm) | | | | Endocardial haemorrhages in an Okapi. Cause of death was most likely related to ingestion of toxic plants. | |
| Acute pericarditis – cat | | | | Acute pericarditis and focal pulmonary congestion in a fully grown cat that died of feline leukaemia. | |
| Fibrinous pericarditis [- cat](file:///D:\Meu\FMV\Htm\coracao\corac_062.htm) | | | | Fibrinous pericarditis in a 14-year-old cat. The cardiac wall is covered with solidified fibrinous exsudate. | |
| Chronic villous pericarditis [- cow](file:///D:\Meu\FMV\Htm\coracao\corac_020.htm) | | | Chronic villous pericarditis of traumatic origin. The pericardial surface appears irregular and dark, due to exsudate organization and impregnation with haematic pigments, respectively. | | | |
| [Pyopericardium - cow](file:///D:\Meu\FMV\Htm\coracao\corac_025.htm) | | Pyopericardium consists in accumulation of pus within the pericardial sac. The image on the right shows the pus contained in the pericardium. | | | | |
| Traumatic [reticulopericarditis - cow](file:///D:\Meu\FMV\Htm\coracao\corac_013.htm) | | Traumatic fibrinous reticulopericarditis. Note the exceptional accumulation of fibrinous exsudate between the pericardium and the cardiac wall. The exsudate is suffering organization. The cardiac wall appears very irregular. | | | | |
| Chronic villous pericarditis - pig | | Chronic villous pericarditis. The cardiac surface appears irregular due to fibrous organization of exsudates. | | | | |
| Chronic villous pericarditis - pig | | Exuberant chronic villous pericarditis. The cardiac surface appears irregular due to organization of inflammatory exsudates. | | | | |
| [Fibrinous pericarditis - pig](file:///D:\Meu\FMV\Htm\coracao\corac_015.htm) | | Pericardial thickening due to fibrinous inflammation. On the right, note the formation of synechiae, adherence points between the pericardial layers. | | | | |
| Fibrinous pericarditis [- pig](file:///D:\Meu\FMV\Htm\coracao\corac_016.htm) | | Fibrinous pericarditis. Note the formation of synechiae. | | | | |
| [Fibrinous pericarditis - pig](file:///D:\Meu\FMV\Htm\coracao\corac_017.htm) | | Serofibrinous pericarditis. Note the gelatinous yellowish exsudate that has accumulated within the pericardial sac. Serosanguinolent exsudate has also accumulated in the thoracic cavity. | | | | |
| [Pyopericardium –](file:///D:\Meu\FMV\Htm\coracao\corac_027.htm) pig | | Accumulation of pus within the pericardium (pyopericardium). Note how the pericardium exhibits striations caused by the strong pressure exerted by the dilated pericardium against the ribcage. | | | | |
| Sero-haemorrhagic pericarditis [- pig](file:///D:\Meu\FMV\Htm\coracao\corac_019.htm) | | Sero-haemorrhagic pericarditis in a case of mulberry heart disease. Note the presence of blood in the pericardial sac and the adherences between the two pericardial layers. The myocardium appears congested. | | | | |
| Suppurative pericarditis - pig | | Suppurative pericarditis. The pericardium appears thickened. On the right, note the purulent material that flows from the pericardial sac. | | | | |
| [Pericarditis – crested porcupine (Hystrix cristata)](file:///D:\Meu\FMV\Htm\coracao\corac_049.htm) | | Pericarditis in a crested porcupine. The exceptionally thickened pericardium has been partially cut to reveal the heart which vessels appear particularly evident. Note the superficial hepatic irregularity (capsular fibrosis) and the marked gastric dilation. | | | | |
| Aortic body tumour - dog | | Note the presence of a large aortic body tumour inserted in the base of the heart (cut sagitally). The central area exhibits necrosis corresponding to the dark depression. A small metastasis can be seen on the accessory pulmonary lobe. | | | | |
| Intimal bodies [- dog](file:///D:\Meu\FMV\Htm\coracao\corac_057.htm) | | Intimal bodies in an artery. Note the regularly spaced foci of subendothelial calcification. This type of calcification does not interfere with the normal arterial functioning. | | | | |
| [Intrapulmonary thrombi – dog](file:///D:\Meu\FMV\Htm\coracao\corac_066.htm) | | Several thrombi in branches of the pulmonary artery of a 10-year-old Siberian Husky. The top arrow points to a large branch of the pulmonary artery which has been cut to reveal a friable white thrombus. The bottom arrow indicates a smaller vessel obstructed by a dark-red thrombus. The affected pulmonary lobes exhibit atelectasis. | | | | |
| Patent arterial duct[- dog](file:///D:\Meu\FMV\Htm\coracao\corac_023.htm) | | Patent arterial duct in a dog. The straws have been inserted in different ventricles coming together in the aorta. | | | | |
| Pulmonary thrombosis [- dog](file:///D:\Meu\FMV\Htm\coracao\corac_030.htm) | | Thrombus obstructing the pulmonary artery of a 6-year-old Fox Terrier. The animal died after 6 days of progressive prostration. | | | | |
| Pulmonary thrombosis [– microscopy image - dog](file:///D:\Meu\FMV\Htm\coracao\corac_030.htm) | | The image shows a thrombus that almost completely obstructs the lumen of a branch of the pulmonary artery. This pinkish thrombus is mainly composed of aggregated platelets and fibrin. In animals, inflammation is the main cause of pulmonary thrombosis (H&E, 40x). | | | | |
| Parasitic granulomas [- buffalo (Syncerus caffer)](file:///D:\Meu\FMV\Htm\coracao\corac_034.htm) | | Parasitic granulomas due to infection with *Elaeophora poeli* on a buffalo’s aortic wall. | | | | |
| Artery calcification [– rabbit](file:///D:\Meu\FMV\Htm\coracao\corac_012.htm) | | Artery calcification in a rabbit. All of the animal’s arteries are completely calcified and transformed into rigid white tubes. | | | | |

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| [Gumboro disease - chicken](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_001.htm) | Hypertrophied bursa of Fabricius (BF) in a case of Gumboro disease. |
| [Gumboro disease - chicken](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_002.htm) | Bursa of Fabricius in longitudinal cut exhibiting markedly hypertrophied internal pleats in a case of Gumboro disease. |
| [Thymus atrophy – dog](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_067.htm) | Thymus atrophy in an 8-week-old bitch diagnosed with canine distemper. There is evident loss of solid tissue and interstitial oedema. Note how the lymphoid tissue is reduced to the red-coloured areas. |
| Thymus atrophy – cat | Thymus atrophy in a kitten. The thymus appears small and rounded, in the cranial mediastinum. |
| [Amyloidosis and focal necrosis – dog](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_066.htm) | Necrotic foci in the spleen of a 3-year-old Rottweiler in a case of metastatic histiocytic sarcoma. Additionally to focal necrosis, the spleen exhibited extensive deposits of hyaline material, clearly visible in the right-side image (H&E, 100x). Staining with Congo red revealed the substance to be amyloid. |
| Anthracosis – dog | Anthracosis of a lymph node located on the pulmonary hilum. Note the blackish areas in the lymph node (arrow). |
| [Mast cell tumour - dog](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_055.htm) | Scrotal lymph node hypertrophy due to metastization of a mast cell tumour. The primary tumour was located on the left thigh. |
| Pelvic lymphatic vessel distension - dog | Distension of the pelvic lymphatic vessels in a case of canine multicentric malignant lymphoma. Note the splenic hypertrophy and distension of the inguinal lymphatic vessels (short arrow). The vessels have become distended as a result of difficulties in lymph circulation in the vessels located around the bladder (long arrow), secondary to hypertrophy of the inguinal lymph nodes. |
| [Reactive hyperplasia – dog](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_058.htm) | Reactive hyperplasia of the prescapular (left) and axillary (right) lymph nodes in a 3-year-old German Shepherd. Between the lymph nodes, from bottom to top, a lymphatic vessel with focal dilations (rosary), a blood vessel and a nerve can be seen. |
| Sidero-calcic impregnation - dog | Sidero-calcic impregnation in the spleen of a dog. The plaques that can be seen on the capsule correspond to areas of calcification and impregnation with haemosiderine. This is typically a condition of older animals and has no functional consequences. |
| Spleen atrophy [- dog](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_051.htm) | Marked splenic atrophy (arrow) in a dog due to fibrosis. The organ appeared as a 0,5 cm x 4 cm cylinder. |
| Spleen hypertrophy - dog | Splenic hypertrophy in a case of lymphoma. The organ has become particularly friable. |
| Spleen hypertrophy – dog | Marked splenic hypertrophy in a case of haemolytic icterus. Note the yellowish colouration of the subcutaneous adipose tissue. The spleen appears dark-red, almost black, and friable. |
| Spleen torsion [- dog](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_065.htm) | Splenic torsion in a Great Dane. The spleen was completely enclosed in omentum. The organ may have suffered right dislocation due to temporary gastric dilation. Although the gastric dilation was resolved, the omentum did not allow the spleen to resume its normal position. The animal died as a result of internal haemorrhage that caused approximately 3 liters of blood to accumulate in the peritoneal cavity. After removing the omentum, note the exceptional splenic infarction as well as the various points of capsule rupture (image on the right). |
| Splenic haematoma [- dog](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_012.htm) | Splenic haematoma in a dog. Note how the haematoma protrudes from the surface of the splenic capsule. The surface of the haematoma is smooth and brilliant. |
| Splenic haematomas [- dog](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_012.htm) | The spleen is hypertrophied due to the presence of large haematomas that deform its surface. The haematoma, which cut surface is seen in the right-side image, exhibits pale areas, where cell retention in the fibrin nets was less intense, and other dark-red (nearly black) territories where there is higher concentration of blood cells. |
| Splenic lymphoma - dog | Marked splenic hypertrophy in a case of lymphoma. Differential diagnosis in these cases should include other tumours and haematomas. |
| Splenic thrombi – dog | Foci of splenic necrosis in an 8-year old dog due to the presence of numerous thrombi. |
| [Calcinosis circunscripta - cat](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_052.htm) | *Calcinosis circunscripta* forming large prescapular masses in a cat diagnosed with systemic disruption of calcium metabolism. |
| Lymphatic cysts [- cow](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_049.htm) | Note the lymph retention and cystic transformation of the lymph node, possibly due to difficulties in lymphatic drainage. Below, on the right, a second, normal, lymph node can be seen in longitudinal cut. |
| African Swine Fever [- pig](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_047.htm) | Haemorrhagic mesenteric lymphadenitis in a case of african swine fever. On the left, note the strongly congested liver and below, to the right, the bladder, with petechiae and haemorrhagic foci on the bladder wall. |
| African Swine Fever [- pig](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_047.htm) | Haemorrhagic submaxillary lymphadenitis in a case of african swine fever. The lymph node is hypertrophied and exhibits a dark-red, almost black, cut surface. |
| Lymph node hypertrophy [- pig](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_010.htm) | Reactive hypertrophy of the mesenteric lymph nodes (arrows) in a case of *E. coli* enteritis. Note the congestion of the small blood vessels and the dark-pink colour of the intestinal wall. |
| Purulent [adenitis - rabbit](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_011.htm) | Purulent *Pasteurella* sp adenitis in a rabbit’s axillary lymph nodes. One of the exceptionally hypertrophied lymph nodes has been cut, allowing the creamy, thick pus that flows from the organ to be seen. |
| [Cutaneous](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_025.htm) lymphoma - dog | Mandibular lymph node hypertrophy in a case of T-cell cutaneous lymphoma (*mycosis fungoides*). The image on the right shows a cutaneous plaque corresponding to infiltration by the tumour cells. The fine black dots are flea faeces. Below, on the left, are several small, alopecic cutaneous plaques near the nose. Below, on the right, an image illustrating gingival congestion and hypertrophy is displayed. |
| [Cutaneous](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_025.htm) lymphoma, spleen - dog | Moderate splenic hypertrophy and surface irregularity in a case of T-cell lymphoma (*mycosis fungoides*). |
| [Lymphoma - dog](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_019.htm) | Marked intra-abdominal lymph node hypertrophy in a case of lymphoma. Note the iliac lymph nodes, located between the bladder and the caudal pole of the kidney. The image on the right shows the hypertrophied cervical and axillary lymph nodes. |
| [Lymphoma - dog](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_019.htm) | Hypertrophied cervical and prescapular lymph nodes in a case of lymphoma. In the right-side image, taken upon necropsy, the tissues have been dissected in order to allow a better visualization of the hypertrophied lymph nodes. |
| [Lymphoma - dog](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_019.htm) | Tracheobronchial lymph node hypertrophy in a case of lymphoma. |
| Mediastinal lymphoma - dog | Mediastinal lymphoma in a dog. Note the large multinodular mass (limited by the arrows) that occupies the cranial mediastinum. Additionally, the spleen exhibits marked hypertrophy. |
| Metastatic histiocytic sarcoma – dog | Dissemination of a histiocytic sarcoma in a 12-year-old Rottweiler. The neoplastic splenic masses form nodules of various sizes. The liver, on the left in the image, also exhibits scattered nodules. |
| Metastatic histiocytic sarcoma – dog | Dissemination of a histiocytic sarcoma to a dog’s spleen and lung. The pulmonary metastases (right-side image) appear as small, dark-red nodules whereas the splenic metastases (left-side) exhibit varying colours and dimensions. |
| [Lymphoma - cat](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_030.htm) | Cervical and prescapular lymph node hypertrophy in a case of feline lymphoma. |
| [Lymphoma - cat](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_030.htm) | Marked mesenteric lymph node hypertrophy (LM) and hepatic nodules in a case of feline lymphoma. |
| [Lymphoma - cat](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_030.htm) | Neoplastic infiltration of the renal cortex by lymphoid cells in a case of feline lymphoma. The cortex appears pale and exhibits an irregular corticomedullary limit. |
| Enzootic bovine leukosis - cow | Extraordinary hypertrophy of the precrural lymph node here marked in white paint on the skin, in a case of enzootic bovine leukosis. The skin has been cut in the right-side image, allowing direct visualization of said lymph node. |
| Enzootic bovine leukosis - cow | Hypertrophy of the submandibular, parotid and prescapular lymph nodes, here marked in white paint on the skin, in a case of enzootic bovine leukosis. The skin has been cut in the right-side image, allowing direct visualization of the lymph nodes. |
| Enzootic bovine leukosis - cow | Superficial lymph node hypertrophy. A lymph node located over the scapula is particularly visible, here marked in the red paint on the skin, in a case of enzootic bovine leukosis. |
| Enzootic bovine leukosis - cow | Marked prescapular lymph node hyperplasia in a case of enzootic bovine leukosis. Note the haemorrhagic foci on the cut surface of the organ, which was made visible by skinning and dismembering the cadaver. |
| Enzootic bovine leukosis - cow | Marked sublombar and iliac lymph node hypertrophy in a case of enzootic bovine leukosis. |
| Enzootic bovine leukosis - cow | Hypertrophy of the mesenteric lymph nodes which are shown after longitudinal cut, in a case of enzootic bovine leukosis. |
| Enzootic bovine leukosis - cow | Tracheobronchial lymph node hypertrophy in a case of enzootic bovine leukosis. |
| Enzootic bovine leukosis - cow | Renal lymph node hypertrophy in a case of enzootic bovine leukosis. |
| Enzootic bovine leukosis - cow | Marked renal hypertrophy and deformation of the kidney in a case of enzootic bovine leukosis. Note how the renal structure has been invaded by pale tissue corresponding to infiltration by neoplastic lymphoid cells. |
| Enzootic bovine leukosis - cow | Hypertrophied lymph nodes in a case of enzootic bovine leukosis. The cut surface appears lardaceous and exhibits small haemorrhagic foci. |
| [Leukosis - chicken](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_028.htm) | Marked hepatic hypertrophy in a case of avian leukosis. Additionally to enlargement, multiple yellowish nodular lesions, corresponding to infiltration by lymphoid cells, can be seen. On the right-side image, the liver has been displaced, making it possible to see an hypertrophied spleen also exhibiting several pale nodular lesions (arrow). |
| [Marek’s disease - chicken](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_004.htm) | Ovarian hypertrophy due to infiltration by lymphoid cells (arrow) in a case of Marek’s disease. |
| [Marek’s disease - chicken](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_004.htm) | Hind limb paralysis secondary to sciatic nerve injury in a case of Marek’s disease. |
| [Marek’s disease - chicken](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_004.htm) | Marked hypertrophy of the liver which exhibits pale nodules in a case of Marek’s disease. |
| [Marek’s disease - chicken](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_004.htm) | Note how the right kidney (RD) is extraordinarily hypertrophied, pale and irregular in this case of Marek’s disease. The left kidney exhibits several small pale nodules on all renal lobes. |
| [Marek’s disease - chicken](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_004.htm) | Feather follicle hypertrophy in a case of Marek’s disease. The hypertrophied follicles are particularly evident on the skin covering the limbs. |
| [Marek’s disease - chicken](file:///D:\Meu\FMV\Htm\orglinfo\orglinfo_004.htm) | Marked splenic hypertrophy in a chicken diagnosed with Marek’s disease. |

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| Corneal dermoid - dog | Corneal-conjunctival dermoid or choristoma in a 1-year-old female Pekingese. On the right, a microscopy image of the same dermoid after surgical removal is displayed. A dermoid cyst corresponds to the presence of histologically normal skin in an abnormal location. |
| Eyelid dermoid cyst - dog | Dermoid cyst on the lateral canthus of the palpebral aperture in a 6-month-old, male Rottweiler. A dermoid cyst corresponds to the presence of histologically normal skin in an abnormal location. |
| [Heterochromia - dog](file:///D:\Meu\FMV\Htm\Olho\olho_015.htm) | Iridal heterochromia in a 1-year old, female, mixed-breed dog. This dyspigmentation of the iris is without clinical expression. |
| Uveal cyst [- dog](file:///D:\Meu\FMV\Htm\Olho\olho_052.htm) | Uveal cyst in a 5-year-old, male Labrador Retriever. Differential diagnosis between a uveal cyst and a melanoma is achieved through transillumination. A uveal cyst will become transilluminated, since it consists in an aqueous humour-filled vesicle, while a melanoma will not. |
| [Heterochromia –](file:///D:\Meu\FMV\Htm\Olho\olho_048.htm) cat | Congenital iridal heterochromia, which translates into the presence of two different colours in the same iris of this 1-year-old, female, Domestic European cat. |
| [Blepharitis – dog](file:///D:\Meu\FMV\Htm\Olho\olho_033.htm) | Blepharitis with periocular alopecia and purulent conjunctivitis secondary to atopic dermatitis and keratoconjunctivitis sicca in a 6-year-old, female Cocker Spaniel. |
| [Blepharitis and vitiligo - dog](file:///D:\Meu\FMV\Htm\Olho\olho_034.htm) | Blepharitis with eyelid dyspigmentation, intense epiphora and secondary keratitis secondary to self-trauma due to pruritus in a 5-year-old Poodle. |
| Blue keratitis – dog | Blue keratitis is one of the known sequelae of viral hepatitis. |
| Corneal ulcer [- dog](file:///D:\Meu\FMV\Htm\Olho\olho_030.htm) | Perfectly circular, central corneal ulcer identified in a canine cadaver. Post mortem dehydration justifies the dull appearance of the cornea. |
| [Fasciitis nodularis – dog](file:///D:\Meu\FMV\Htm\Olho\olho_009.htm) | Fasciitis nodularis on the right side of the face of a 5-year-old female Epagneul Breton cross-breed. The face appears deformed ventrally to the zygomatic arch, and the nictitating membrane has prolapsed as result of the inflammation associated with this condition. Diagnosis was obtained through biopsy and histopathological analysis. |
| Lower eyelid chalazion - dog | Chalazion on the left lower eyelid of a 9-year-old male dog. This consists in an inflammatory lesion of the meibomian gland, associated with secretion accumulation. |
| [Meibomitis – dog](file:///D:\Meu\FMV\Htm\Olho\olho_036.htm) | Multifocal meibomitis on the inner surface of the upper lid margin in a 5-year-old, female Poodle. Additionally to these yellow-coloured lesions, lesions of corneal dystrophy corresponding to the white central spot can be seen. |
| Nodular granulomatous episcleritis - dog | Bilateral nodular granulomatous episcleritis in a 1-year-old mixed-breed dog. Here, the right eye exhibits perilesional corneal oedema, a firm elevated episclera, and congestion of the conjunctival and episcleral blood vessels. Diagnosis was obtained through biopsy and histopathological analysis. |
| Uveodermatologic syndrome - dog | Uveodermatologic syndrome in a 4-year-old, female Samoyed. Note the uveitis (miosis, iritis and diffuse corneal oedema) and vitiligo (palpebral dyspigmentation). The image on the right shows additional lesions of nasal dyspigmentation and mucosal ulceration. |
| [Bilateral buphtalmos – cat](file:///D:\Meu\FMV\Htm\Olho\olho_027.htm) | Bilateral buphtalmos in a 6-month-old, female Domestic European cat. The right eye (to the left in the image) exhibits a perforating ulcer, while the left eye exhibits keratitis. These lesions are most likely secondary to a congenital bilateral glaucoma and result in irreversible bilateral loss of vision. |
| Corneal sequestrum - cat | Corneal sequestrum in a 2-year-old Persian queen. Note the black plaque of necrotic tissue with perilesional oedema and superficial corneal neovascularisation. |
| [Endophthalmitis - cat](file:///D:\Meu\FMV\Htm\Olho\olho_046.htm) | Endophthalmitis in a 9-year-old, male Siamese cat. The lesion, evident on the right eye, corresponds to a generalized infection of the ocular globe with corneal perforation and extrusion of the lens, which appears as a pale sphere in the palpebral aperture. |
| [Hyphema - cat](file:///D:\Meu\FMV\Htm\Olho\olho_051.htm) | Hyphema of the left eye in a 6-year-old, male cat that had been run over by a car. |
| [Hyphema – cat](file:///D:\Meu\FMV\Htm\Olho\olho_012.htm) | Hyphema in an 18-year-old, male Domestic European cat. In this particular case, the blood accumulation in the anterior chamber was secondary to arterial hypertension due to chronic renal failure. |
| Third eyelid melanoma – dog | Third eyelid melanoma in a 12-year-old, mixed-breed bitch. Diagnosis was obtained after surgical removal and histopathological analysis of the nictitating membrane. |
| Ciliary body adenocarcinoma – dog | Ciliary body adenocarcinoma in a 5-year-old, male Fox Terrier. The tumour is just visible through the pupillary opening. Diagnosis was obtained after enucleation and histopathological analysis. |
| Epibulbar [melanoma – dog](file:///D:\Meu\FMV\Htm\Olho\olho_011.htm) | Epibulbar melanoma in a 5-year-old, male Rottweiler. Diagnosis was obtained after surgical removal and histopathological analysis. |
| Eyelid [haemangiosarcoma - dog](file:///D:\Meu\FMV\Htm\Olho\olho_047.htm) | Haemangiosarcoma on the upper eyelid of a 14-year-old mixed-breed. Diagnosis was obtained after surgical removal and histopathological analysis. |
| [Fibrosarcoma (recurrence) - dog](file:///D:\Meu\FMV\Htm\Olho\olho_041.htm) | Recurrence of an ocular fibrosarcoma, 8 months after exenteration, in a 13-year-old, male Doberman. Note the cutaneous scar of the previous surgery and the swelling in the orbital region. On the right, a dorsoventral view is presented. |
| Histiocytoma – dog | Histiocytoma in the nictitating membrane of a 1-year-old mixed-breed dog. This type of neoplastic lesion has a good prognosis in young dogs and usually recedes in the absence of medical or surgical treatment. Diagnosis was obtained after cytological (fine needle aspiration) and histopathological analysis. |
| Intraocular [melanoma – dog](file:///D:\Meu\FMV\Htm\Olho\olho_020.htm) | Intraocular melanoma in the right eye of an 11-year-old, male Yorkshire Terrier. On the right, after surgical removal, the eye is completely invaded by the highly pigmented neoplastic mass. Diagnosis was obtained after histopathological analysis. |
| Intraocular [melanoma – dog](file:///D:\Meu\FMV\Htm\Olho\olho_020.htm) | Intraocular melanoma in a 9-year-old, male Miniature Schnauzer. Note how the cornea has been invaded by granulation tissue and neovessels, and how all tissues are heavily pigmented. |
| Iris melanoma [- dog](file:///D:\Meu\FMV\Htm\Olho\olho_032.htm) | Iris melanoma in a Rottweiler. The black asterisk identifies the anterior chamber, which appears deformed by the tumour (red asterisks). The same area is signalled in the right-side image with black asterisks, denoting how the neoplasia was growing towards the posterior chamber. The malignant nature of the tumour became quite evident after distant metastization to a limb. Below, a histology image shows the microscopic characteristics of the neoplasia, with prominent fusiform cells containing little or no melanic pigment. Several mitoses can also be seen (H&E, 100x). |
| Meibomian adenoma - dog | Meibomian adenoma in a 14-year-old, female Cocker Spaniel. This consists in a verrucous lesion located on the palpebral border that usually causes irritation and secondary keratitis, and is the most common tumour identified on canine eyelids. Diagnosis was obtained after surgical removal and histopathological analysis. |
| Meibomian adenoma - dog | Meibomian adenoma in an 11-year-old mixed-breed bitch. This consists in a verrucous lesion located on the palpebral border that usually causes irritation and secondary keratitis, and is the most common tumour identified on canine eyelids. Diagnosis was obtained after surgical removal and histopathological analysis. |
| Meibomian adenoma - dog | Meibomian adenoma on the upper eyelid of a 9-year-old mixed-breed bitch. This consists in a verrucous lesion located on the palpebral border which usually causes irritation and secondary keratitis, and is the most common tumour identified on canine eyelids. Diagnosis was obtained after surgical removal and histopathological analysis. |
| Orbital fibrosarcoma – dog | Orbital fibrosarcoma in a 1-year-old, male Labrador Retriever. Diagnosis was obtained after enucleation and histopathological analysis. On the right, the tumour can be seen after exenteration, which consists in the enucleation of the ocular globe and complete removal of al orbital contents. The ocular globe exhibits phthisis bulbi (atrophy) due to the strong compression exerted by the neoplastic tissues on the orbital wall. |
| Orbital [tumour - dog](file:///D:\Meu\FMV\Htm\Olho\olho_039.htm) | Orbital tumour in an 11-year-old, male Estrela Mountain Dog. Note the orbital swelling, the protruding nictitating membrane, the craniodorsal dislocation of the ocular globe, the conjunctival congestion and the presence of purulent ocular discharge. |
| Retrobulbar carcinoma - dog | Right unilateral exophthalmia due to a retrobulbar tumour, in a 9-year-old mixed-breed bitch. After exenteration, the ocular globe can be seen as well as the large, firm, lardaceous retrobulbar mass. |
| Supraorbital [mast cell tumour – dog](file:///D:\Meu\FMV\Htm\Olho\olho_035.htm) | Mast cell tumour with cutaneous ulceration of the supraorbital region, in a 10-year-old, male Labrador Retriever. The lesion had first been signalled 6 months earlier. Diagnosis was obtained after fine needle aspiration cytology with the animal under general anaesthesia and after a Computerized Axial Tomography (CAT) scan. |
| Diffuse iris melanoma - cat | Diffuse iris melanoma in a cat. Note the intense pigmentation of this originally green iris. On the right, the iris is thickened due to invasion by neoplastic cells containing melanic pigment as well as by other, non pigmented, neoplastic cells (H&E, 40x). |
| Eyelid [mast cell tumour - cat](file:///D:\Meu\FMV\Htm\Olho\olho_040.htm) | Mast cell tumour on the right upper eyelid of a 13-year-old, female Domestic European cat. |
| Facial [carcinoma - cat](file:///D:\Meu\FMV\Htm\Olho\olho_010.htm) | Facial carcinoma causing deformation of the palpebral aperture and secondary bilateral keratitis in an 11-year-old male cat. Diagnosis was obtained after biopsy and histopathological analysis. |
| [Haemangioma – cat](file:///D:\Meu\FMV\Htm\Olho\olho_016.htm) | Haemangioma on the stop of a 4-year-old, female Siamese cat. Diagnosis was obtained after surgical removal and histopathological analysis. |
| Metastatic mammary carcinoma - cat | Metastasis of mammary carcinoma in the left anterior and posterior chambers of a 14-year-old queen. The animal had already undergone complete unilateral mastectomy. Diagnosis was obtained through fine needle aspiration cytology following anterior chamber paracentesis and later confirmed after enucleation. |
| Orbital tumour - cat | Orbital tumour deforming the face and palpebral fissure in a 13-year-old male cat. On the right, fine needle aspiration cytology is being performed with the animal under general anaesthesia and after a Computerized Axial Tomography (CAT) scan. |
| Squamous cell carcinoma – cat | Severe form of squamous cells carcinoma in a white queen. Note how the right eyelid and both ears have been completely destroyed. |
| Squamous cell carcinoma – cat | Squamous cell carcinoma in a 13-year-old male Domestic European cat. Note the proliferation of neoplastic tissue over the bulbar conjunctiva and the nictitating membrane. Diagnosis was obtained through biopsy and histopathological analysis. |
| Squamous cell carcinoma – cat | Squamous cell carcinoma affecting both upper and lower left eyelids in a 12-year-old Domestic European queen. |
| Squamous cell carcinoma – cat | Squamous cell carcinoma affecting the orbit, both eyelids and the periocular region in a 13-year-old Domestic European queen. |
| Uveal melanocytoma - cat | Uveal melanocytoma in a male 7-year-old Domestic European cat. Note the brown spots corresponding to melanocytic accumulation in an initially green iris. |

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| Bone calluses - dog | Bone calluses on the ribs due to fracture consolidation. |
| Hypertrophic pulmonary osteoarthropathy - dog | Thickening of the long bones due to hypertrophic pulmonary osteoarthropathy. This animal has obvious locomotion difficulties. Local limb temperature was increased due to inflammation of the skin covering the affected bones. Limb thickening was partially due to subcutaneous oedema. The right-side image shows a large primitive tumour (T) of the lung that was responsible for the hypertrophic pulmonary osteoarthropathy. The small nodules are metastases of the primitive tumour. Below, note the periosteal irregularity and thickening of the humerus, tibia and fibula due to ossifying periostitis. |
| [Osteosarcoma - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_014.htm) | Osteosarcoma of the left ulna in a dog. There is evident deformation of the bone due to development of neoplastic tissue. On the right, it is possible to see metastases on the liver, spleen and left axillary lymph node (arrows). Below, similar metastatic nodules can be seen on the lung (arrows). |
| Abnormal cranial thickening - cat | Abnormal cranial thickening in a 4-year-old cat caused by a squamous cell carcinoma that developed in the right auditory canal. The image on the right shows the thickening of the temporal bone. |
| Fibrous osteodystrophy - cat | Nutritional fibrous osteodystrophy resulting in abnormal flexibility of the bone. Fractures are frequent and form without separation of the fractured edges. |
| [Osteoporosis - cat](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_025.htm) | Marked femoral osteoporosis in a case of disruption of calcium metabolism in a cat. |
| Mandibular actinomycosis - cow | Mandibular actinomycosis. Lesions are those of rarefactive osteomyelitis, due to the evident loss of bone tissue, and to ossifying periostitis, that leads to perimetral deformation of the bone which is increased in diameter. |
| [Polydactylia - kid](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_034.htm) | Metatarsal and phalangeal duplication in a 23-day-old kid. The same animal was diagnosed with fibrinous arthritis on the left humerus-radius-ulnar joint, evident on the right-side image, and fibrinous pneumonia, pleuritis and pericarditis. Additional to the polydactylia, the ossification centres of the left tibia have failed to fuse (image below). |
| Vertebral [osteomyelitis - pig](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_032.htm) | Vertebral [osteomyelitis in a pig](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_032.htm) affected by tail necrosis secondary to cannibalism. |
| Bone callus [- common marmoset (Callithrix jacchus)](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_038.htm) | Bone callus on the right tibia in a common marmoset diagnosed with chronic enteritis and colitis. This animal exhibited several fractures, indicating severe bone fragility possibly due to intestinal malabsorption. |
| [Fibrous osteodystrophy– microscopy image - lion tamarin (Leontopithecus sp.)](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_019.htm) | Fibrous osteodystrophy and rachitism. Note the irregularity of the cartilage in the endochondral ossification zone. Hypertrophic cartilage cells can be seen, arranged in irregularly thick strands that sometimes ramify or form plaques that plunge towards the medullary cavity. Calcified bone is reduced to rare rather thin areas in the cortex. |
| Chronic arthritis - dog | Chronic arthritis with perimetral irregularity of the joint cartilage, which also exhibits superficial irregularity. |
| Hansen type I and II disc herniations - dog | Multiple intervertebral disc herniations corresponding to the lumbar vertebrae. The herniations on the second, third and fifth discs from the left are Hansen type I (dorsal limit of the fibrous ring ruptures and the nucleus pulposus protrudes in the pavement of the rachidian canal), while the herniations on the first and fourth disc are Hansen type II (the intervertebral disc is dorsally deformed but the fibrous ring doesn’t rupture). The disc on the right of the image is normal. The right-side image corresponds to an enlarged image of the first three discs. Below, Hansen type I (middle) and type II (left) herniations can be clearly seen, in contrast with the normal intervertebral disc on the right. |
| Hansen type I disc herniation - dog | Intervertebral disc degeneration, leading to Hansen type I disc herniation. |
| Hansen type I disc herniation - dog | Hansen type I disc herniation in a dog. Degeneration of the nucleus pulposus resulted in loss of material into the vertebral canal through the fibrous ring’s rupture point, on the dorsal surface. The reddish colour may be due to haemorrhagic lesions and fixation of haematic pigments. |
| Hansen type I disc herniation - dog | Hansen type I disc herniation on a lumbar intervertebral disc (L3-L4), in a 3-year-old mixed-breed dog. |
| Hip [dysplasia - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_003.htm) | Abnormal positioning of the hind limbs, with the heels close together, suggesting hip dysplasia, in this young Great Dane. |
| Hip dysplasia and scapular humeral eburnation - dog | Hip dysplasia in a 9-year-old German Shepherd. Note the marked fibrous thickening of the joint capsule that tries to compensate for the instability generated by the dysplasia. The border where the capsule is fixated on the femur appears nodular and highly irregular. The joint’s surface is heterogeneous, with dark areas around the atrophied hyaline cartilage that enable visualization of the underlying bone tissue. On the right, eburnation (ossification) of the scapular humeral cartilage can be seen. |
| Histiocytic [sarcoma - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_033.htm) | Histiocytic sarcoma on the right knee joint of a 6-year-old, female Great Dane. The picture was taken after fixation in formalin. Note the neoplastic tissue surrounding the joint and penetrating into it. On the right, corresponding x-ray image and, below, histology image of the tumour. |
| Joint cartilage atrophy - dog | Joint cartilage atrophy, allowing the underlying pink bone tissue to be seen through the atrophied cartilage (arrow). |
| Nucleus pulposus degeneration - dog | Degeneration of the nucleus pulposus in an intervertebral disc. Note the dull, irregular appearance of the nucleus, which white colouration suggests calcification. |
| Osteochondrosis dissecans – dog | Osteochondrosis dissecans lesions on the right humerus-radius-ulnar joint in a 9-year-old Labrador. Note the joint mouse, 3 mm in diameter, adherent to the joint capsule. |
| Severe arthrosis - dog | Severe arthrosis with complete flattening of the acetabular cavity, loss of the articular surface and absence of the left femoral head (surgically removed). On the right, severe fibrous arthritis with atrophy of the femoral articular cartilage and marked deformation of the borders of the acetabular cavity. |
| Vertebral [fracture - sheep](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_007.htm) | Traumatic vertebral fracture with bone tissue necrosis. |
| Villous [sinovitis - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_017.htm) | Villous [sinovitis](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_017.htm) and cartilage atrophy. The arrow points to an area of the synovial capsule where small villosities, indicative of chronic joint inflammation, can be seen. These are a result of exsudate organization. The joint surface is pink, indicating reduced thickness and allowing visualization of the underlying bone and its vascularisation. |
| [Spondylosis – cat](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_031.htm) | Spondylosis in a 12-year-old Persian cat. The ventral surface of the lumbar vertebrae exhibits deformation caused by ossifying periostitis. |
| Osteochondrosis dissecans – horse | Osteochondrosis dissecans lesions on the atlanto-occipital joint of a 10-month-old horse. Note the loss of cartilage fragments. On the right, the right tibial-tarsic joint shows fragility of the central sulcus of the femoral surface. This horse suffered several violent falls as a result of an undetermined neurologic condition. However, the falls do not completely explain the severity of the articular lesions. |
| Purulent [arthritis – calf](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_037.htm) | Purulent arthritis on the humerus-radius-ulnar joint, in a 1-month-old calf. The animal was euthanized due to suppurative pneumonia and was apparently a victim of omphalophlebitis. |
| Intermuscular phlegmon - dog | Muscle necrosis and subcutaneous inflammation in a dog, due to a phlegmon caused by an injection without asepsis. |
| [Intramuscular mast cell tumour - dog](file:///D:\Meu\FMV\Htm\pele\pele_090.htm) | Grade 3 mast cell tumour invading the biceps femoris muscle of the left hind limb of an 11-year-old Boxer. On the left, note how the muscle exhibits strands of white tissue that gives it an unusually firm texture. The right-side image shows the hypertrophied iliac lymph nodes (arrow above the bladder pointing to the smallest lymph node, cranial to the bladder). |
| Muscle [necrosis - cow](file:///C:\Users\Dalia\Desktop\Htm\ap_locom\locom_027.htm) | Bovine gluteal muscles in which well-delimited areas of necrosis, caused by reaction to inoculated material can be seen. |

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| Benign prostatic hyperplasia – dog | Benign prostatic hyperplasia in a dog. The prostate is moderately hypertrophied and exhibits superficial irregularity. A cystic cavity (arrow) can be seen on the organ’s cut surface. |
| Benign prostatic hyperplasia – dog | Benign prostatic hyperplasia in a dog. The organ is obviously enlarged, maintaining the median sulcus and a regular external surface. On the right, after sagital cut, it is possible to see focal haemorrhage on the right lobe. |
| Benign prostatic hyperplasia – microscopy image – dog | Benign prostatic hyperplasia is a common condition of dogs over 5 years of age. The gland is almost invariably enlarged due to hyperplasia of the glandular epithelium and/or fibromuscular stroma. Histologically, papillary formations project into the lumen of irregular prostatic acini. Cystic dilation of the glandular elements is relatively common. Prostatic proliferative processes can be a cause of coprostasis secondary to rectal compression (H&E, 40x). |
| Bladder leiomyoma and prostatic hypertrophy - dog | Leiomyoma on the external wall of the bladder in a 14-year-old dog. Prostatic hypertrophy and left testicular atrophy can also be observed. |
| Prostatic adenocarcinoma - dog | Prostatic adenocarcinoma with urethral invasion in a dog. Note the irregularity of the prostatic surface and of the prostatic urethra. |
| Prostatic adenocarcinoma - dog | Prostatic adenocarcinoma which is markedly hypertrophied due to the development of a large cyst, to the left, 6 cm in diameter (emptied in the image) and containing clear fluid. Conversely, the solid part of the organ was reduced, exhibiting a greyish cut surface and small cysts that have formed within its structure. |
| Prostatic hypertrophy - dog | Prostatic hypertrophy in a dog. Note how the prostate is enlarged when compared to the bladder. Additionally, its shape is irregular, without a median sulcus. The bladder contains a large calculus (vesical lithiasis) and the bladder wall exhibits congestion. In the heart, mitral valve irregularity can be seen, corresponding to valvular verrucous endocarditis. A small lesion of parietal endocarditis can also be seen in the auricle (arrow). On the right, the sectioned prostate exhibits pus-containing cysts, corresponding to cystic hypertrophy. The most prominent vesical lesions are those of cystitis secondary to lithiasis. |
| Prostatic hypertrophy - dog | Marked prostatic hypertrophy due to benign hyperplasia. Note how the prostate is exceptionally enlarged but maintains the median sulcus that divides the lobes. |
| Prostatic hypertrophy - dog | Prostatic hypertrophy due to benign hyperplasia. |
| Chronic balanoposthitis - dog | Chronic vesiculous balanoposthitis in a dog. |
| Scrotal haemorrhage – dog | Severe scrotal haemorrhage in a 6-year-old Siberian Husky. Coagulated blood can be seen between the scrotal skin and the testicles. A malignant leydigoma was present in one of the testicles. |
| Scrotal o[edema –](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_m\gen_001.htm) dog | Scrotal oedema in an animal with a heart condition. Note the abnormal thickening of the space between the skin and the testicular tunics due to oedema. This leads to scrotal enlargement which may be mistaken for the presence of testicular neoplasias. |
| [Sertolinoma - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_m\gen_008.htm) | Bilateral symmetrical alopecia and nipple hypertrophy in a case of hyperoestrogenism secondary to sertolinoma which had developed on an intra-abdominal testicle. |
| [Sertolinoma - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_m\gen_008.htm) | Large testicular tumour (sertolinoma) that developed on the left testicle, retained in the abdominal cavity. The right testicle was also retained (arrow) but was merely atrophied and had not developed any tumours. |
| [Sertolinoma – microscopy image - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_m\gen_008.htm) | Typical microscopy image of a sertolinoma, with elongated clear cells forming palisades (H&E, 400x). |
| [Varicocele –](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_m\gen_026.htm) dog | Varicocele associated with marked passive congestion of the testicle. The lesion was bilateral. The testicle exhibits severe degenerative lesions and the vaginal tunic is oedematous. |
| Besnoitiosis – bull | Brown Swiss bull with besnoitiosis. Note the rough, thickened appearance of the scrotal skin. On the right, several Besnoitia cysts can be seen in the dermis (H&E, 40x). |
| [Orchitis and epididymitis - bull](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_m\gen_015.htm) | Orchitis and epididymitis in a bull. There is obvious diffuse fibrous proliferation and small nodules disseminated through the testicular parenchyma, particularly predominant near the tail of the epididymis. The seminiferous tubules exhibit degeneration. In the histology image, on the right, a Besnoitia cyst can be seen surrounded by inflammatory reaction (H&E, 100x). |
| [Paraphimosis and priapism - dog](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_m\gen_027.htm) | Paraphimosis of the prepuce with penile priapism in a 1-year-old, mixed-breed, male dog. |
| Preputial stenosis - dog | Preputial stenosis in a 4-month-old male dog. |
| Transmissible venereal tumour - dog | Transmissible venereal tumour on the penis of a mixed-breed dog. The penile mucosa is severely congested, exhibiting a tumour mass that is larger near the base of the organ. |
| Parasitic balanoposthitis - horse | Balanoposthitis caused by Habronema sp. larvae. Note the extraordinary volume of the prepuce due to the intense inflammatory reaction developed due to the presence of the larvae of this parasite. The glans penis was also extremely hypertrophied. |

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| Chronic fibrous peritonitis - dog | Chronic fibrous peritonitis associated with internal organ atrophy. Note the liver atrophy with the lobes transformed into round masses with round edges. The image on the right shows a cylindrical, markedly atrophied spleen (B) (surrounded by the dotted line), exhibiting capsular thickening. The pancreas (P) is deformed by small nodules, suggesting chronic pancreatitis. |
| Enzymatic fat necrosis - cat | Enzymatic fat necrosis caused by acute haemorrhagic pancreatic necrosis and release of pancreatic enzymes into the peritoneal cavity. Note the yellow foci on the omental fat, corresponding to necrotic areas. |
| Peritoneal metastases - dog | Metastization to the parietal peritoneum of a prostatic carcinoma. Note the irregular appearance of the serosal surface due to fixation of neoplastic cells. The marked congestion is caused by the inflammation generated by metastization. |
| Peritoneal metastases - dog | Metastization to the omentum and mesenterium of a prostatic tumour causing a markedly nodular appearance. |
| Feline infectious peritonitis - cat | Feline infectious peritonitis (FIP) with serofibrinous pleural inflammation. The peritoneal serosa is not always the most affected in FIP. It can be that, as in this case, it is the pleural serosa that exhibits serohaemorrhagic inflammation. |
| Feline infectious peritonitis - cat | Feline infectious peritonitis (FIP). The peritoneal surface exhibits haemorrhage and fibrin plaques. The abdominal contents appear haemorrhagic. |
| Fibrinous peritonitis - cat | Fibrinous peritonitis with development of symphyses between the various organs. The fibrinous exsudate coats the organs in the abdominal cavity, being particularly evident over the liver (F). |
| Fibrinous peritonitis - cat | Fibrinous peritonitis with development of symphyses. The fibrinous exsudate coats the organs in the abdominal cavity, being particularly evident over the liver and spleen. The omentum appears nodular, suggesting organization of the exsudates and evolution to chronicity. |
| Fibrinous peritonitis - cat | Fibrinous peritonitis in a case of feline infectious peritonitis (FIP). Note the abundant exsudate that flows from the peritoneal cavity and the pale yellowish fibrin flakes. |
| Yellow fat disease - cat | Yellow fat disease in a cat. Note the mustard-yellow colouration of both intra-abdominal and subcutaneous fat. The inflammation of the subcutaneous tissue is made evident by the congestion of the small superficial vessels. |
| Fibrinous peritonitis - horse | Fibrinous peritonitis in a 12-year-old cross-breed Lusitan. Congestion and fibrin filaments can be seen. On the right, are foci of chronic peritonitis on the colonic wall, corresponding to areas of serosal thickening darkened by impregnation with haematic pigment. Below, note the mass that was located at the entrance of the pelvic cavity. Its dissection revealed it to result from the formation of a large, multilocular cavity of unknown nature that was apparently attached to the intestinal lumen. Histological analysis proved this case to be one of intestinal rupture that must have taken place several months prior to death. The omentum was involved in limiting the dispersion of intestinal contents, contributing to the slow evolution of an initially focal peritonitis. |
| Acute congestive peritonitis - calf | Congestive peritonitis in a calf. Note how the omental vessels appear congested. |
| Purulent peritonitis - cow | Purulent peritonitis in a cow. During skinning congestion and subcutaneous tissue haemorrhage were observed, possibly due to longstanding decubitus of this heavy animal. On the right, the opening of the peritoneal cavity revealed abundant blood-stained purulent exsudate. Observation of the abdominal organs (below) identified a uterine rupture that resulted in peritonitis. A large blood clot was adhered to the point of rupture. This animal had suffered dystocia, some days earlier, having been submitted to surgery. |
| Steatonecrosis – microscopy image - cow | Steatonecrosis (adipose tissue necrosis) in a cow. The necrotic adipocytes house opaque homogenously pink material. A foreign body-like inflammatory response with giant multinucleated cells surrounds the necrotic areas (H&E, 40x). On the right, note how the giant multinucleated cells surround the necrotic adipocytes (H&E, 100x). |
| Ventral hernia - calf | Large traumatic ventral hernia in a calf. The area that is being exposed corresponds to the herniary sac. |
| Gangrenous peritonitis - pig | Gangrenous peritonitis after gastric rupture. Green gastric contents can be seen dispersed throughout the peritoneal cavity and connected by fibrinous exsudate. |
| Mesenteric cystic pneumatosis - pig | Mesenteric cystic pneumatosis in a pig. This designation is given to the idiopathic accumulation of gas in the intestinal serosa and/or the lymphatic vessels and mesenteric lymph nodes. It is a slaughter finding that seems to result from the presence of powerful gas-producing anaerobic bacteria. |
| [Cysticercus pisiformis - rabbit](file:///D:\Meu\FMV\Htm\p%25C3%25A2ncreas%20e%20peritoneu\perito_028.htm) | In this rabbit’s peritoneal cavity, just over the stomach, Cysticercus pisiformis, the larval form of Taenia pisiformis, can be seen assuming the shape of thin-walled, transparent cystic structures, about the size of a pea, inside which a white opaque spot corresponding to the scolex is seen. These cysticerci are not adherent to the abdominal organs. |
| Fibrinous peritonitis - rabbit | Fibrinous peritonitis secondary to uterine rupture (not visible in the image) in an 8-year-old, female dwarf rabbit. The uterus exhibited and endometrial adenocarcinoma. The fibrinous material can be seen dispersed over the abdominal organs. |
| [Mesothelioma - chicken](file:///D:\Meu\FMV\Htm\p%25C3%25A2ncreas%20e%20peritoneu\perito_007.htm) | Mesothelioma in a chicken. Although the lesion mimics peritonitis, it is, in fact, a neoplastic growth of the cells of the serosal peritoneal lining and is frequently associated with avian leukosis. Note the hypertrophy and nodular appearance of the liver, a result of leukosis. |
| Visceral gout - chicken | Visceral gout is a result of the deposition of urates (insoluble crystalline uric acid salts) in several organs. In this case, note the deposition of salts on the pericardium, staining it bright white. |

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| Granulosa tumour and abnormal clitoral development - bitch | Granulosa tumour and thickening of the vaginal epithelium due to hyperoestrogenism. The clitoris is exceptionally developed becoming a small penis logged in the vulva. |
| Papillary adenocarcinoma of the ovarian germinal epithelium - bitch | Papillary adenocarcinoma of the ovarian germinal epithelium (bilateral). To the left is the adrenal gland which exhibits a medullary tumour that invades the caudal vena cava (arrow). The neoplastic mass has been cut lengthwise. On the right is a microscopy image of the tumour. Note the profoundly jagged appearance of the neoplasia (H&E, 40x). |
| Paraovarian cyst - queen | Paraovarian cyst in a queen. |
| Cystic ovarian degeneration - chicken | Cystic ovarian degeneration in a chicken. Note the exceptional quantity of clear, thin-walled cysts that have formed in the ovary. |
| Ovaritis – chicken | Ovaritis with egg rupture and peritonitis. Some ovules exhibit a strongly congested coating membrane (arrow). Note the irregularity of the lining of the peritoneal serosa due to the inflammatory response. The visceral serosa is similarly thickened and congested. |
| Endometrial cystic hyperplasia – microscopy image - bitch | Endometrial cystic hyperplasia in a bitch with persistent corpus luteus. Some endometrial gland acini exhibit cystic distension (H&E, 40x). |
| [Pyometra - bitch](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_f\gen_007.htm) | Early stage pyometra with little distension of the uterine horn. The endometrium is slightly irregular and exhibits focal congestion. |
| Suppurative metritis - bitch | Suppurative metritis in a 7-year-old Shih Tzu. The uterine horn is distended and full of purulent material. The bitch had been a victim of dystocia, some days before. The cause of death was septic pneumonia and pyothorax. |
| [Uterine leiomyosarcoma –](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_f\gen_004.htm) bitch | Large uterine leiomyosarcoma. Note the contralateral uterine horn on the right. |
| [Pyometra - queen](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_f\gen_006.htm) | Pyometra in a queen. Note the marked distension of both uterine horns due to retention of pus in the uterine lumen. |
| [Pyometra - queen](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_f\gen_006.htm) | Distension of a queen’s uterine horns due to bilateral pyometra. |
| Purulent [metritis –](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_f\gen_011.htm) cow | Purulent [metritis in](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_f\gen_011.htm) a cow. |
| Uterine a[denocarcinoma - doe](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_f\gen_021.htm) | Fibrinous peritonitis secondary to uterine rupture (not visible in the image) in an 8-year-old doe. On the right-side image the right uterine horn has been cut open, showing the haemorrhagic appearance of the uterine wall. A uterine adenocarcinoma was identified upon histopathological analysis. |
| Uterine prolapse [- doe](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_f\gen_008.htm) | Uterine prolapse with subsequent necrosis of the exposed sectors. Note that the exposed surface corresponds to endometrium and not the serosal surface. |
| [Fibroleyomioma of the vaginal wall - bitch](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_f\gen_016.htm) | Large vaginal fibroleyomioma in a 13-year-old mixed-breed bitch. |
| [Fibroleyomioma of the vaginal wall - bitch](file:///C:\Users\Dalia\Desktop\Htm\ap_genital_f\gen_016.htm) | Large vaginal fibroleyomioma that is projected beyond the vulval limits. In spite of their dimensions these are usually benign tumours and recovery after resection is complete. |
| Transmissible venereal tumour - bitch | Vaginal transmissible venereal tumour in a bitch. The vulvar labia are thickened due to the neoplastic tissue that has grown on its walls. |
| Transmissible venereal tumour - bitch | Vaginal transmissible venereal tumour in a bitch. The tumour distends the vulva which is projected caudally. |
| Vaginal wall neoplasias – bitch | Multiple vaginal wall tumours. The largest mass corresponds to a hard fibroma and the smaller masses to fibropapillomas (arrows). |

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| Anaplastic oligodendroglioma [–](file:///D:\Meu\FMV\Htm\nervoso\nerv_013.htm) dog | Large anaplastic oligodendroglioma extending from the frontal lobe to the posterior thalamus, in a 2-year-old Boxer. |
| [Astrocytoma - dog](file:///D:\Meu\FMV\Htm\nervoso\nerv_011.htm) | Astrocytoma in a 2-year-old female Great Dane. Most of the left hemisphere has been destroyed by the neoplastic tissue. |
| Cerebral [haemorrhage](file:///D:\Meu\FMV\Htm\nervoso\nerv_005.htm) - dog | Cerebral haemorrhage on the left cerebral hemisphere in a dog. |
| Congenital hydrocephalus - dog | Congenital hydrocephalus in a dog. The image on the left shows the cranial deformity (left side) relatively to a normal cranium (right side). The image on the right shows the same case after the cranium was removed. Note how the brain’s consistency is reduced due to the distension of the lateral ventricles. |
| [Encephalitis secondary to endocarditis - dog](file:///D:\Meu\FMV\Htm\nervoso\nerv_009.htm) | Valvular vegetative endocarditis of the mitral valve in a dog and subsequent encephalitis due to cerebral fixation of infectious emboli. These have formed by the release of fragments of the cardiac thrombi. |
| Fibroblastic [meningioma - dog](file:///D:\Meu\FMV\Htm\nervoso\nerv_015.htm) | Fibroblastic [meningioma in a](file:///D:\Meu\FMV\Htm\nervoso\nerv_015.htm) 9-year-old German Shepherd. The tumour, cut in 3 parts on the left, was located over the left frontal lobe and compressed the brain, deforming it. |
| [Oligodendroglioma - dog](file:///D:\Meu\FMV\Htm\nervoso\nerv_010.htm) | Oligodendroglioma in the left thalamus of a Boxer. The entire area is occupied by a gelatinous mass. The lateral ventricles are moderately dilated. |
| Papillary [meningioma –](file:///D:\Meu\FMV\Htm\nervoso\nerv_016.htm) dog | Papillary meningioma in an 8-year-old mixed-breed dog. The tumour developed on the basis of the brain, in the mesencephalon, compressing and destroying the nervous tissue. |
| Meningeal histiocytic sarcoma [–](file:///D:\Meu\FMV\Htm\nervoso\nerv_020.htm) dog | Meningeal histiocytic sarcoma in a 6-year-old dog. The tumour tissue forms a large mass that embraces the spinal cord. When cut, it can be seen in greater detail how the neoplastic tissue surrounds a compressed spinal cord (right-side image). Below, note the splenic metastases. |
| [Meningioma - dog](file:///D:\Meu\FMV\Htm\nervoso\nerv_003.htm) | Meningioma located on the right ventral surface of a dog’s cervical vertebrae. The tumour compressed the spinal cord. |
| Ossifying pachymeningitis - dog | Ossifying pachymeningitis in an 11-year-old Afghan Hound. Note the formation of tough plaques on the dura mater corresponding to bone tissue. This alteration is common in older animals and does not seem to cause any functional disturbance. The dark nodules that seem to be inserted in the dura mater correspond to inflamed adipose tissue containing haematic pigment. |
| [Leukosis - cow](file:///D:\Meu\FMV\Htm\nervoso\nerv_002.htm) | Cow presenting with leukosis and neurologic symptoms. This animal dragged the left hind limb (monoparesia), indicating a possible lesion of the regional motor nerves. |
| Meningeal tumour – cow | Tumour located inside the vertebral canal in the lumbar region, close to the cauda equina. The tumour corresponded to bovine leukosis and surrounded the meninges, compressing the spinal cord and the regional rachidian nerves. |
| [Fucosidosis - dog](file:///D:\Meu\FMV\Htm\nervoso\nerv_017.htm) | Fucosidosis in a 4-year-old Podengo. The ganglia are hypertrophied due to infiltration of material in the neurons. Below, the neurons contain a pale finely granular material that displaces the normal cytoplasmic constituents and increases the volume of each cell, contributing to the increased thickness of the ganglia. |
| Acute brachial plexus neuritis - calf | Acute brachial plexus neuritis in a 2-day-old Limousine. The nerve appears irregularly thickened oedematous and focally congested. This animal, along with others born in the same farm around the same time, exhibited severe neurologic symptoms that consisted of complete inability to stand in spite of a good body conformation. The hypothesis of in utero BVD infection has been confirmed. |
| Sciatic nerve congestion - chicken | Congested appearance of the sciatic nerve in a chicken diagnosed with Marek’s disease. |

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| Parathyroid hypertrophy - dog | Bilateral parathyroid hypertrophy in a dog. |
| Thyroid cystic adenoma - dog | Right thyroid cystic adenoma in a 9-year-old Labrador. |
| Normal thyroid - cat | Normal cat thyroid. Since cats are frequently victims of hyperthyroidism it is important to know the normal dimensions of the organ. |
| [Phaeocromocytoma - dog](file:///D:\Meu\FMV\Htm\endoc\endoc_002.htm) | Medullary tumour of the right adrenal gland (phaecromocytoma) in a 15-year-old Poodle. The tumour is intact and strongly adhered to the caudal vena cava (arrow). On the right, the tumour has been cut in half, showing its brown colouration. |
| [Phaeocromocytoma - dog](file:///D:\Meu\FMV\Htm\endoc\endoc_002.htm) | Phaeocromocytoma of the right adrenal gland in an 11-year-old Samoyed. The tumour was quite large (26 x 16 x 15 cm) and invaded the caudal vena cava. On the right, its location relatively to the homolateral kidney can be seen (the difference between the tag numbers resulted from an error when the first tag was produced). |
| [Phaeocromocytoma with vena cava invasion- dog](file:///D:\Meu\FMV\Htm\endoc\endoc_002.htm) | Medullary tumour of the right adrenal gland (phaecromocytoma) in a 10-year-old Boxer. The tumour invades the vena cava, which has been cut to allow visualization of a part that almost completely fills the lumen of the vena cava (arrow). |

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| Haemorrhagic pancreatic necrosis [- dog](file:///D:\Meu\FMV\Htm\p%25C3%25A2ncreas%20e%20peritoneu\perito_011.htm) | Acute haemorrhagic pancreatic necrosis. The entire organ is haemorrhagic with the exception of a few areas. |
| Chronic pancreatitis - cat | Chronic pancreatitis with marked atrophy and excessively nodular appearance of the organ. |
| Chronic pancreatitis and nodular hyperplasia - cat | Chronic pancreatitis and nodular hyperplasia in a cat. Note the nodular appearance of the pancreas, particularly the right extremity. |
| Chronic pancreatitis - cat | Chronic pancreatitis with marked atrophy and excessively nodular appearance of the organ. |
| Exocrine pancreatic [adenocarcinoma - cat](file:///D:\Meu\FMV\Htm\p%25C3%25A2ncreas%20e%20peritoneu\perito_033.htm) | Exocrine pancreatic [adenocarcinoma in a 12-year-old female Domestic European cat](file:///D:\Meu\FMV\Htm\p%25C3%25A2ncreas%20e%20peritoneu\perito_033.htm). |