

PART 1

HISTORICAL SIGNS

1.1 General, systemic and metabolic historical signs

1.1.1 Polyuria/polydipsia

Diet

Increased salt intake
Very-low-protein diet

Drugs/toxins

Aminophylline
Corticosteroids
Delmadinone acetate
Diuretics
Ethylene glycol
Indomethacin

- Lilies

Lithium

- Melamine

NPK fertilisers
Paraquat
Phenobarbitone
Potassium bromide

Primidone
Proligestone

- Raisins/grapes

Terfenadine
Theophylline
Vitamin D rodenticides

Electrolyte disorders

Hypercalcaemia *q.v.*
Hypernatraemia *q.v.*

- Primary
- Secondary to dehydration, lack of intake, excessive loss of water, severe vomiting/diarrhoea, etc.

Hypokalaemia *q.v.*

Endocrine disease

Acromegaly
Diabetes mellitus*
Diabetes insipidus

- Central
- Nephrogenic

Hyperadrenocorticism
Hyperthyroidism* (C)
Hypoadrenocorticism (D)
Insulinoma
Pheochromocytoma
Primary hyperaldosteronism
Primary hyperparathyroidism

Hepatobiliary disease, e.g.

Hepatic neoplasia* *q.v.*
Hepatitis/cholangiohepatitis* *q.v.*

Infectious disease, e.g.

Toxaemia, e.g.

- Pyometra*

Miscellaneous

Congenital lack of ADH receptors
Hypothalamic disease
Pericardial effusion

Polycythaemia
Psychogenic*

Neoplasia*

Physiological

Exercise
High environmental temperature

Renal disorders

Acute kidney injury* *q.v.*
Chronic kidney disease* *q.v.*
Following urethral obstruction*
Glomerulonephritis
Primary renal glycosuria
Pyelonephritis
Renal medullary washout

Note: Polyuria and polydipsia are considered together here, since one will lead to the other, with only a few exceptions. These include polydipsia in the face of obstructive lower urinary tract disease or oliguric renal failure and polyuria which is not matched by fluid intake, in which case dehydration will rapidly follow. None of these scenarios are encountered commonly in practice. Polydipsia without polyuria can occur in situations of increased urinary loss of fluid, such as after strenuous exercise.

1.1.2 Weight loss

Decreased nutrient intake

Anorexia* *q.v.*
Diet

- Poor-quality diet
- Underfeeding

Dysphagia *q.v.*
Oral disease, e.g.

- Dental disease
- Masticatory myositis
- Temporomandibular joint disease

Regurgitation *q.v.*

Increased nutrient loss

Burns

Chronic blood loss

- Epistaxis *q.v.*
- Haematemesis *q.v.*
- Haematuria *q.v.*
- Melaena *q.v.*

Diabetes mellitus/diabetic ketoacidosis*

Effusions *q.v.*

Fanconi syndrome (D)

Intestinal parasites*

Neoplasia*

Protein-losing enteropathy*

Protein-losing nephropathy

Increased nutrient use

Endocrine, e.g.

Hyperthyroidism* (C)

*Neoplasia**

Physiological

Cold environment

Exercise

Fever *q.v.*

Lactation*

Pregnancy*

Maldigestion/malabsorption

Cardiac failure

Exocrine pancreatic insufficiency

Hepatic failure/bile salt deficiency *q.v.*

Hypoadrenocorticism (D)

Neoplasia*

Renal disease* *q.v.*

Small intestinal disease* *q.v.*, e.g.

- Antibiotic-responsive diarrhoea
- Inflammatory bowel disease
- Lymphangiectasia

Regurgitation and vomiting* *q.v.*

1.1.3 Weight gain

Decreased energy utilisation, e.g.

- Decreased exercise

Fluid accumulation

Ascites* *q.v.*

Peripheral oedema *q.v.*

Pleural effusion

Increased body fat

Overeating

Boredom

Excessive appetite (normal in some breeds)

High-calorie diets

Overfeeding*

Endocrinopathies

Acromegaly

Hyperadrenocorticism

Hypogonadism

Hypothyroidism* (D)

Insulinoma

Increased organ size

Hepatomegaly* *q.v.*

Renomegaly *q.v.*

Splenomegaly* *q.v.*

Uterine enlargement *q.v.*

- Pregnancy*
- Pyometra*

Neoplasia

Large abdominal mass (often associated with poor body condition)*

Drugs, e.g.

- Corticosteroids

1.1.4 Polyphagia

Behavioural/psychological

Boredom

Normal in some breeds*

Psychogenic, e.g. problem with satiety centre

Diet

Highly palatable food*

Poor-quality food

Drugs, e.g.

Benzodiazepines

Corticosteroids

Mirtazapine

Progestagens

Endocrine

Acromegaly

Diabetes mellitus*

Hyperadrenocorticism

Hyperthyroidism *(C)

Insulinoma

Increased nutrient loss, e.g.

Exocrine pancreatic insufficiency

Malabsorption

- Small intestinal disease

Increased nutrient use, e.g.

Neoplasia

Malassimilation *q.v.*

Physiological

Cold environment

Increased exercise

Lactation

Pregnancy

1.1.5 Anorexia/inappetence

Anorexia, primary

Intracranial disease, e.g.

- Hypothalamic neoplasia

Anorexia, secondary

Anosmia

- Chronic rhinitis *q.v.*
- Nasal neoplasia
- Other nasal disease
- Neurological disease

Endocrine disease, e.g.

- Diabetic ketoacidosis
- Hypoadrenocorticism (D)

Fever* *q.v.*

Gastrointestinal disease *q.v.*, e.g.

- Gastritis
- Inflammatory bowel disease*

Heart disease, e.g.

- Cardiac failure*

Hepatic disease* *q.v.*

Infection*

Metabolic abnormalities, e.g.

- Hypercalcaemia *q.v.*
- Hypokalaemia *q.v.*

Pain*

Pancreatic disease*, e.g.

- Pancreatitis

Renal disease* *q.v.*

Respiratory disease, e.g.

- Airway disease* *q.v.*
- Diaphragmatic hernia
- Pleural effusion* *q.v.*
- Pneumonia *q.v.*

Diet

Recent dietary changes*

Unpalatable diet*

Difficulty with mastication

Dental disease*

Lingual disease

Oral neoplasia*

Oral ulceration, e.g.

- Ingestion of caustic or acidic substances*
- Renal disease

Difficulty with prehension

Blindness *q.v.*

Myopathy, e.g.

- Masticatory myositis
- Tetanus

Pain on opening jaw, e.g.

- Mandibular or maxillary fracture
- Retrobulbar abscess
- Skull fractures
- Soft tissue trauma
- Temporomandibular joint disease

Trigeminal nerve disease, e.g.

- Neoplasia
- Trigeminal neuritis

Difficulty with swallowing

Pharyngeal disease

Foreign body*

Neoplasia

Neurological disease

Ulceration

Oesophageal disease, e.g.

Foreign body*

Megaoesophagus

Neoplasia

Stricture

Ulceration

Vascular ring anomaly

Drugs

- Acetazolamide
- Amiodarone
- Amphotericin B
- Bethanechol
- Bromocriptine
- Butorphanol
- Cardiac glycosides
- Chlorambucil
- Diazoxide
- Doxorubicin
- Fentanyl
- Hydralazine
- Itraconazole
- Ketoconazole
- Melphalan
- Methimazole
- Mitotane
- Nicotinamide
- Oxytetracycline (C)
- Penicillamine
- Theophylline
- Trimethoprim/sulphonamide (C)

Psychological/behavioural* factors

Altered schedule
 New family members
 New house
 New pets

1.1.6 Failure to grow

With good body condition

Chondrodystrophy (normal in many breeds)* (D)

Endocrine disorders

- Congenital hyposomatotropism (pituitary dwarfism)
- Congenital hypothyroidism

With poor body condition

Dietary intolerance

Exocrine pancreatic insufficiency*

Inadequate nutrient intake

- Anorexia *q.v.*
- Poor-quality diet
- Underfeeding

Cardiac disorders, e.g.

- Congenital
- Endocarditis

Endocrine disease

- Diabetes insipidus
- Diabetes mellitus*
- Hypoadrenocorticism (D)

Gastrointestinal disease, e.g.

- Histoplasmosis
- Obstruction, e.g.
 - Foreign body*
 - Intussusception*
- Parasites*

Hepatic disorders, e.g.

- Hepatitis *q.v.*
- Portosystemic shunt

Inflammatory disease

Oesophageal disorders, e.g.

- Megaoesophagus *q.v.*
- Vascular ring anomaly (e.g. persistent right aortic arch)

Renal disease

- Congenital kidney disease
- Glomerulonephritis
- Pyelonephritis

1.1.7 Syncope/collapse

Cardiovascular dysfunction

Bradyarrhythmias q.v., e.g.

- High-grade second-degree heart block
- Sick sinus syndrome (D)

- Third-degree heart block

Myocardial failure

Myocardial infarction

Cardiac disease

- Congenital, e.g.
 - Aortic stenosis (D)
 - Pulmonic stenosis (D)
- Hypertrophic obstructive cardiomyopathy
- Pericardial effusion* (D)
- Pulmonary hypertension
- Arterial obstruction, e.g.
 - Neoplasia
 - Thrombosis

Shock *q.v.*

Tachyarrhythmias q.v.

- Supraventricular tachycardia*
- Ventricular tachycardia*

Drugs

Anti-arrhythmics, e.g.

- Atenolol
- Digoxin
- Propranolol
- Quinidine

Sedatives, e.g.

- Phenothiazines

Vasodilators, e.g.

- ACE inhibitors
- Hydralazine
- Nitroglycerine

Hypoxaemic disease

Carboxyhaemoglobinaemia

Methaemoglobinaemia

Pleural/thoracic disorders, e.g.

- Pleural effusion
- Pneumothorax
- Rib fractures

Respiratory disease

- Lower airway, e.g.
 - Pneumonia
 - Small airway disease
- Upper airway, e.g.
 - Brachycephalic obstructive airway syndrome
 - Laryngeal paralysis
 - Tracheal collapse
 - Tracheal obstruction
- Ventilation–perfusion mismatch, e.g.
 - Pulmonary thromboembolism (PTE)
 - Lung collapse

Right-to-left cardiac shunt, e.g.

- Reverse-shunting patent ductus arteriosus
- Severe anaemia

Metabolic/endocrine disorders

Diabetic ketoacidosis

Hypercalcaemia/hypocalcaemia *q.v.*

Hypernatraemia/hyponatraemia *q.v.*

Hyperthermia/hypothermia *q.v.*

Hypoglycaemia *q.v.*

Hyperkalaemia/hypokalaemia *q.v.*

Severe acidosis *q.v.*

Severe alkalosis *q.v.*

Pheochromocytoma

Hypoadrenocorticism

Insulinoma

Miscellaneous

Carotid sinus stimulation, e.g.

- Neoplasia
- Tight collar

Hyperventilation

Postural hypotension

Tussive/cough syncope

Myopathies

Corticosteroid myopathy

Exertional myopathy

Hypocalcaemic myopathy

Hypokalaemic myopathy
 Malignant hyperthermia
 Mitochondrial myopathy
 Muscular dystrophy
 Polymyopathy
 Polymyositis
 Protozoal myopathy

Neurological dysfunction

Brainstem disease

Diffuse cerebral dysfunction, e.g.

- Encephalopathy
- Haemorrhage
- Hydrocephalus
- Inflammation
- Oedema
- Space-occupying lesion
- Trauma

Fibrocartilaginous embolism

Glossopharyngeal neuralgia

Lower motor neurone disorders

- Endocrine neuropathies, e.g.
 - Diabetes mellitus*
 - Hyperadrenocorticism
 - Hypothyroidism* (D)
- Lumbosacral disease
- Paraneoplastic neuropathies, e.g.
 - Insulinoma
- Peripheral nerve neoplasia
- Polyneuropathy, e. g.
 - Polyradiculoneuropathy

Micturition-related collapse

Narcolepsy/cataplexy

Neuromuscular junction disorders

- Botulism
- Myasthenia gravis

Seizures *q.v.*

Swallowing-related collapse

Upper motor neurone disorders

- Central vestibular disease

- Cerebellar disease
- Cerebral disease
- Peripheral vestibular disease
- Spinal disease

Skeletal/joint disorders

Bilateral cranial cruciate disease
Bilateral hip disease
Discospondylitis
Intervertebral disc disease
Multiple myeloma
Osteoarthritis
Panosteitis
Patellar luxation
Polyarthritis

1.1.8 Weakness

Cardiovascular diseases

Bradyarrhythmias *q.v.*, e.g.

- High-grade second-degree heart block
- Sick sinus syndrome (D)
- Third-degree heart block

Congestive heart failure*
Hypertension* *q.v.*
Hypotension* *q.v.*
Pericardial effusion* *q.v.*
Tachyarrhythmias *q.v.*, e.g.
Ventricular tachycardia*

- Supraventricular tachycardia

Drugs/toxins

Alphachloralose
Anticoagulant rodenticides
Anticonvulsants
Antihistamines
Blue-green algae
Cannabis
Diclofenac sodium

Glucocorticoids
 Hypotensive agents, e.g.
 • Beta blockers
 • Vasodilators
 Ibuprofen
 Insulin overdosage
 Iron salts
 Mistletoe
 Opioids
 Organophosphates
 Petroleum distillates
 Phenoxy acid herbicides
 Pyrethrin/pyrethroids
 Rhododendron
 Salbutamol
 Sedatives

Endocrine diseases

Diabetes mellitus*
 Hyperadrenocorticism
 Hyperparathyroidism
 Hypoadrenocorticism (D)
 Hypoparathyroidism
 Hypothyroidism* (D)
 Insulinoma

Haematological diseases

Anaemia* *q.v.*
 Hyperviscosity syndrome, e.g. polycythaemia

Inflammatory/Immune-mediated diseases

Chronic inflammatory conditions*
 Immune-mediated haemolytic anaemia* *q.v.*
 Immune-mediated polyarthritis

Infectious diseases*

Bacterial
 Viral
 Fungal
 Rickettsial
 Protozoal and other parasitic diseases

Metabolic disease

Acid–base disorders

- Acidosis *q.v.*
- Alkalosis *q.v.*

Electrolyte disorders*

- Hypercalcaemia*/hypocalcaemia *q.v.*
- Hyperkalaemia/hypokalaemia* *q.v.*
- Hypernatraemia/hyponatraemia *q.v.*

Hepatic failure* *q.v.*

Hyper-/hypoglycaemia *q.v.*

Renal disease* *q.v.*

Neurological diseases

Intracranial disease, e.g.

Cerebrovascular accident

- Epilepsy* *q.v.*

Infection

Inflammation

Space-occupying lesions

Vestibular disease

Neuromuscular disease, e.g.

- Botulism
- Myasthenia gravis
- Myopathies
- Tick paralysis

Peripheral polyneuropathies

Drugs/toxins, e.g.

- Cisplatin
- Lead
- Vincristine

Endocrine disorders, e.g.

- Diabetes mellitus*
- Hyperadrenocorticism
- Hypothyroidism* (D)

Polyradiculoneuritis

Paraneoplastic disorders

Spinal cord disease q.v., e.g.

Fibrocartilaginous embolism

Infection
Inflammation
Intervertebral disc disease* (D)
Neoplasia
Trauma*

Vestibular disease * *q.v.*

- Central vestibular disease
- Peripheral vestibular disease

Nutritional disorders

Cachexia, *e.g.*

Heart failure*
Neoplasia*

Inadequate calorie intake, *e.g.*

Anorexia* *q.v.*
Poor-quality diet

Specific nutrient deficiencies, *e.g.*

Minerals
Vitamins

Physiological factors

Over-exercise
Pain*
Stress/anxiety*

Respiratory diseases

Airway obstruction, *e.g.*

- Feline asthma* (C)
- Foreign body*
- Neoplasia *
- Pleural effusion*
- Pulmonary hypertension
- Pulmonary oedema* *q.v.*
- Pulmonary thromboembolism

Severe pulmonary parenchymal disease

Systemic disorders

Dehydration*
Fever* *q.v.*
Neoplasia*

1.2 Gastrointestinal/abdominal historical signs

1.2.1 Ptyalism/salivation/hypersalivation

Drugs/toxins

Adder bites
Alphachloralose
Baclofen
Batteries
Benzodiazepines
Bethanechol
Blue-green algae
Cannabis
Carbamate
Chocolate/theobromine
Cotoneaster
Cyanoacrylate adhesives
Daffodil
Dieffenbachia
Dinoprost tromethamine
Glyphosphate
Horse chestnut
Ivermectin
Ketamine
Laburnum
Levamisole (C)
Loperamide
Metronidazole
Mistletoe
NPK fertilisers
Organophosphates
Paracetamol
Paraquat
Phenoxy acid herbicides
Plastic explosives
Plants
Pyrethrin/pyrethroids

Pyridostigmine
Rhododendron
Rowan
Terfenadine
Toads
Trimethoprim/sulphonamide (C)
Xylazine

Nausea/regurgitation/vomiting q.v.*

Neurological disease

Cataplexy/narcolepsy
Hepatic encephalopathy
Intracranial neoplasia
Partial seizures

Normal breed variation, e.g.*

St Bernard

Oral cavity disease

- Dental disease*
- Foreign body*
- Neoplasia*, e.g. tonsillar
- Inability to close mouth, e.g.
 - Mandibular trauma*
 - Trigeminal nerve disease, e.g.
 - Idiopathic trigeminal neuritis
 - Infiltrating neoplasia, e.g.
 - Lymphoma
 - Nerve sheath tumours
- Infection, e.g.
 - Rabies
- Inflammation, e.g.
 - Fautitis*
 - Lip fold dermatitis
 - Gingivitis*
 - Glossitis*
 - Oesophagitis*
 - Stomatitis*

Ulceration*, e.g.

- Chronic kidney disease*
- Immune-mediated disease
- Ingestion of irritant substance

Physiological factors

Appetite stimulation*

Fear*

Stress*

Salivary gland disease q.v.

Salivary gland necrosis/sialadenitis

Salivary mucocoele

Sialadenosis

1.2.2 Gagging/retching

Congenital disease

Achalasia, e.g.

- Cricopharyngeal achalasia (D)

Cleft palate

Hydrocephalus

Inflammatory and infectious disease

Asthma* (C)

Bacterial encephalitis

Fungal disease

- Granuloma complex

Idiopathic glossopharyngitis

Laryngitis*

Nasopharyngeal disease, e.g. polyps (C)

Pharyngitis*

Rabies

Rhinitis*

Sialadenitis

Viral encephalitis

Neoplasia

- Central nervous system
- Epiglottis
- Inner ear
- Nasal
- Pharyngeal
- Tonsillar

Neurological disease

- Brainstem disease
- Cranial nerve defects (V, VII, IX, XII)
- Encephalitis
- Laryngeal paralysis*
- Muscular dystrophy
- Myasthenia gravis

Nutrition

- Food texture and size

Respiratory disease (expectoration), e.g.

- Bronchitis*
- Haemorrhage
- Pulmonary oedema*

Systemic disorders

- Hypocalcaemia
- Renal disease*

Toxic

- Botulism
- Ingestion of irritant chemical
- Smoke

Trauma

- Foreign body*
- Pharyngeal haematoma
- Styloid apparatus trauma
- Tracheal rupture

1.2.3 Dysphagia

Infectious/inflammatory disease

Oral disease

- Dental disease*
- Osteomyelitis of the jaw
- Periodontitis*
- Pharyngitis*
- Rabies
- Retrobulbar abscess
- Severe gingivitis*
- Salivary gland disease, e.g.
 - Sialadenitis
- Tooth root abscess*
- Ulceration, e.g.
 - Ingestion of irritant substance
 - Renal disease*

Neurological/neuromuscular disease

- Cricopharyngeal achalasia
- Myasthenia gravis
- Myopathy, e.g.
 - Masticatory myopathy
- Trigeminal nerve disease, e.g.
 - Intracranial disease
 - Trigeminal neuritis

Obstruction

- Foreign body*
- Granuloma
- Neoplasia
- Sialocoele

Temporomandibular joint disease

*Trauma**

- Fracture
- Haematoma
- Laceration

1.2.4 Regurgitation

Endocrine disease

Hypoadrenocorticism (D)
Hypothyroidism* (D)

Gastric disease (can develop regurgitation secondary to outflow obstruction)

Gastric dilatation/volvulus* (D)
Hiatal hernia

- Gastro-oesophageal intussusception

Pyloric outflow obstruction, e.g.

- Foreign body*
- Neoplasia
- Pyloric stenosis

Immune-mediated disease

Dermatomyositis (D)
Polymyositis
Systemic lupus erythematosus

Neurological disease

Central nervous system disease, e.g.

Brainstem disease
Distemper infection (D)
Infection
Inflammation
Intracranial space-occupying lesion
Storage diseases
Trauma

Neuromuscular junctionopathies, e.g.

Anticholinesterase toxicity
Botulism
Myasthenia gravis
Tetanus

Peripheral neuropathies, e.g.

Giant cell axonal neuropathy (D)
Lead poisoning

Polyneuritis

Polyradiculoneuritis

- Idiopathic
- Tick paralysis

Oesophageal disease

Foreign body*

Granuloma, e.g. *Spirocerca lupi*

Mediastinal mass (extraluminal obstruction)

Megaoesophagus

- Idiopathic
- Acquired

Neoplasia

Oesophageal diverticulum

Oesophageal fistula

Oesophageal inclusion cysts

Oesophagitis*, e.g.

- Secondary to gastric reflux
- Severe vomiting
 - Post anaesthesia
 - Idiopathic
 - Ingestion irritants

Stricture

Vascular ring anomaly, e.g.

- Persistent right aortic arch

Salivary gland disease

Sialadenitis

Sialadenosis

1.2.5 Vomiting

ACUTE VOMITING

Dietary

Dietary indiscretion*

Dietary intolerance*

Sudden change in diet*

Drugs/toxins

Acetazolamide
Adder bite
Allopurinol
Alpha-2 agonists
Aminophylline
Amphotericin B
Apomorphine
Aspirin
Atipamezole
Atropine
Batteries
Benzalkonium chloride
Bethanechol
Blue-green algae
Borax
Bromocriptine
Calcium edetate
Carbimazole
Carboplatin
Cardiac glycosides
Cephalexin
Chlorambucil
Chloramphenicol
Chlorphenamine
Clomipramine
Colchicine
Cotoneaster
Cyclophosphamide
Cyclosporin
Cytarabine
Daffodil
Dichlorophen
Diclofenac sodium
Dinoprost tromethamine
Dopamine
Doxorubicin
Doxycycline
Dieffenbachia
Ethylene glycol

Erythromycin
Glipizide
Glucocorticoids
Glyphosphate
Honeysuckle
Horse chestnut
Hydralazine
Ibuprofen
Indomethacin
Ipecacuanha
Iron/iron salts
Ivermectin
Ketoconazole
Laburnum
Lead
Levamisole
Lignocaine
Loperamide
Medetomidine
Melfalan
Metaldehyde
Methimazole
Metronidazole
Mexiletine
Misoprostol
Mistletoe
Mitotane
Naproxen
Nicotinamide
Nitroscanate
NPK fertilisers
NSAIDs
Paracetamol
Paraquat
Penicillamine
Pentoxifylline
Petroleum distillates
Phenoxy acid herbicides
Phenytoin
Pimobendan

Piperazine
Plastic explosives
Poinsettia
Potassium bromide
Procainamide
Propantheline bromide
Pyracantha
Pyrethrin/pyrethroids
Pyridostigmine
Rhododendron
Rowan
Salt
Selective serotonin reuptake inhibitors
Sildenafil
Sotalol
Strychnine
Sulphasalazine
Terfenadine
Tetracycline
Theobromine
Theophylline
Tricyclic antidepressants
Trimethoprim/sulphonamide
Ursodeoxycholic acid
Vitamin D rodenticides
Xylazine
Yew
Zinc

Endocrine disease, e.g.

Diabetic ketoacidosis*
Hypoadrenocorticism (D)

Gastrointestinal disease

Colitis*
Constipation/obstipation* *q.v.*
Foreign body*
Gastric dilatation/volvulus*
Gastric or duodenal ulceration*
Gastritis/enteritis*

Haemorrhagic gastroenteritis*

Infection, e.g.

- Bacterial*
- Parasites*
- Viral*

Inflammatory bowel disease*

Intestinal volvulus

Intussusception

Neoplasia*

Metabolic/systemic disease

Hypercalcaemia/hypocalcaemia *q.v.*

Hyperkalaemia/hypokalaemia* *q.v.*

Hyperthermia* *q.v.*

Liver disease* *q.v.*

Pancreatitis*

Peritonitis*

Prostatitis*

Pyometra* (D)

Renal disease* *q.v.*

Septicaemia*

Urinary obstruction*

Vestibular disease*

Miscellaneous conditions

Central nervous system disease

Diaphragmatic hernia

Motion sickness*

Psychogenic

CHRONIC VOMITING

Endocrine disease, e.g.

Diabetes mellitus*

Hyperthyroidism* (C)

Hypoadrenocorticism (D)

Gastrointestinal disease

Bacterial overgrowth

Colitis*

Constipation/obstipation* *q.v.*

Enterogastric reflux

Gastric motility disorders*

Gastric or duodenal ulceration*

Gastritis/enteritis*

Infection, e.g.

- Bacterial
- Fungal
- Parasites*
- Viral

Inflammatory bowel disease

- Eosinophilic
- Lymphocytic
- Lymphoplasmacytic
- Mixed

Irritable bowel syndrome

Neoplasia*

- Intestinal, e.g. lymphoma and adenocarcinoma
- Gastrinoma
- Mast cell tumour

Obstruction, e.g.

- Foreign body*
- Inflammatory bowel disease (gastritis or enteritis)
- Intussusception*
- Neoplasia*
- Pyloric stenosis
- Ulceration

Metabolic/systemic disease

Heartworm disease

Hypercalcaemia/hypocalcaemia *q.v.*

Hyperkalaemia/hypokalaemia *q.v.*

Liver disease* *q.v.*

Pancreatitis*

Prostatitis

Pyometra* (D)

Renal disease* *q.v.*

Septicaemia

Miscellaneous conditions

- Abdominal neoplasia
- Diaphragmatic hernia
- Sialadenitis
- Hydrocephalus
- Brain tumour

1.2.6 Diarrhoea**SMALL INTESTINAL DIARRHOEA****Diet**

Dietary intolerance, e.g.

- Food hypersensitivity*
- Food intolerance
- Gluten-sensitive enteropathy

Overfeeding

Sudden change in diet

Drugs/toxins (see Large intestinal diarrhoea)**Extra-gastrointestinal disease**

- Exocrine pancreatic insufficiency*
- Hepatic disease* *q.v.*
- Hyperthyroidism* (C)
- Hypoadrenocorticism (D)
- IgA deficiency
- Nephrotic syndrome
- Pancreatic duct obstruction
- Pancreatitis*
- Renal disease* *q.v.*
- Right-sided congestive heart failure*
- Systemic lupus erythematosus
- Uraemia

Idiopathic disease

- Lymphangiectasia

Infection

*Bacterial**, e.g.

Campylobacter spp.

Clostridium spp.

E. coli

Salmonella spp.

Staphylococcus spp.

Small intestinal bacterial overgrowth/antibiotic-responsive diarrhoea

Fungal

*Helminths**

Hookworm

Roundworm

Tapeworm

Whipworm

*Protozoal**, e.g.

Cryptosporidiosis

- *Giardia* spp.

Rickettsial

*Viral**, e.g.

Coronavirus

Feline leukaemia virus (C)

Parvovirus

Inflammatory/immune-mediated disease

Basenji enteropathy (D)

Duodenal ulceration

Haemorrhagic gastroenteritis*

Inflammatory bowel disease*

- Eosinophilic
- Granulomatous
- Lymphoplasmacytic

Protein-losing enteropathy and nephropathy of the soft-coated wheaten terrier (D)

Motility disorders, e.g.

- Dysautonomia
- Enteritis
- Functional obstruction (ileus)
- Hypoalbuminaemia
- Hypokalaemia

Neoplasia*, e.g.

- Adenocarcinoma
- Carcinoid tumours
- Leiomyoma
- Lymphoma
- Mast cell tumours
- Sarcoma

*Partial obstruction**

- Foreign body
- Intussusception
- Neoplasia
- Stricture

LARGE INTESTINAL DIARRHOEA**Diet***

- Dietary hypersensitivity
- Dietary indiscretion

Drugs/toxins

- Acetazolamide
- Adder bite
- Allopurinol
- Aminophylline
- Amoxicillin
- Amphotericin B
- Ampicillin
- Atenolol
- Benzalkonium chloride
- Bethanechol
- Blue-green algae
- Borax

Calcium edetate
 Carbamate insecticides
 Cardiac glycosides
 Cephalixin
 Chloramphenicol
 Chlorphenamine
 Colchicine
 Cotoneaster
 Cyclophosphamide
 Cyclosporin
 Cytarabine
 Daffodil
 Diazoxide
 Diclofenac sodium
 Dieffenbachia
 Doxycycline
 Glyphosphate
 Honeysuckle
 Horse chestnut
 Ibuprofen
 Indomethacin
 Iron/iron salts
 Laburnum
 Lactulose
 Levamisole
 Lithium
 Loperamide
 Mebendazole
 Metaldehyde
 Methiocarb
 Misoprostol
 Mistletoe
 Mitotane
 Naproxen
 Nicotinamide
 NPK fertilisers
 NSAIDs
 Organophosphates
 Oxytetracycline
 Pamidronate

Pancreatic enzyme supplementation
Paracetamol
Paraquat
Pentoxifylline
Petroleum distillates
Phenoxy acid herbicides
Piperazine
Poinsettia
Procainamide
Pyracantha
Pyrethrin/pyrethroids
Pyridostigmine
Quinidine
Rhododendron
Rowan
Salt
Selective serotonin reuptake inhibitors
Sotalol
Theobromine
Theophylline
Vitamin D rodenticides
Yew
Zinc sulphate

Extra-intestinal conditions

Metastatic neoplasia
Neurological disease leading to ulcerative colitis
Pancreatitis
Toxaemia
Uraemia

Idiopathic conditions

Fibre-responsive large-bowel diarrhoea
Irritable bowel syndrome

Infection

Bacterial, e.g.*

Campylobacter spp.

Clostridium difficile

Clostridium perfringens
E. coli
Salmonella spp.
Yersinia enterocolitica

Fungal, e.g.
 Histoplasmosis
 Protothecosis

Parasitic, e.g.*
 Amoebiasis
Ancylostoma spp.
Balantidium coli
 Cryptosporidiosis
Giardia spp.
Heterobilharzia americana
 Roundworm
 Tapeworm
Tritrichomonas foetus (C)
Uncinaria spp.
 Whipworm

Protozoal, e.g.
 Toxoplasmosis

*Viral**
 Coronavirus
 Feline immunodeficiency virus (C)
 Feline infectious peritonitis (C)
 Feline leukaemia virus (C)
 Parvovirus

Inflammatory/Immune-mediated disease

Histiocytic ulcerative colitis or granulomatous
 colitis of boxers (and other breeds) (D)
 Inflammatory bowel disease*

Neoplasia*

Benign, e.g.
 Adenomatous polyps
 Leiomyoma

Malignant, e.g.

Adenocarcinoma

Lymphoma

Obstruction

Caecal inversion

Foreign body*

Intussusception*

Neoplasia

Stricture

Miscellaneous

Secondary to chronic small intestinal disease

Stress

Note: Perirectal diseases, e.g. anal sac disease, anal furunculosis, perineal hernia, rectal prolapse and perianal adenoma, may cause signs mimicking large-bowel disease (tenesmus, haematochezia, mucoid stool).

1.2.7 Melaena

Extra-gastrointestinal disease

Hypoadrenocorticism (D)

Liver disease* *q.v.*

Mastocytosis

Pancreatitis*

Septicaemia*

Shock* *q.v.*

Systemic hypertension* *q.v.*

Uraemia* *q.v.*

Vasculitis, e.g.

- Rocky Mountain spotted fever

Coagulopathy q.v., e.g.

Anticoagulant toxicity* *q.v.*

Congenital clotting factor deficiency *q.v.*

Disseminated intravascular coagulation

Thrombocytopenia *q.v.*

Thrombocytopathia

von Willebrand's disease (D)

Gastrointestinal disease

Enteritis*
 Gastritis*
 Oesophagitis
 Parasites*

*Gastrointestinal ulceration**

Gastrinoma
Helicobacter infection
 Inflammatory gastroenteric disease*
 Neurological disease
 Post foreign body*
 Stress
 Uraemia* *q.v.*
 Drugs, e.g.
 • Glucocorticoids*
 • NSAIDs*

Ischaemia, e.g.

Mesenteric avulsion
 Mesenteric thrombosis/infarction
 Mesenteric volvulus
 Post gastric dilatation/volvulus* (D)

Neoplasia, e.g.*

Adenocarcinoma
 Leiomyoma
 Leiomyosarcoma
 Lymphoma

Ingestion of blood

Nasal disease (see also Epistaxis), e.g.

Coagulopathy* *q.v.*
 Neoplasia*
 Trauma*

Oropharyngeal haemorrhage

Coagulopathy* *q.v.*
 Neoplasia*
 Trauma*

Respiratory disease (see also Haemoptysis), e.g.

Coagulopathy* *q.v.*

Exercise-induced pulmonary haemorrhage

Parasites, e.g. *Angiostrongylus vasorum*

Neoplasia*

Ruptured aneurysm

Trauma*

1.2.8 Haematemesis

Extra-gastrointestinal disease

Hypoadrenocorticism (D)

Liver disease* *q.v.*

Mastocytosis

Pancreatic disease

Septicaemia*

Shock*

Systemic hypertension* *q.v.*

Uraemia* *q.v.*

Coagulopathies q.v., e.g.

Anticoagulant toxicity*

Congenital clotting factor deficiency

Disseminated intravascular coagulation

Thrombocytopenia

Thrombocytopathia

von Willebrand's disease(D)

Toxins, e.g.

Calcipotriol

Paraquat

Vasculitis, e.g.

Rocky Mountain spotted fever

Gastrointestinal disease

Gastritis*

Haemorrhagic gastroenteritis

Oesophagitis

*Gastrointestinal ulceration**

Drugs, e.g.

- NSAIDs
- Glucocorticoids*

Gastrinoma

Helicobacter infection*

Inflammatory gastroenteric disease*

Neurological disease

Post foreign body*

Stress

Systemic mastocytosis

Uraemia*

Ischaemia, e.g.

Post gastric dilatation/volvulus* (D)

Neoplasia, e.g.*

- Adenocarcinoma
- Lymphoma

Ingestion of blood

Nasal disease (see also Epistaxis), e.g.

Coagulopathy* *q.v.*

Infection, e.g. fungal

Neoplasia*

Trauma*

Oropharyngeal haemorrhage

Coagulopathy* *q.v.*

Neoplasia*

Trauma*

Respiratory disease (see also Haemoptysis), e.g.

Coagulopathy* *q.v.*

Exercise-induced pulmonary haemorrhage

Parasites

Neoplasia*

Ruptured aneurysm

Trauma*

1.2.9 Haematochezia

Drugs

Glucocorticoids

Extra-gastrointestinal disease

Neurological disease leading to ulcerative colitis

Coagulopathies q.v., e.g.

Anticoagulant toxicity*

Congenital clotting factor deficiency *q.v.*

Disseminated intravascular coagulation

Thrombocytopenia *q.v.*

von Willebrand's disease (D)

Perirectal disease, e.g.

Anal furunculosis*

Anal sac disease*

Perianal adenoma*

Perineal hernia*

Rectal prolapse*

Gastrointestinal disease

Algal, e.g.

Protothecosis

Bacterial, e.g.*

Campylobacter spp.

Clostridium spp.

E. coli

Salmonella spp.

Dietary

Dietary hypersensitivity

Dietary indiscretion

Fungal, e.g.

Histoplasmosis

Idiopathic conditions

Fibre-responsive large-bowel diarrhoea

Caecal disease, e.g.

- Typhlitis
- Inversion

Haemorrhagic gastroenteritis

Irritable bowel syndrome

Inflammatory/immune-mediated disease

Histiocytic ulcerative colitis or granulomatous colitis
of boxers (and other breeds) (D)

Inflammatory bowel disease*

Neoplasia

- *Benign, e.g.*
 - Adenomatous polyps
 - Leiomyoma
- *Malignant, e.g.*
 - Adenocarcinoma
 - Lymphoma

Obstructive disease

Foreign body*

Intussusception*

Parasitic*, e.g.

Amoebiasis

Ancylostoma spp.

Balantidium coli

Cryptosporidiosis

Giardia spp.

Heterobilharzia americana

Roundworm

Tapeworm

- Toxoplasmosis

Tritrichomonas foetus (C)

Uncinaria spp.

Whipworm

*Viral**

- Coronavirus
- Feline immunodeficiency virus (C)
- Feline infectious peritonitis (C)
- Feline leukaemia virus (C)
- Parvovirus

1.2.10 Constipation/obstipation**Behavioural factors*, e.g.**

- Change of daily routine
- Dirty litter box
- Hospitalisation
- Inadequate water intake
- Inadequate exercise
- Novel litter substrate

Congenital conditions

- Atresia ani
- Atresia coli

Diet

- Ingestion of hair, bones and foreign material
- Low-fibre diets

Drugs/toxins

- Aluminium antacids
- Butylscopolamine (hyoscine)
- Diphenoxylate
- Diuretics
- Loperamide
- Opioids
- Propantheline bromide
- Sucralfate
- Verapamil
- Vincristine

Idiopathic conditions

- Idiopathic megacolon*

Neuromuscular disease

Feline dysautonomia (C) (also reported rarely in dogs)

Lumbosacral disease*

Pelvic nerve disease, e.g.

- Traumatic*

Obstructive disease

Intraluminal/intramural

Diverticulum

Foreign body*

Neoplasia*, e.g.

- Adenoma
- Leiomyoma
- Leiomyosarcoma
- Lymphoma

Stricture

Extraluminal

Granuloma

Neoplasia*

Pelvic fracture*

Perineal hernia*

Prostatic disease (D)

- Abscess
- Benign prostatic hypertrophy*
- Neoplasia
- Prostatitis*

Sublumbar lymph node disease

Painful conditions

Anal furunculosis*

Anal or rectal inflammation*

Anal or rectal mass*

Anal or rectal stricture

Anal sac disease*, e.g.

- Abscess
- Anal sacculitis

Orthopaedic disease causing pain and failure to posture

Pelvic trauma (soft tissue or bony)*

Perianal fistula
Proctitis
Spinal cord disease*

Prolonged colonic distension, e.g.

Narrowing of the pelvic canal post fracture*

Systemic disease

Dehydration*
Hypercalcaemia *q.v.*
Hypokalaemia* *q.v.*
Hypothyroidism* (D)
Hyperparathyroidism

1.2.11 Faecal tenesmus/dyschezia**Anal sac disease, e.g.**

Abscess/cellulitis
Anal sacculitis*
Impaction
Neoplasia
Stricture

Caudal abdominal mass***Colorectal disease, e.g.**

Colitis *q.v.*
Congenital disease
Foreign body
Large intestinal neoplasia
Megacolon
Polyp
Stricture

Constipation/obstipation *q.v.***Diet**

Excess bone
Excess fibre

Perianal disease, e.g.

- Anal furunculosis/perianal fistulas* (D)
- Perianal adenoma*
- Perineal hernia*
- Rectal prolapse*

Pelvic narrowing

Prostatic disease (D)

- Abscess
- Benign prostatic hypertrophy*
- Neoplasia
- Paraprostatic cyst
- Prostatitis*

Trauma, e.g.

- Pelvic fracture*

Urogenital disease*, e.g.

- Lower urinary tract disease
- Urethral obstruction

1.2.12 Faecal incontinence

Anal sphincter incompetence

- Myopathy
- Neoplasia*
- Trauma*

Iatrogenic disease, e.g.

- Damage to anal sphincter during anal saccullectomy

Neurological, e.g.

- Cauda equina syndrome
- Degenerative myelopathy/CDRM* (D)
- Distemper encephalomyelitis
- Dysautonomia
- Lumbosacral stenosis
- Myelodysplasia/spinal dysraphism

- Peripheral neuropathy
- Polyneuropathy
- Sacrocaudal dysgenesis
- Spinal arachnoid cysts
- Spinal trauma

Perianal disease, e.g.

- Perianal fistula*
- Neoplasia

Reservoir incontinence

- Behavioural
- CNS disease *q.v.*
- Colitis*
- Constipation
- Diet*
- Neoplasia*
- Perineal hernia

1.2.13 Flatulence/borborygmus

Aerophagia*

- Competitive/aggressive eating
- Nervous animal

Diet

- High-fibre diets
- Milk products/lactase deficiency
- Spoiled food

Drugs/toxins, e.g.

- Lactulose
- Metaldehyde

Maldigestion, e.g.

- Exocrine pancreatic insufficiency

Malabsorption, e.g.

- Inflammatory bowel disease

1.3 Cardiorespiratory historical signs

1.3.1 Coughing

Drugs/toxins/irritants

Benzalkonium chloride ingestion
Chemical fume inhalation
Potassium bromide (C)
Smoke inhalation

Infection

Bacterial, e.g.

Bordetellosis*
• Mycoplasma

Fungal, e.g.

Coccidioidomycosis

Viral, e.g.

Canine distemper*

Parasitic

Aelurostrongylus abstrusus (C)
Angiostrongylus vasorum (D)
Dirofilaria immitis
Oslerus osleri (D)
Paragonimiasis

Inflammatory/immune-mediated disease

Asthma* (C)
Chronic bronchitis*

Miscellaneous conditions

Aspiration pneumonia
Idiopathic pulmonary fibrosis
Inhaled foreign body
Laryngeal paralysis

Left atrial enlargement*
Lung lobe torsion
Primary ciliary dyskinesia

Neoplasia

Adenocarcinoma
Alveolar carcinoma
Bronchial gland carcinoma
Metastatic disease
Squamous cell carcinoma

Pulmonary haemorrhage

Coagulopathy *q.v.*
Exercise induced
Neoplasia*
Traumatic

- *Angiostrongylus vasorum* (D)

Pulmonary oedema (D)

Airway obstruction
Cardiogenic*
Electrocution
Hypoglycaemia
Hypoproteinaemia *q.v.*
Iatrogenic
Ketamine
Neurological

- Cranial trauma
- Seizures

Obstruction of lymphatic drainage
Primary alveolar–capillary membrane injury
Re-expansion
Strangulation

1.3.2 Dyspnoea/tachypnoea

See Section 2.3.1.

1.3.3 Sneezing and nasal discharge

Anatomical deformities

Acquired nasopharyngeal stenosis
Cleft palate
Oronasal fistula

Congenital disease

Ciliary dyskinesia

Dental disease

Tooth root abscess*

Infection

Bacterial

*Bordetella bronchiseptica**
Chlamydomphila spp.*
Coliforms
Mycoplasma spp.
Pasteurella spp.
Staphylococcus spp.
Streptococcus spp.

Fungal

Aspergillosis
Cryptococcosis
Exophiala jeanselmei
Penicillium spp.
Phaeohyphomycosis
Rhinosporidium seeberi

Parasitic

Cuterebra spp.
Eucoleus böehmi
Linguatula serrata
Pneumonyssoides caninum

Viral

Canine distemper virus* (D)
Canine infectious tracheobronchitis* (D)

Feline calicivirus* (C)
Feline herpesvirus* (C)
Feline immunodeficiency virus* (C)
Feline leukaemia virus* (C)
Feline poxvirus
Feline reovirus (C)

Inflammatory disease

Allergic rhinitis*
Granulomatous rhinitis
Lymphoplasmacytic rhinitis*
Nasopharyngeal polyp* (C)

Neoplasia

Adenocarcinoma*
Chondrosarcoma
Fibrosarcoma
Haemangiosarcoma
Lymphoma*
Mast cell tumour
Melanoma
Neuroblastoma
Osteosarcoma
Squamous cell carcinoma*
Transmissible venereal tumour
Undifferentiated carcinomas*

Physical

Foreign body*
Irritant gases
Trauma

Systemic disease (see also Epistaxis)

Coagulopathy *q.v.*
Hypertension *q.v.*
Hyperviscosity syndrome
Vasculitis

- Ehrlichiosis
- Rocky Mountain spotted fever

1.3.4 Epistaxis

Coagulopathies *q.v.*

Angiostrongylus vasorum infection

Coagulation factor deficiency *q.v.*

Platelet disease

- Thrombocytopathia *q.v.*
- Thrombocytopenia *q.v.*

Miscellaneous conditions

Hypertension *q.v.*

Hyperviscosity syndrome e.g.

- Hyperlipidaemia,
- Polycythaemia

Increased capillary fragility

Thromboembolism

Nasal disease

Dental disease

Oronasal fistula

Tooth root abscess*

Infection

Bacterial

- *Mycoplasma* spp.*
- *Pasteurella* spp.*

Fungal

- Aspergillosis
- *Cryptococcus* spp.
- *Exophiala jeanselmei*
- *Penicillium* spp.
- Phaeohyphomycosis
- *Rhinosporidium seeberi*

Parasitic

- *Cuterebra*
- *Eucolus böehmi*
- *Linguatula serrata*
- *Pneumonyssoides caninum*

Viral

- Canine distemper virus* (D)
- Canine infectious tracheobronchitis* (D)
- Feline calicivirus* (C)
- Feline herpesvirus* (C)
- Feline immunodeficiency virus* (C)
- Feline leukaemia virus* (C)

Inflammatory disease

Allergic rhinitis*

Lymphoplasmacytic rhinitis*

Neoplasia

Adenocarcinoma*

Chondrosarcoma

Fibrosarcoma

Haemangiosarcoma

Lymphoma*

Mast cell tumour

Melanoma

Osteosarcoma

Squamous cell carcinoma*

Transmissible venereal tumour

Undifferentiated carcinomas*

Physical

Trauma*

1.3.5 Haemoptysis

Cardiovascular disease

Arteriovenous fistula

Bacterial endocarditis

Dirofilaria immitis (D)

Pulmonary oedema* *q.v.*

Iatrogenic

Diagnostic procedures, e.g.

- Bronchoalveolar lavage
- Bronchoscopy

- Lung aspirate
- Trans-tracheal wash

Endotracheal intubation*

Pulmonary disease

Pulmonary hypertension

Pulmonary thromboembolism

Infection

Bacterial

- Nocardiosis
- Pneumonia*
- Pulmonary abscessation

Fungal

- Blastomycosis
- Coccidioidomycosis
- Histoplasmosis

Parasitic

- *Aelurostrongylus abstrusus* (C)
- *Angiostrongylus* (D)
- *Capillaria aerophila*
- *Dirofilaria immitis* (D)
- *Paragonimus kellicotti*

Viral

- Infectious tracheobronchitis*

Inflammatory

Bronchiectasis

Bronchopneumonia

Chronic bronchitis* (D)

Pulmonary infiltrate with eosinophils

Neoplastic

Adenocarcinoma

Chondrosarcoma

Metastatic tumours*

Squamous cell carcinoma

Physical

Abscess

Bronchial gland carcinoma

Foreign body

Lung lobe torsion

Trauma, e.g.

- Pulmonary contusions

Systemic disease

Coagulation factor deficiency *q.v.*

Thrombocytopathia *q.v.*

Thrombocytopenia *q.v.*

1.3.6 Exercise intolerance

Cardiovascular disease, (see Section 1.1.7) e.g.

Arrhythmias

Congestive heart failure*

Cyanotic heart disease *q.v.*

Myocardial dysfunction

Obstruction to ventricular outflow

Drugs, e.g.

Drugs causing hypotension

Metabolic/endocrine disease, e.g.

Anaemia*

Hyperthyroidism* (C)

Hypoadrenocorticism (D)

Hypoglycaemia *q.v.*

Hypokalaemic polymyopathy

Hypothyroidism* (D)

Malignant hyperthermia

Neuromuscular/musculoskeletal disease, e.g.

Botulism

Cervical myelopathy (D)

Coonhound paralysis

Ischaemic neuromyopathy* (C)

Intermittent claudication

Lumbosacral pain

Myasthenia gravis

Myopathies

- Congenital
- Hypokalaemic
- Toxic

Peripheral neuropathy *q.v.*

Polyarthrititis

Polymyositis

Protozoal myositis

Tick paralysis

Respiratory disease *q.v.*, e.g.

Idiopathic pulmonary fibrosis

Pleural effusion*

Pulmonary oedema*

Upper airway obstruction *q.v.*

1.4 Dermatological historical signs

1.4.1 Pruritus

Drugs/toxins

Methimazole

Paracetamol

Endocrine disorders

Calcinosis cutis*

Hyperthyroidism* (C)

Predisposing to pyoderma

- Hyperadrenocorticism
- Hypothyroidism* (D)

Environmental

Contact irritant dermatitis*

Sunburn/solar dermatitis*

Immune-mediated disease

Drug eruptions

Discoid lupus erythematosus

Systemic lupus erythematosus

Allergy/hypersensitivity

Atopy*

Contact allergy*

Food hypersensitivity*

Hormonal hypersensitivity (D)

Parasite hypersensitivity*, e.g.

- Fleas
- Mosquitoes

Pemphigus complex

Pemphigus erythematosis

Pemphigus foliaceus

Pemphigus vegetans

Pemphigus vulgaris

Bullous pemphigoid

Infection*Bacterial*

Deep pyoderma*

Surface pyoderma/acute moist dermatitis (wet eczema*)

Superficial bacterial folliculitis*

Fungal

Candidiasis

Dermatophytosis*

Malassezia dermatitis*

Pythiosis

Parasitic

Cheyletiellosis

Demodicosis*

Dermanyssus gallinae

Dirofilariasis

Dracunculiasis

Fleas*

Hookworm dermatitis

Lynxacarus radovskyi (C)*Notoedres cati* (C)*Otobius megnini* (D)*Otodectes cynotis*

Pediculosis

Pelodera dermatitis

Pneumonyssoides caninum (D)
Sarcoptic mange* (D)
Schistosomiasis
Trombiculiasis*

Keratinisation disorders

Acne*
Idiopathic facial dermatitis
Primary seborrhoea
Vitamin A-responsive dermatosis

Miscellaneous

Feline hypereosinophilic syndrome (C)
Idiopathic sterile granulomatous dermatitis
Sterile eosinophilic pustulosis
Subcorneal pustular dermatosis
Urticaria pigmentosa
Waterline disease of black Labradors (D)
Zinc-responsive dermatosis

Neoplasia

Cutaneous T cell lymphoma
Mast cell tumour*
Mycosis fungoides
Other neoplasia with secondary pyoderma
Paraneoplastic pruritus

Neurological, e.g.

Syringohydromyelia

1.5 Neurological historical signs

1.5.1 Seizures

INTRACRANIAL

Congenital

Ceroid lipofuscinosis
Chiari-like malformation
Cortical dysplasia

Hydrocephalus
Intracranial arachnoid cysts
Lissencephaly
Lysosomal storage diseases
Organic acidurias, e.g.

- L-2-hydroxyglutaricaciduria

Idiopathic*

Infectious

Bacterial, e.g.

Nocardiosis
Pasteurella spp.
Staphylococcus spp.

Fungal

Aspergillosis
Blastomycosis
Coccidioidomycosis
Cryptococcosis
Histoplasmosis
Mucormycosis

Parasitic

Aberrant migration of *Cuterebra* spp.
Dirofilariasis

Protozoal, e.g.

Neosporosis (D)
Toxoplasmosis

Rickettsial encephalitis

Ehrlichiosis/anaplasmosis
Rocky Mountain spotted fever

Viral

Canine distemper* (D)
Canine herpesvirus (D)
Eastern equine encephalitis
Feline immunodeficiency virus* (C)

Feline infectious peritonitis* (C)
 Feline leukaemia virus* (C)
 Pseudorabies
 Rabies

Inflammatory/immune-mediated disease

Breed-specific necrotising
 meningoencephalitis
 Distemper vaccine associated (D)
 Eosinophilic meningoencephalitis
 Granulomatous meningoencephalomyelitis* (D)
 Steroid-responsive meningoencephalitis

Neoplasia

Local extension

Middle-ear tumour
 Nasal/paranasal sinus tumour
 Pituitary tumour
 Skull tumour

Metastatic, e.g.

Haemangiosarcoma
 Lymphoma
 Malignant melanoma
 Mammary carcinoma
 Prostatic carcinoma
 Pulmonary carcinoma
 Teratoma

Primary intracranial

Astrocytoma
 Choroid plexus tumours
 Ependymoma
 Ganglioblastoma
 Glioma
 Medulloblastoma
 Meningioma
 Neuroblastoma
 Oligodendroglioma

Physical

Trauma

Vascular

Haemorrhage, e.g.

Angiostrongylus vasorum

Coagulopathy *q.v.*

Feline ischaemic encephalopathy (C)

Hypertension *q.v.*

Trauma

Infarction, e.g.

Thromboembolism

EXTRACRANIAL**Drugs/toxins**

Alphachloralose

Arsenic

Baclofen

Blue-green algae

Borax

Cannabis

Carbamate

Doxapram

Ethylene glycol

Glyphosphate

Honeysuckle

Hymenoptera stings

Ibuprofen

Iodine-containing myelographic contrast media

Laburnum

Lead

Lignocaine

Metaldehyde

Metronidazole

Mexiletine

Mistletoe

Organophosphates

Paracetamol

Petroleum distillates
Phenoxy acid herbicides
Piperazine
Plastic explosives
Pyrethrin/pyrethroids/permethrin
Risperidone
Salt
Selective serotonin reuptake inhibitors
Strychnine
Terfenadine
Theobromine
Theophylline
Tricyclic antidepressants
Vitamin D rodenticides
Yew

Metabolic

- Electrolyte imbalances*, e.g.
- Hypernatraemia *q.v.*
 - Hypocalcaemia *q.v.*
 - Hyponatraemia *q.v.*
- Hepatic encephalopathy* *q.v.*
- Hypoglycaemia *q.v.*
 - Renal disease* *q.v.*

Nutritional

Thiamine deficiency

1.5.2 Trembling/shivering

Drugs/toxins

5-Fluorouracil
Baclofen
Benzodiazepines
Blue-green algae
Bromethalin
Caffeine
Carbamate

Guarana
Hexachlorophene
Horse chestnut
Ivermectin
Macadamia nuts
Metaldehyde
Mexiletine
Mycotoxins
Risperidone
Organochlorines
Organophosphates
Petroleum distillates
Plastic explosives
Piperazine
Pyrethrin/pyrethroids/permethrin
Rhododendron
Salbutamol
Salt
Strychnine
Terbutaline
Theobromine
Theophylline
Tricyclic antidepressants
Yew
Zinc phosphate

Metabolic

Hepatic encephalopathy *q.v.**
Hyperadrenocorticism/hypoadrenocorticism (D)
Hyperkalaemia *q.v.*
Hypocalcaemia *q.v.*
Hypoglycaemia *q.v.*
Primary hyperparathyroidism
Uraemia *q.v.**

Neurological

Abiotrophies
Cerebellar disease *q.v.*
Central nervous system inflammatory disease
Cerebrospinal hypomyelination and dysmyelination
Corticosteroid responsive tremor syndrome ('white dog shaker disease')

Idiopathic head nod of Dobermanns and bulldogs

Lumbosacral disease, e.g.

- Disc herniation
- Discospondylitis
- Neoplasia
- Stenosis

Lysosomal storage disease

Neuroaxonal dystrophy (D)

Nerve root compression

Niemann–Pick disease (C)

Peripheral neuropathies *q.v.*

Primary orthostatic tremor

Senility

Spongiform encephalopathy

Physiological

Ballistocardiographic*

Fatigue/weakness*

Fear*

Reduced environmental temperature*

1.5.3 Ataxia

FOREBRAIN

Congenital

Dandy–Walker syndrome

Hydrocephalus

Intra-arachnoid cyst

Degenerative

Leukodystrophy

Lysosomal storage disease

Mitochondrial encephalopathy

Multi-system neuronal degeneration

Spongy degeneration

Immune-mediated disease/infection

Encephalitis *q.v.*

Feline spongiform encephalopathy

Metabolic

- Electrolyte/acid–base disorders *q.v.* *
- Hepatic encephalopathy *q.v.* *
- Hypoglycaemia *q.v.*
- Uraemic encephalopathy *q.v.* *

Neoplasia

- Choroid plexus tumours
- Dermoid cyst
- Ependymoma
- Epidermoid cyst
- Glioma
- Lymphoma
- Medulloblastoma
- Meningioma
- Metastatic tumour

Vascular

- Cerebrovascular accident

BRAINSTEM/CENTRAL VESTIBULAR DISORDERS**Congenital**

- Chiari-like malformation
- Hydrocephalus
- Intra-arachnoid cysts

Degenerative

- Lysosomal storage disorders

Drugs

- Metronidazole

Immune mediated/infectious

- Feline spongiform encephalopathy (C)
- Meningoencephalitis *q.v.*

Metabolic

- Electrolyte abnormalities* *q.v.*
- Hepatic encephalopathy* *q.v.*
- Uraemic encephalopathy* *q.v.*

Neoplastic

- Choroid plexus tumours
- Dermoid cyst
- Epidermoid cyst
- Glioma
- Lymphoma
- Medulloblastoma
- Meningioma
- Metastatic tumour

Nutritional

- Thiamine deficiency

Trauma

Vascular

- Cerebrovascular accident

CEREBELLUM (generally ataxia without conscious proprioceptive deficits)

Congenital

- Feline cerebellar hypoplasia (C)

Degenerative

- Cerebellar cortical degeneration
- Gangliosidosis
- Hereditary ataxia of Jack Russell and smooth-coated fox terriers (D)
- Leukoencephalomalacia (D)
- Neuroaxonal dystrophy (D)
- Neuronal vacuolation and spinocerebellar degeneration (D)
- Storage diseases

Drugs/toxins

- Heavy metals
- Organophosphates

Immune mediated/infectious *q.v.*

- In utero* infection with feline parvovirus (C)

Metabolic

Thiamine deficiency

Neoplastic

Choroid plexus tumours

Dermoid cyst

Epidermoid cyst

Glioma

Lymphoma

Medulloblastoma

Meningioma

Metastatic tumour

Vascular

Cerebrovascular accident *q.v.*

PERIPHERAL VESTIBULAR DISEASE**Congenital**

Lymphocytic labyrinthitis

Non-inflammatory cochlear degeneration

Drugs/toxins

Aminoglycosides

Chlorhexidine

Topical iodophors

Idiopathic

Canine geriatric vestibular disease

Feline idiopathic vestibular disease

Immune mediated/infectious

Nasopharyngeal polyps*

Otitis media/interna*

- Primary secretory otitis media in the Cavalier King Charles Spaniel
- Secondary to otitis externa

Metabolic

Hypothyroidism* (D)

Neoplastic

Middle- or inner-ear tumours, e.g.

- Adenocarcinoma
- Chondrosarcoma
- Fibrosarcoma
- Lymphoma
- Osteosarcoma
- Squamous cell carcinoma

Traumatic

SPINE

Congenital

- Atlanto-occipital dysplasia
- Atlantoaxial subluxation
- Cartilaginous exostoses
- Dermoid sinus
- Epidermoid cyst
- Hereditary myelopathy
- Meningoceles
- Sacral osteochondritis dissecans
- Sacrocaudal dysgenesis
- Spina bifida
- Spinal arachnoid cyst
- Spinal dysraphism
- Syringohydromyelia (D)
- Tethered cord syndrome
- Vertebral malformations *q.v.*

Degenerative

- Cervical fibrotic stenosis
- Cervical spondylomyelopathy
- Degenerative disc disease* (D)
- Degenerative myelopathy*
- Leukoencephalomalacia
- Lumbosacral disease
- Lysosomal storage disease
- Neuroaxonal dystrophy
- Neuronal vacuolation and spinocerebellar degeneration (D)

Other leukodystrophies
Synovial cysts

Idiopathic

Calcinosis circumscripta
Disseminated idiopathic skeletal hyperostosis

Immune mediated

Cauda equina neuritis
Granulomatous meningoencephalomyelitis*
Steroid-responsive meningitis–arteritis

Infectious

Discospondylitis
Foreign body
Meningomyelitis
Spinal epidural empyema

Neoplastic

Extradural

Chondrosarcoma
Fibrosarcoma
Haemangiosarcoma
Lipoma
Lymphoma
Malignant nerve sheath tumour
Meningioma
Metastatic disease
Myeloma
Osteosarcoma

Intradural extramedullary

Malignant nerve sheath tumour
Meningioma
Metastatic

Intramedullary

Astrocytoma
Ependymoma

Metastatic tumour
Oligodendroglioma

Nutritional

Hypervitaminosis A
Thiamine deficiency

Traumatic

Brachial plexus avulsion
Dural tear
Fracture*
Gunshot wound
Luxation*
Sacrocaudal injury
Traumatic disc injury*

Vascular

Fibrocartilaginous embolism*
Fat-graft necrosis
Myelomalacia
Spinal cord haematoma
Spinal cord haemorrhage
Vascular anomaly

PERIPHERAL NERVES (mono- or polyneuropathies)

Degenerative

Birman cat distal polyneuropathy (C)
Boxer dog progressive axonopathy (D)
Giant axonal neuropathy of German shepherds (D)
Globoid cell leukodystrophy
Golden retriever hypomyelinating polyneuropathy (D)
Hereditary/idiopathic polyneuropathy of Alaskan malamutes (D)
Hypertrophic neuropathy
Hypomyelinating polyneuropathy
Laryngeal paralysis–polyneuropathy complex
Lysosomal storage diseases

- Fucosidosis (D)
- Globoid cell leukodystrophy
- Glycogen storage disease type IV
- Niemann–Pick disease (C)

Mucopolysaccharidosis IIIA (D)
Sensory neuropathy (D)

Immune mediated/infectious

Chronic inflammatory demyelinating polyneuropathy
Feline leukaemia virus associated
Polyradiculoneuritis
Protozoal
Sensory ganglioradiculoneuritis

Neoplastic

Lymphoma
Malignant nerve sheath tumours
Myelomonocytic neoplasia
Paraneoplastic neuropathy

Traumatic

Bite wounds*
Iatrogenic
Missile injuries
Traction injuries

Vascular

Ischaemic neuromyopathy*
Neurogenic claudication

SYSTEMIC

Drugs/toxins

Alphachloralose
Baclofen
Benzodiazepines
Blue-green algae
Butorphanol
Cannabis
Carbamate
Codeine
Daffodil
Dichlorophen
Diclofenac

Ethylene glycol toxicity
 Fentanyl and other sedatives and tranquillisers
 Glyphosphate
 Horse chestnut
 Ivermectin
 Loperamide
 Metaldehyde
 Methiocarb
 Metronidazole
 Naproxen
 Nitroscanate (C)
 Organophosphates
 Paracetamol
 Paraquat
 Phenobarbitone
 Phenoxy acid herbicides
 Phenytoin
 Piperazine
 Plastic explosives
 Potassium bromide
 Primidone
 Pyridoxine (Vitamin B6)
 Selective serotonin reuptake inhibitors
 Terfenadine
 Thallium
 Theobromine
 Tricyclic antidepressants
 Vincristine
 Walker Hound mononeuropathy
 Yew

Metabolic

Electrolyte/acid–base disorders*
 Endocrine disease, e.g.
 • Diabetes mellitus*
 • Hypothyroidism* (D)
 Hepatic encephalopathy*
 Hyperadrenocorticoid neuropathy
 Hyperchylomicronaemia
 Insulinoma/hypoglycaemia

Nutritional

Vitamin B6 (pyridoxine) overdose

1.5.4 Paresis/paralysis**SPINAL DISEASE****Congenital**

Atlantoaxial subluxation
Atlanto-occipital dysplasia
Cartilaginous exostoses
Dermoid sinus
Epidermoid cyst
Hereditary myelopathy
Meningoceles
Osteochondromatosis
Sacrocaudal dysgenesis
Sacral osteochondritis dissecans
Spina bifida
Spinal arachnoid cyst
Spinal dysraphism
Syringohydromyelia (D)
Vertebral malformations *q.v.*

Degenerative

Afghan hound hereditary myelopathy (D)
Calcinosis circumscripta
Cervical spondylomyelopathy
Degenerative disc disease* (D)
Degenerative myelopathy* (D)
Labrador retriever axonopathy (D)
Lumbosacral disease
Lysosomal storage disease
Neuronal vacuolation and spinocerebellar degeneration (D)
Rottweiler leukoencephalomyelopathy (D)
Other leukodystrophies
Synovial cysts

Idiopathic

Calcinosis circumscripta
Disseminated idiopathic skeletal hyperostosis

Immune mediated

- Cauda equina neuritis
- Epidural granuloma
- Granulomatous meningoencephalomyelitis*
- Steroid-responsive meningitis–arteritis

Infectious

- Discospondylitis
- Infectious meningoencephalomyelitis
- Spinal epidural empyema

Neoplastic

Extradural

- Chondrosarcoma
- Fibrosarcoma
- Haemangiosarcoma
- Lipoma
- Lymphoma
- Malignant nerve sheath tumour
- Meningioma
- Metastatic
- Multiple myeloma
- Osteosarcoma
- Plasma cell tumour

Intradural extramedullary

- Malignant nerve sheath tumour
- Meningioma
- Metastatic

Intramedullary

- Astrocytoma
- Ependymoma
- Metastatic tumour
- Oligodendroglioma

Nutritional

- Hypervitaminosis A
- Thiamine deficiency

Traumatic

Brachial plexus avulsion
Dural tear
Foreign body
Fracture*
Gunshot wound
Luxation*
Sacrocaudal injury
Traumatic disc injury*

Vascular

Fibrocartilaginous embolism*
Fat-graft necrosis
Ischaemic neuromyopathy*
Myelomalacia
Neurogenic claudication
Spinal cord haematoma
Spinal cord haemorrhage
Vascular anomaly

PERIPHERAL NERVES (mono- or polyneuropathies)**Degenerative**

Adult-onset motor neurone disease
Birman cat distal polyneuropathy (C)
Boxer dog progressive axonopathy (D)
Distal denervating disease (D)
Giant axonal neuropathy of German shepherds (D)
Golden retriever hypomyelinating polyneuropathy (D)
Hereditary/idiopathic polyneuropathy of Alaskan malamutes (D)
Hypertrophic neuropathy
Idiopathic polyneuropathy
Laryngeal paralysis–polyneuropathy complex
Lysosomal storage diseases

- Fucosidosis (D)
- Globoid cell leukodystrophy
- Glycogen storage disease type IV
- Niemann–Pick disease (C)

Mucopolysaccharidosis IIIA (D)
Rottweiler distal sensorimotor polyneuropathy (D)

Sensory neuropathy of long-haired dachshunds (D)
Spinal muscular atrophy

Drugs/toxins

Baclofen
Blue-green algae
Cannabis
Daffodil
Horse chestnut
Ivermectin
Methiocarb
Organophosphate
Petroleum products
Phenoxy acid herbicides
Pyrethrin/pyrethroids
Salinomycin toxicity (C)
Thallium
Vincristine
Vitamin K antagonists
Walker hound mononeuropathy (D)

Immune mediated/infectious

Acute idiopathic polyradiculoneuritis (coonhound paralysis in the USA) (D)
Brachial plexus neuritis
Chronic inflammatory demyelinating polyneuropathy
Protozoal polyradiculoneuritis
Sensory ganglioradiculoneuritis

Metabolic

Diabetic neuropathy*
Hyperchylomicronaemia
Hypothyroid neuropathy*
Primary hyperoxaluria

Neoplastic

Insulinoma
Lymphoma
Malignant nerve sheath tumours
Myelomonocytic neoplasia
Paraneoplastic neuropathy, e.g. lymphoma

Traumatic

- Bite wounds*
- Iatrogenic
- Missile injuries
- Traction injuries

Vascular

- Arterial thromboembolism
- Ischaemic neuromyopathy*
- Traumatic ischaemic neuromyopathy associated with bottom-hung pivot windows and garage doors

1.5.5 Coma/stupor**INTRACRANIAL DISEASE**

(*Note:* Especially lesions of the midbrain through the medulla that impair the ascending reticular activating system)

Congenital

- Hydrocephalus

Degenerative

- Inherited neurodegenerative diseases
 - Multi-system neuronal degeneration of cocker spaniels (D)
 - Multi-systemic chromatolytic neuronal degeneration
 - Spongiform degenerations

Inflammatory/infectious q.v.**Neoplastic***Local extension*

- Nasal tumour
- Skull osteochondroma

Metastatic

- Carcinoma
- Haemangiosarcoma

Primary

- Choroid plexus papilloma
- Glioma
- Lymphoma
- Meningioma
- Pituitary tumour

Trauma

- Head trauma
- Intracranial haemorrhage
- Subdural haematoma

Vascular

- Cerebrovascular accident
- Feline ischaemic encephalopathy (C)
- Hypertension *q.v.*
- Intracranial haemorrhage

EXTRACRANIAL DISEASE

CNS perfusion disturbances

- Anaemia (severe/acute)* *q.v.*
- Cardiorespiratory disease*
- Haemoglobin-related toxicity
- Hyperviscosity
- Hypovolaemia (severe/acute)*

Drugs/toxins

- Alphachloralose
- Baclofen
- Barbiturates
- Benzodiazepines and other sedatives/anaesthetic agents
- Blue-green algae
- Borax
- Cannabis
- Carbamate insecticides
- Diclofenac sodium
- Ethylene glycol
- Ibuprofen
- Indomethacin

Iron
Ivermectin
Lead
Loperamide
Metaldehyde
Methiocarb
Metronidazole
Naproxen
Organophosphates
Paracetamol
Phenoxy acid herbicides
Salt
Tricyclic antidepressants
Vitamin K antagonists
Water
Xylitol
Yew

Metabolic

Electrolyte disturbances* *q.v.*
Hepatic encephalopathy*
Hypoglycaemia *q.v.*
Hypothyroid myxoedema coma
Uraemic encephalopathy *q.v.*

Nutritional

Thiamine deficiency

1.5.6 Altered behaviour: General changes

(E.g. disorientation, increased aggression, and loss of normal behaviour)

INTRACRANIAL DISEASE

Congenital

Hydrocephalus
Lissencephaly
Lysosomal storage diseases

Degenerative

Cognitive dysfunction

Drugs/toxins

Acepromazine
Benzodiazepines
Other sedatives/tranquillisers
Cannabis
Ibuprofen
Ivermectin
Petroleum distillates
Phenylpropanolamine
Risperidone
Salbutamol
Selective serotonin reuptake inhibitors
Selegiline
Terfenadine

Infectious

Bacterial

Fungal

Prion

Feline spongiform encephalopathy

Protozoal

Neosporosis
Toxoplasmosis

Viral

Canine distemper* (D)
Feline immunodeficiency virus* (C)
Feline infectious peritonitis* (C)
Feline leukaemia virus* (C)

Inflammatory/immune mediated

Granulomatous meningoencephalitis
Meningoencephalitis of unknown origin
Necrotising meningoencephalitis

Neoplastic, e.g.

- Glioma
- Lymphoma
- Meningioma
- Metastatic disease
- Pituitary

Physical

- Trauma

EXTRACRANIAL DISEASE**Metabolic**

- Hepatic encephalopathy *q.v.*
- Hypocalcaemia *q.v.*
- Hypoglycaemia *q.v.*
- Renal disease *q.v.*
- Thiamine deficiency

1.5.7 Altered behaviour: Specific behavioural problems**Aggression**

- Dominance*
- Fear*
- Hypocholesterolaemia
- Petting*
- Play*
- Possessive*
- Predatory*
- Territorial*

Inappropriate urination and defecation

- Cognitive dysfunction
- Fear
- Gastrointestinal disease *q.v.*
- Hyperexcitability
- Litter box related
 - Dirty litter

- New location of the litter box
- Unfamiliar litter

Separation anxiety

Territorial marking

Urinary tract disease (see Incontinence/inappropriate urination)

Stereotypy/compulsive behaviour

Boredom*

Frustration*

Genetic predisposition*

Physical triggers, e.g.

- Anal sac disease (tail chasing)*
- Dermatitis in over-grooming*

Neurological disease

- Brainstem lesions *q.v.*
- Forebrain disease *q.v.*
- Lumbosacral disease (tail chasing)
- Seizures* *q.v.*
- Sensory neuropathies (self-mutilation)
- Vestibular lesions (circling)* *q.v.*

Stress*

1.5.8 Deafness

Congenital conditions

Aplasia/hypoplasia of auditory receptors

Hydrocephalus

Degenerative disease

Presbycusis/age-related hearing loss*(D)

- Cochlear conductive defects
- Senile ossicle or receptor degeneration

Drugs/toxins

Antibiotics

Aminoglycosides

Amphotericin B

Ampicillin

Bacitracin
Chloramphenicol
Colistin
Erythromycin
Griseofulvin
Hygromycin B
Minocycline
Polymyxin B
Tetracyclines
Vancomycin

Antiseptics

Benzalkonium chloride
Benzethonium chloride
Cetrimide
Chlorhexidine
Ethanol
Iodine
Iodophors

Cancer chemotherapeutics

Actinomycin
Cisplatin
Cyclophosphamide
Vinblastine
Vincristine

Diuretics

Bumetanide
Ethacrynic acid
Frusemide

Metals/heavy metals

Arsenic
Gold salts
Lead
Mercury
Triethyl/trimethyl tin

Miscellaneous

Ceruminolytic agents
Danazol

- Detergents
- Digoxin
- Dimethyl sulphoxide
- Diphenylhydrazine
- Insulin
- Potassium bromide
- Prednisolone
- Propylene glycol
- Quinidine
- Salicylates

Idiopathic

Infection/inflammation

- Otitis externa* *q.v.*
- Otitis interna*
- Otitis media*

Mechanical

- Loud noise
- Trauma

Neoplasia

- Intracranial
- Middle ear
- Nasopharyngeal polyp*

1.5.9 Multifocal neurological disease

Congenital

- Hydrocephalus
- Syringohydromyelia

Degenerative

- Mitochondrial encephalopathies
- Organic acidurias
- Storage diseases

Drugs/toxins

- Alphachloralose

Baclofen
Benzodiazepines
Blue-green algae
Borax
Cannabis
Carbamate
Daffodil
Dichlorophen
Diclofenac sodium
Ethylene glycol
Glyphosphate
Horse chestnut
Ibuprofen
Ivermectin
Laburnum
Loperamide
Metaldehyde
Methiocarb
Naproxen
Organophosphates
Paracetamol
Petroleum products
Piperazine
Plastic explosives
Pyrethrin/pyrethroids
Rhododendron
Salbutamol
Salt
Selective serotonin reuptake inhibitors
Terfenadine
Theobromine
Tricyclic antidepressants
Vitamin D2/D3
Vitamin K antagonists
Yew

Idiopathic conditions

Dysautonomia

Immune-mediated disease

Granulomatous meningoencephalomyelitis

Necrotising encephalitis
 Spinal cord vasculitis
 Steroid-responsive meningitis–arteritis

Infectious

Bacterial

Bacterial encephalitis/meningitis
 Tetanus

Fungal

Aspergillosis
 Blastomycosis
 Candidiasis
 Coccidioidomycosis
 Cryptococcosis

Parasitic

Cuterebra spp.
 Toxocariasis

Protozoal

Neosporosis
 Toxoplasmosis

Rickettsial

Ehrlichiosis/anaplasmosis
 Protothecosis
 Rocky Mountain spotted fever

Viral

Canine distemper virus (D)*
 Feline immunodeficiency virus* (C)
 Feline infectious peritonitis* (C)
 Feline leukaemia virus* (C)
 Herpesvirus
 Parainfluenza virus
 Parvovirus*

Metabolic

Hepatic disease* *q.v.*

Hyperosmolarity
Hypoglycaemia *q.v.*
Hypothyroidism* (D)
Renal disease* *q.v.*

Neoplastic

Leukaemia
Lymphoma
Metastatic neoplasia

Nutritional

Thiamine deficiency

Vascular

Intracranial and/or spinal haemorrhage

- *Angiostrongylus vasorum*
- Coagulopathy
- Trauma
- Vascular anomaly

Hypertension *q.v.*
Thromboembolism

1.6 Ocular historical signs

1.6.1 Blindness/visual impairment

CENTRAL NERVOUS SYSTEM (CNS)

Brain disease

Congenital, e.g.
Hydrocephalus

Degenerative, e.g.
Neuronal ceroid lipofuscinosis
Lysosomal storage diseases

Drugs/toxins, e.g.
Ivermectin/moxidectin
Lead

Levamisole
Metaldehyde

Immune mediated/infectious, e.g.
Granulomatous meningoencephalomyelitis
Toxoplasmosis

Metabolic, e.g.
Hepatic encephalopathy *q.v.*

Neoplastic, e.g.
Lymphoma
Meningioma
Pituitary tumour

Trauma

Vascular, e.g.
Cerebrovascular accident

Optic nerve disease, e.g.

Optic nerve hypoplasia/aplasia
Optic neuritis
Space-occupying lesion compressing the optic nerve
Trauma

INTRAOCULAR/PERIOcular

Acquired

Anterior uveitis
Cataract* *q.v.*
Chorioretinitis
Chronic superficial keratitis/pannus*
Chronic uveitis*
Corneal lipid dystrophy/degeneration
Corneal oedema and endothelial dysfunction*
Endophthalmitis
Entropion
Generalised progressive retinal degeneration
Glaucoma*

Hypertensive ocular disease*

Hyphaema

Intraocular haemorrhage*

Keratoconjunctivitis sicca*

Nutritional retinal degeneration

- Taurine deficiency
- Vitamin A deficiency
- Vitamin E deficiency

Phthisis bulbi, e.g.

- Secondary to ocular trauma or chronic uveitis

Pigmentary keratitis

Retinal degeneration

Retinal detachment* *q.v.*

Retinal haemorrhage

Retinal pigment epithelial cell dystrophy

Sudden acquired retinal degeneration

Superficial keratitis

Symblepharon

Trauma*

Ulcerative keratitis and corneal scarring

Vitreous haemorrhage

*Sequelae to chronic uveitis**

Corneal oedema

Cyclitic membranes

Exudative retinal detachment

Hyphaema

Intraocular adhesions

Lens luxation

Phthisis bulbi

Secondary cataracts

Secondary glaucoma

Secondary retinal degeneration*

Congenital

Ankyloblepharon

Anophthalmia

Anterior segment dysgenesis

Collie eye anomaly

Congenital vitreous opacification

Corneal dermoid
Entropion (severe)
Microphthalmia
Persistent hyperplastic primary vitreous
Persistent hyperplastic tunica vasculosa lentis
Persistent pupillary membranes
Posterior segment coloboma
Vitreoretinal dysplasia

Lens disorders

Aphakia
Cataracts
Coloboma
Lenticulus/lentiginosus
Microphakia
Spherophakia

Retinal disorders

Congenital retinal dystrophy
Early-onset photoreceptor dystrophies

- Early retinal degeneration
- Photoreceptor dysplasia
- Rod-cone dysplasia
- Rod dysplasia

Hemeralopia
Lysosomal storage diseases
Primary retinal dysplasia
Secondary retinal dysplasia

- Idiopathic/inherited
- Intrauterine trauma
- Maternal infections
- Radiation
- Vitamin A deficiency during pregnancy

1.6.2 Epiphora/tear overflow

Impaired tear drainage

Dacryocystitis
Entropion

Imperforate/obstructed punctum
or canaliculus
Lacrimal canicular aplasia
Small lacrimal lakes

Painful/irritating ocular conditions

Extraorbital conditions

Diseases of paranasal sinuses
Mechanical or olfactory stimulation
of the nasal mucosa

*Eyelid conditions**

Blepharitis
Distichiasis/ectopic cilia
Entropion
Facial nerve paralysis
Lid laceration
Neoplasia
Trichiasis

Intraocular conditions

Acute uveitis
Anterior lens luxation (D)
Glaucoma
Trauma

Ocular surface conditions

Conjunctivitis*
Corneal ulceration*
Foreign body
Keratitis*

*Third eyelid conditions**

Lymphoid hyperplasia
Neoplasia
Prolapsed nictitans gland
Scrolled third eyelid
Trauma

1.7 Musculoskeletal historical signs

1.7.1 Forelimb lameness

YOUNG ANIMALS

Any site

- Infection*
- Metaphyseal osteopathy
- Panosteitis
- Trauma*
 - Bruising or strain of soft tissues*
 - Laceration*
 - Penetrating wound*

Shoulder

- Brachial plexus avulsion
- Fracture of the humerus*
- Fracture of the scapula
- Haemarthrosis
- Joint capsule rupture
- Luxation (congenital or acquired)
- Medially displaced biceps tendon
- Osteochondrosis* (D)
- Septic arthritis*
- Shoulder dysplasia*
- Traumatic arthritis*

Elbow

- Avulsion of the medial epicondyle
- Collateral ligament rupture or avulsion
- Degenerative joint disease*
- Elbow incongruity
- Fracture of the humerus*
- Fracture of the radius*
- Fracture of the ulna*
- Growth plate disorders
- Haemarthrosis

Luxation (congenital or acquired)

Osteochondrosis (D)*

- Fragmented medial coronoid process
- Osteochondritis dissecans of the medial condyle of the humerus
- Ununited anconeal process

Septic arthritis

Traumatic arthritis*

Carpus

Carpal hyperextension

Collateral ligament rupture or avulsion

Degenerative joint disease*

Dysostosis

Flexor tendon contracture

Fracture of the carpal bones*

Fracture of the metacarpal bones*

Fracture of the radius*

Fracture of the ulna*

Growth plate disorders

Luxation

Osteochondrosis

Septic arthritis

Shearing injury

Subluxation

Foot

Avulsion of the deep digital flexor tendon

Avulsion of the superficial digital flexor tendon

Claw disease *q.v.**

Degenerative joint disease*

Fracture of distal metacarpal bones*

Fracture of phalanges*

Injury to the integument, e.g.

- Bite wound
- Foreign body
- Laceration

Other pathology of the integument*

Luxation/subluxation

Septic arthritis

Sesamoid disease/fracture

ADULT ANIMALS

Any site

Infection*

Trauma*

- Bruising or strain of soft tissues
- Laceration
- Penetrating wound

Shoulder

Biceps tendon rupture

Bicipital tenosynovitis (D)

Degenerative joint disease*

Fracture of the humerus*

Fracture of the scapula*

Haemarthrosis

Infraspinatus contracture/other muscle contractures

Joint capsule rupture

Luxation (congenital or acquired)*

Medially displaced biceps tendon

Neoplasia*, e.g.

- Metastatic tumour
- Nerve root tumour
- Primary bone tumour
- Soft tissue tumour
- Synovial sarcoma

Osteochondrosis

Septic arthritis

Shoulder dysplasia

Traumatic arthritis*

Elbow

Collateral ligament rupture or avulsion

Degenerative joint disease*

Elbow incongruity

Fracture of the humerus*

Fracture of the radius*

Fracture of the ulna*

Haemarthrosis

Incomplete ossification of the humeral condyle

Luxation (congenital or acquired)

Medial spur

Neoplasia*

- Bone
- Metastatic
- Soft tissue

Osteochondrosis

Septic arthritis

Traumatic arthritis*

Carpus

Carpal hyperextension

Degenerative joint disease*

Fracture of the radius*

Fractures of the carpal bones*

Fractures of the metacarpal bones*

Haemarthrosis

Luxation or subluxation

Neoplasia*

- Bone
- Metastatic
- Soft tissue

Septic arthritis

Shearing injury

Traumatic arthritis*

Foot

Avulsion of the superficial or deep digital flexor tendon

Claw disease *q.v.*

Degenerative joint disease*

Fracture of the distal metacarpal bones*

Fracture of the phalanges*

Fracture of the sesamoid bones*

Haemarthrosis

Injury to the integument*, e.g.

- Bite wound
- Foreign body
- Laceration

Other pathology of the integument*

Luxation

Neoplasia

- Bone
- Metastatic
- Soft tissue

Septic arthritis

Sesamoid disease

Traumatic arthritis*

1.7.2 Hindlimb lameness

YOUNG ANIMALS

Any site

Infection

Metaphyseal osteopathy

Panosteitis

Trauma

- Bruising or strain of soft tissues
- Laceration
- Penetrating wound

Hip

Avascular necrosis of the femoral head (D)

Fracture of the acetabulum*

Fracture of the femur*

Haemarthrosis

Hip dysplasia*

Luxation*

Septic arthritis

Traumatic arthritis*

Stifle

Caudal cruciate ligament rupture or avulsion

Cranial cruciate ligament rupture or avulsion*

Femorotibial luxation

Fracture of the femur*

Fracture of the fibula*

Fracture of the patella*

Fracture of the tibia*

Genu valgum

Haemarthrosis
Long digital extensor tendon avulsion
Meniscal trauma*
Osteochondrosis*
Patellar ligament rupture or avulsion
Patellar luxation*
Septic arthritis
Stifle hyperextension
Traumatic arthritis*

Hock

Calcaneal tendon rupture, laceration or avulsion
Collateral ligament avulsion
Congenital tarsal anomalies
Fracture of the tibia*
Fracture of the fibula*
Fractures of the metatarsal bones*
Fractures of the tarsal bones*
Gastrocnemius tendon rupture, laceration or avulsion
Growth plate disorders
Haemarthrosis
Luxation
Osteochondrosis*
Septic arthritis
Shearing injury
Tibial dysplasia
Traumatic arthritis*

Foot

Avulsion of the superficial or deep digital flexor tendon
Claw disease *q.v.**
Degenerative joint disease*
Fractures of the distal metatarsal bones*
Fractures of the phalanges*
Fractures of the sesamoid bones
Haemarthrosis
Injury to the integument*, e.g.

- Bite wound
- Foreign body
- Laceration

Other pathology of the integument*

Luxation

Septic arthritis

Sesamoid disease

Traumatic arthritis*

ADULT ANIMALS

Any site

Infection

Trauma

- Bruising or strain of soft tissues
- Laceration
- Penetrating wound

Hip

Avascular necrosis of the femoral head*

Degenerative joint disease*

Fracture of the acetabulum*

Fracture of the femur*

Haemarthrosis

Hip dysplasia*

Luxation*

Myositis ossificans

Neoplasia*

- Bone
- Soft tissue
- Metastatic

Septic arthritis

Traumatic arthritis*

Stifle

Caudal cruciate ligament rupture or avulsion

Cranial cruciate ligament rupture or avulsion*

Degenerative joint disease*

Femorotibial luxation

Fracture of the femur*

Fracture of the fibula*

Fracture of the patella*

Fracture of the tibia*

Haemarthrosis

Long digital extensor tendon avulsion

Meniscal trauma*

Neoplasia*

- Bone
- Soft tissue
- Metastatic

Osteochondrosis*

Patellar ligament rupture or avulsion

Patellar luxation*

Septic arthritis

Stifle hyperextension

Traumatic arthritis*

Hock

Calcaneal tendon rupture, laceration or avulsion

Collateral ligament avulsion

Degenerative joint disease*

Fracture of the fibula*

Fracture of the tibia*

Fractures of the metatarsal bones*

Fractures of the tarsal bones*

Gastrocnemius tendon rupture, laceration or avulsion

Growth plate disorders

Haemarthrosis

Luxation

Neoplasia*

- Bone
- Soft tissue
- Metastatic

Osteochondrosis*

Septic arthritis

Shearing injury

Superficial digital flexor luxation

Tibial dysplasia

Traumatic arthritis*

Foot

Avulsion of the superficial or deep digital flexor tendon

Claw disease* *q.v.*

Degenerative joint disease*

Fractures of distal metatarsal bones*

Fractures of phalanges*

Fractures of sesamoid bones

Haemarthrosis

Injury to the integument*, e.g.

- Bite wound
- Foreign body
- Laceration

Other pathology of the integument*

Luxation*

Neoplasia*

- Bone
- Soft tissue
- Metastatic

Septic arthritis

Sesamoid disease

Traumatic arthritis*

Traumatic tenosynovitis

1.7.3 Multiple joint/limb lameness

Young animals

Borreliosis

Chondrodysplasia

Drug reaction

- Sulphonamide
- Vaccine

Excessive joint laxity

- Collagen defect
- Dietary
- Traumatic

Haemarthroses

Metaphyseal osteopathy (D)

Nutritional secondary hyperthyroidism

Panosteitis

Polyarthritis

Osteochondrosis*

Septic arthritis

Viral arthritis

Adult animals

- Borreliosis
- Chondrodysplasia
- Degenerative joint disease*
- Drug reaction
 - Sulphonamide
 - Vaccine
- Excessive joint laxity
 - Collagen defect
 - Dietary
 - Traumatic
- Haemarthroses
- Hyperparathyroidism
- Neuromuscular disease
- Osteochondrosis*
- Nutritional, e.g.
 - Hypervitaminosis A
 - Copper deficiency
- Periosteal proliferative arthritis
- Polyarthritis
- Septic arthritis
- Systemic lupus erythematosus
- Viral arthritis

1.8 Reproductive historical signs

1.8.1 Failure to observe oestrus

- Abnormal sex chromosomes
- Early embryonic death *q.v.*
- Idiopathic
- Immune-mediated oophoritis
- Inadequate display of oestrus*
- Inadequate observation of oestrus*
- Inappropriate photoperiod (C)
- Lactational anoestrus*
- Panhypopituitarism

Physical/athletic training
 Poor diet
 Prepuberty*
 Previous ovariectomy*
 Pseudohermaphroditism
 Pseudopregnancy*
 Seasonal anoestrus (C)*
 Social factors
 Spontaneous ovulation
 Sterile matings
 True hermaphroditism

Concurrent disease

Hyperadrenocorticism
 Hypoadrenocorticism (D)
 Hypothyroidism* (D)
 Poor body condition

Iatrogenic

Anabolic steroids
 Androgens
 Glucocorticoids
 Progesterones

Ovarian disease

Ovarian aplasia
 Ovarian cysts and tumours

- Granulosa–thecal cell tumours
- Luteal cysts
- Other neoplasms or cysts causing ovarian atrophy

 Ovarian hypoplasia
 Senile ovarian failure

Stress*

Frequent showing
 Frequent travel
 Overcrowding
 Temperature extremes

1.8.2 Irregular seasons

Short pro-oestrus followed by anoestrus

Poor diet

Shortened inter-pro-oestrus intervals (see succeeding text)

Stress

Reduced intensity of visible signs of oestrus

Concurrent disease*

Drugs*

- Anabolic steroids
- Androgens
- Glucocorticoids
- Progesterones

Persistence of oestrus behaviour

Signs of oestrus in the absence of true hormonal oestrus

Vaginal foreign body

Vaginal tumour

Vaginitis*

Vulvitis*

Prolonged pro-oestrus/oestrus

Excessive adrenal production of oestrogen (C)

Follicular cysts*

Hepatic disease

Merging of waves of follicular growth (C)

Normal in young females*

Iatrogenic

Drugs used to prevent pregnancy after mating

Exogenous gonadotrophins

Ovarian tumours

Adenocarcinoma

Cystadenoma

Granulosa cell tumour

Shortened inter-pro-oestrus interval

- Follicular cysts
- Frequent episodes of pro-oestrus
- Ovulatory failure
- Short anoestrus
- Split heats

Iatrogenic

- Bromocriptine
- Cabergoline
- Prostaglandins

Prolonged inter-pro-oestrus interval

- Normal in some breeds
- Hypothyroidism* (D)
- Idiopathic
- Ovarian cysts or neoplasia
- Severe systemic disease
- Silent heat

1.8.3 Infertility in the female with normal oestrus**Failure to achieve intromission**

Male factors* *q.v.*

Congenital defects of the vestibule and vagina

- Intersexes
- Vaginal septa
- Vestibulovaginal strictures
- Vulval constrictions

Acquired vaginal conditions

- Foreign body
- Post-partum fibrosis
- Transmissible venereal tumour
- Vaginal hyperplasia*

Vaginal tumours
Vaginal ulceration

Failure of ovulation

Idiopathic (D)
Inadequate number of matings (C)
Incorrect timing of mating* (C)

Miscellaneous

Cervical stenosis
Cystic endometrial hyperplasia*
Early embryonic loss *q.v.*
Endometritis
Herpesvirus
Hypoluteodism/insufficient progesterone secretion by corpus luteum
Incorrect timing of mating/insemination*
Infertile male
Non-patent oviducts or uterus
Segmental aplasia of the paramesonephric (Müllerian) duct
Stress
Uterine polyps
Uterine tumours

1.8.4 Male infertility

Failure to achieve intromission

Female factors *q.v.*

Acquired abnormalities

Neoplasia of the penis/prepuce
Phimosis
Trauma of the penis/prepuce
Urethral obstruction and subsequent haematoma

Congenital abnormalities, e.g.

Diphallus
Penile hypoplasia
Persistent penile frenulum
Preputial stenosis
Pseudohermaphroditism

Miscellaneous

Incomplete erection

Ineffective thrusting

- Experience*
- Poor socialisation*
- Short os penis
- Size discrepancy*
- Trauma (desensitised glans)

Premature full attainment of erection in inexperienced dog*

Premature loss of erection*

Inability to mount the female

Prostatic disease *q.v.*

Orthopaedic disease*

Lack of fertility where normal mating(s) is(are) achieved

Failure of/incomplete ejaculation

Discomfort or stress during mating*

Inadequate tie*

Retrograde ejaculation

- Disorder of the sympathetic nervous system
- Urethral sphincter incompetence

Lack of libido

Age related

Prepubertal*

Senility*

Behavioural

Inexperience*

Previous bad experience when mating*

Training not to display sexual interest*

Concurrent/systemic disease, e.g.*

Hypoadrenocorticism

Hypogonadism

Hypothyroidism* (D)

Diet

Malnutrition

Obesity*

Drugs

Anabolic steroids
Cimetidine
Glucocorticoids
Ketoconazole
Oestrogens
Overuse of testosterone
Progestagens

Management

Overuse*

Testicular disease

Idiopathic testicular degeneration
Orchitis
Sertoli cell tumour

Low/absent sperm number or quality*Artefact*

Poor collection technique/analysis*

Acquired defects

Infections causing azoospermia or abnormal sperm/semen

- Balanoposthitis
- Epididymitis
- Orchitis
- Prostatitis
- Urethritis

Increases in testicular temperature

- Chemotherapeutics, e.g.
 - Chlorambucil
 - Cisplatin
 - Cyclophosphamide
- High environmental temperature
- Hyperthermia
- Iatrogenic
- Orchitis in the contralateral testis
- Other drugs
 - Anabolic steroids
 - Androgens
 - Glucocorticoids

- Radiation therapy/excessive radiography
- Scrotal dermatitis

Local trauma

- Dog bites
- Kicks/blows
- Lacerations

Neoplasia of the testis

Overuse*

Pain*

Prepuberty*

Retrograde ejaculation

Toxins

Congenital defects

Cryptorchidism

Genetic abnormalities in spermatogenesis

- Chromosomal abnormalities, e.g.
 - XXY syndrome (D)
 - 38,XY/57,XXY (C)
- Immotile cilia (Kartagener's syndrome)

Segmental aplasia of the duct system

Testicular hypoplasia

1.8.5 Vaginal/vulval discharge

Ovarian remnant syndrome

Pseudopregnancy*

Pyometra*

Stump pyometra*

Vaginal or uterine neoplasia

Vaginitis*

Vulvitis*

1.8.6 Abortion

Drugs, e.g.

Cabergoline

Corticosteroids

Prostaglandins

Habitual abortion

Abnormal uterine environment, e.g.

- Cystic endometrial hyperplasia

Poor luteal function

Infection

Brucella canis (D)

Canine adenovirus (D)

Canine distemper virus (D)*

Canine herpesvirus (D)

Chlamydophila psittaci (C)

Ehrlichiosis

Feline herpesvirus (C)*

Feline infectious peritonitis (C)*

Feline leukaemia virus (C)*

Feline panleukopenia virus (C)*

Leishmaniasis

Toxoplasmosis

1.8.7 Dystocia

MATERNAL CAUSES

Obstruction of the birth canal

Congenital uterine malformations

- Aplasia of the cervix
- Aplasia of the corpus uteri
- Aplasia of the uterine horns

Fibrosis of the birth canal

Narrow pelvic canal

- Congenital
- Fracture*
- Immaturity*

Neoplasia

Uterine malposition

Uterine rupture

Uterine torsion
Vaginal septa

Uterine inertia*

Primary uterine inertia

Fatty infiltration of the myometrium
Hormonal deficiencies
Hypocalcaemia* *q.v.*
Inherited
Maternal systemic disease
Overstretching of the myometrium, e.g.

- Excessive intrauterine fluids
- Large foetuses*
- Large litter*

Poor diet
Senile changes*
Single puppy syndrome*

Secondary uterine inertia

Exhaustion of the myometrium*

- Obstruction of birth canal*
- Prolonged labour*

FOETAL CAUSES

Malpresentation*

Backward flexion of front legs
Breech
Lateral or downward deviation of the head
Posterior
Transverse
Two foetuses presenting simultaneously

Oversized foetuses

Physically normal but large puppy*
Monstrosities

- Duplications
- Hydrocephalus
- Oedema

1.8.8 Neonatal mortality

Congenital abnormalities*, e.g.

Congenital heart disease
Hydrocephalus
Hypothyroidism

Infections*, e.g.

Feline calicivirus*
Feline herpesvirus*
Feline infectious peritonitis*
Feline parvovirus*
Septicaemia

Maternal/management factors*

Asphyxiation
Euthanasia for reasons of congenital deformities or undesirable cosmetic features
Hypoglycaemia *q.v.*, e.g.

- Secondary to sepsis

Hypothermia
Inadequate lactation
Poor environment, e.g.

- Draughts
- Heating

Poor hygiene
Poor mothering
Poor nutrition/health of breeding stock

Miscellaneous

Fading puppy syndrome*
Low birth weight
Neonatal isoerythrolysis
Stillbirth

1.9 Urological historical signs

1.9.1 Pollakiuria/dysuria/stranguria

Normal urine

- Behavioural*
- Feline lower urinary tract disease
- Idiopathic detrusor-urethral dyssynergia
- Neuromuscular

With haematuria, pyuria or bacteriuria

- Diabetes mellitus*
- Feline lower urinary tract disease* (C)
- Hyperadrenocorticism/corticosteroid treatment
- Iatrogenic disorders
- Infection
- Infiltrative urethral diseases
- Neoplasia
- Neuromuscular disorders
- Prostatic disease
- Renal disease* *q.v.*
- Structural abnormalities
- Trauma/bladder rupture
- Urolithiasis*

1.9.2 Polyuria/polydipsia (see Section 1.1.1 for full differentials)

- Diet
- Drugs/toxins
- Congenital lack of ADH receptors
- Electrolyte disorders
- Endocrine disease
- Hepatobiliary disease
- Hypothalamic disease
- Infectious disease

Metabolic (e.g. hypercalcaemia)
Neoplasia*
Pericardial effusion
Physiological
Polycythaemia
Psychogenic
Renal disorders

1.9.3 Anuria/oliguria

Pre-renal

Dehydration*
Hypoadrenocorticism (D)
Shock *q.v.**

Renal

Acute kidney injury *q.v.*
Chronic kidney disease*

Post-renal

Prostatic disease*
Urethral spasm

Neoplasia

Bladder
Extra-urinary tract
Urethra

Trauma

Avulsion of ureters
Ruptured bladder/urethra

Urolithiasis*

Nephroliths
Ureteroliths
Uroliths in the bladder or urethra

1.9.4 Haematuria

Extra-urogenital disease

Coagulopathy *q.v.*

Drugs/toxins

- Paracetamol

Heatstroke

Thrombocytopenia/thrombocytopathia

Penile disease

Neoplasia

Trauma

Physiological

Pro-oestrus

Prostatic disease

Abscess

Benign prostatic hyperplasia* (D)

Cysts

Neoplasia

Prostatitis*

Pseudohaematuria (non-haematuria-related red urine)

Bilirubinuria *q.v.*

Food pigments

- Blackberries
- Beets
- Rhubarb

Haemoglobinuria *q.v.*

Myoglobinuria *q.v.*

Phenazopyridine

Phenolphthalein

Phenothiazines

Renal disease

Cysts

Glomerulonephritis

Iatrogenic

- Biopsy
- Fine-needle aspirate

Idiopathic renal haematuria

Infarction, e.g.

- Disseminated intravascular coagulation

Neoplasia*

Parasites

- *Dioctophyma renale*

Pyelonephritis

Renal telangiectasia

Trauma

Uroliths*

Ureteral, urinary bladder and urethral disease

Drugs

- Cyclophosphamide

Feline lower urinary tract disease*

Iatrogenic

- Cystocentesis*
- Forceful catheterisation*

Neoplasia

Parasites

- *Capillaria plica*

Polyps

Trauma*

Urethritis

Uroliths*

Uterine disease

Metritis

Neoplasia

Pyometra*

Sub-involution*

Vaginal disease

Neoplasia

Trauma

1.9.5 Urinary incontinence/inappropriate urination

With bladder distension

Detrusor atony

- Bladder over-distension
- Dysautonomia
- Lower motor neurone disease
- Neoplastic infiltration of the bladder wall
- Upper motor neurone disease

Functional obstruction

- Reflex dyssynergia*
- Upper motor neurone disease
- Urethral inflammation*
- Urethral pain

Partial physical obstruction

- Granulomatous urethritis
- Neoplasia
- Prostatic disease*
- Retroflexion of the bladder into a perineal hernia
- Urethral fibrosis/stricture
- Urolithiasis*
- Vestibulovaginal stenosis

Without bladder distension

Bladder hypercontractility

- Chronic partial obstruction*
- Detrusor instability
- Inflammation*
- Neoplasia

Miscellaneous

- Behavioural
- Ectopic ureters

Iatrogenic

- Ureterovaginal fistulation

Secondary to polydipsia/polyuria

Ureterocoele

Urolithiasis

Reduced bladder storage

Fibrosis

Hypoplasia

Neoplasia

Urethral sphincter incompetence

Congenital

Hormone responsive*

Intersex

Prostatic disease*

Urethral inflammation*

Urethral neoplasia

Urinary tract infection*