

First aid in pets II. Orchard Veterinary Group Glastonbury

Medical emergencies – emergencies caused by a disease state rather than external causes. Considerable overlap between external and internal causes.

Clinical examination (covered in previous session)

CATS AND DOGS

Vital Statistics: Pulse and Heart Rate

Normal resting rates:

- Cats: 150-200 bpm
- Small dogs: 90-120 bpm
- Medium dogs: 70-110 bpm
- Large dogs: 60-90 bpm

Pulse should be strong, regular and easy to locate.

Checking the pulse

The easiest place to locate a pulse is the femoral artery in the groin area. Place your fingers on the inside of the hind leg and slide your hand upward until the back of your fingers touches the abdomen. Gently move your fingers back and forth on the inside of the hind leg until you feel the pulsing blood. Count the number of pulses in 15 seconds and multiply that number by 4. This will give you the beats per minute (bpm).

Temperature

Normal temp. for dogs and cats: 100-102.5 degrees

Thermometer should be almost clean when removed.

Abnormalities are indicated by blood, diarrhoea, or black, tarry stool.

Signs of death

Respiratory arrest + no detectible heart beat - in theory could revive with appropriate treatment. Revival not appropriate if - eyes fixed open, no blink, pupils fixed & dilated & cornea becoming glassy.

Mucous membranes bluish (cyanosed)

Body stiff (rigor mortis) - quicker in onset if very active immediately prior to death (e.g. seizure) & will relax again after a few hours or sooner.

1 - Poisoning

Common poisons -

Ethylene-glycol (antifreeze & scouring pads). Death due to renal failure within hours of ingestion. Treatment (including intra-venous vodka) rarely effective.

Slug bait - metaldehyde - central nervous system affected - seizures, convulsions

Non-steroidal anti-inflammatories (the aspirin class of drugs) - dogs particularly sensitive to ibuprofen, aspirin is toxic to cats.

High cocoa content chocolate (also garden mulch): theobromine, powerful stimulant, affecting the heart & central nervous system (CNS)

Lilies, many species - cause renal failure, even from licking pollen off the coat. Especially cats

Paraquat - destruction of lung tissue

Other common poisons:

Slug bait (metaldehyde), ivy, lilies, fly agaric, deadly nightshade, ibuprofen, aspirin, digitalis, laburnum, yew, daffodil bulbs, mistletoe, rhododendron, onion, macadamia nuts, yeast dough, tobacco, box, laurel, bleaches, strong acids (car batteries), antifreeze, de-icer, soap pads, high cocoa content chocolate, cocoa mulch, barbiturates, weed killers – paraquat, chlorate, warfarin, coumarins, calciferol (vit D), alphachloralose, iron, lead, mercury salts, vitamin A, cyanide, organophosphates, organochlorides, phenols – Jeyes fluid, creosote, acrolein, arsenic, strychnine, carbon monoxide, chlorine gas (swimming pools), petroleum products (kerosene, diesel, white spirit, paint thinners), bacterial toxins – Clostridium botulinum, raisins, venoms – snake & toad (UK), wood preservative, tar, mothballs, batteries

Things that are not (usually) poisonous:

Metallic mercury, lead etc., Contraceptive tablets, Soap, Toothpaste, Pet friendly slug pellets, Water based paints, Glow jewellery, Cat litter, Silica gel, toilet bowl water.

Consider poisons in groups:

1/ Route of action - inhaled, ingestion, contact

2/ Mode of action - irritant or destructive to tissues, toxic effect - interfering with normal body chemistry (cyanide)

Dose effect

Species (cats/dogs) or individual effect (drug allergy).

First aid in poisonings *NB personal safety:*

Remove the source - Move out of area, Dilution, Adsorption, induce vomiting, Neutralisation – chemicals, heat

Treat the consequences - specific methods of dealing with burns, gastro-intestinal irritation, neurological problems, liver and kidney disease. Seek veterinary advice

Bee and wasp stings - rarely serious though painful. Remove the sting if possible. Be vigilant, stings are often in the mouth, if serious could obstruct the airway. Vinegar/baking soda - waste of time!

Treatment in serious cases is often ineffective - PREVENTION IS BETTER THAN CURE

2 - Neurological (central nervous system)

Brain - fits, seizures, vestibular syndrome, faints (covered with cardio vascular) and vestibular syndrome, the main cause of loss of balance. A true 'stroke' in the human sense (i.e. a bleed or a blocked blood vessel in the brain (CVA or TIA)) is very rare in veterinary medicine although some conditions are labelled 'stroke' for convenience.

Spinal - problems with locomotion & sensation. Fibrocartilagenous embolus, prolapsed (slipped) disc, (rarely trauma - severe)

Fits (seizures):-

Causes - 'epilepsy', meningitis & encephalitis, space occupying lesion (SOL) - usually other signs, specific infections including distemper and rabies. Toxins - external such as metaldehyde, or internal as seen in kidney disease (azotaemia or uraemia), liver failure (hepatic encephalopathy).

Some causes can be avoided - distemper, rabies, metaldehyde

Signs - Convulsions, tonic/clonic spasms, very active. Onset usually while relaxed or asleep. Incontinence, unaware of surroundings, change in demeanour or behaviour before and after the fit (pre & post-dromal phases).

First aid measures - A dog is unlikely to harm you or it during a fit.

Mostly passive measures and observation to be able to report accurately once the fit is over. Little point in phoning your vet during a fit.

Move objects away from the area.

Do not touch or move the dog during the fit, do not attempt to open the jaws.

Beware the post-dromal phase, some dogs can be aggressive

Disturbances of balance:-

Commonest cause is vestibular syndrome

Signs - Conscious throughout, sudden onset circling & loss of balance, often an older dog, eyes moving rhythmically from side to side (nystagmus), vomiting (motion sickness)

Causes - middle ear disease affecting the semi-circular canals and other structures controlling balance

Vestibular tract disease - a lesion directly affecting the nervous system

Most often no known cause (idiopathic)

Often called a stroke for convenience but is not a true stroke.

First aid measures - avoid sudden movements, allow to settle naturally, seek veterinary advice. THE OUTLOOK IS OFTEN FAVOURABLE, DESPITE APPEARANCES

Spinal - problems with locomotion (movement) & sensation

Causes:- Fibrocartilagenous embolus, prolapsed disc both have similar signs, (rarely trauma)

Signs:- Usually sudden onset collapse of hind legs (can affect only one leg, cause weakness only or severe neck pain), often painful (consider muzzling), certain breeds predisposed - , esp. long backed breeds - dachshunds, basets, corgis.

First aid measure - careful handling, straight back, do not force into position, allow to settle with minimal assistance.

3 - Respiratory tract

How to detect breathing - airway noise, chest excursions, cotton wool in front of nostrils

Types of problems - blocked airway – foreign body e.g. ball, stick, structural (e.g. roaring, collapsed trachea), asthma (cats). Nose bleeds & coughing up blood occasionally seen.

Obstruction causing respiratory distress/arrest – A genuine emergency, prompt action can save lives, very distressing, pawing, silent gasping, panic, aggression, later collapse, blue/black mucous membranes.

First aid - don't get bitten, attempt removal, set off for vets & phone ahead

Nose bleeds (epistaxis). General causes of bleeding disorders – liver disease, warfarin, also foreign body, neoplasia (cancer), infection (fungal - aspergillosis)

Coughing up blood (haemoptysis) - General causes bleeding disorders – liver disease, warfarin. FB (stick), neoplasia, infection (uncommon), heart disease. Poor prognosis.

4 - Cardiovascular (heart & circulation)

How to take pulse & detect heart beat - see previous session

Types of problems: arrhythmias where the normal “regularly irregular” pattern of heart beats is disrupted, murmurs where a ‘hole in the heart’ or a leaky valve allows blood to be pumped in the wrong direction, murmurs can also cause a “jet lesion” which damages the inside of the heart and can predispose to tearing, a rapidly fatal condition. Feline thrombo-embolus where a blood clot stops circulation to the muscles of the hind legs; tumours of the heart or circulation.

Fainting (syncope):

Signs - flaccid, limp collapse although can be rigid initially, pale/white mucous membranes, weak, fluttering pulse, often happens during exercise or at times of excitement

First aid - lie on side, check ABC, call the vet, may recover spontaneously. Do **not** attempt cardio-pulmonary resuscitation (cpr or heart massage) on a beating heart.

'Heart attacks' - true coronary artery disease as in humans is rare – sudden collapse or death due to heart problems is more likely to be due to a catastrophic arrhythmia or a bleed from the heart (left atrial tears or cancer -> cardiac tamponade) or a breakdown of structures inside the heart controlling the action of the heart valves (ruptured chorda tendinae)

Cardiac arrest:

Limp collapse, mucous membranes become blue/black, no pulse/heartbeat, apparent attempts to breathe - reflex gasping, so called agonal breathing.

CPR difficult & very unlikely to succeed, defibrillation not widely available. CPR alone will not restart a stopped heart but can only maintain circulation to a limited extent until specialist help is available. + issues of human health - pasteurisation & other respiratory pathogens

Internal bleeding - trauma (ruptured spleen or other internal organ), neoplasia (haemangiosarcoma), poison (particularly rat bait - coumarins, which stop blood clotting), immune mediated thrombocytopenia.

5 - Gastrointestinal

Problems:-

Constipation, dietary indiscretion, vomiting and diarrhoea (gastro enteritis), gastric dilatation-volvulus (bloat), obstruction.

Obstruction - x-rays of foreign body - can you see what it is yet?

Acute gastro-enteritis

Vomiting, food or green/yellow bile, soft or watery diarrhoea, occasional mucus or blood spots, well in self, no dehydration, variable appetite, often off food 24 to 36 hours. Usually self limiting. Simple, symptomatic treatment - diet, simple medications, oral fluids - tap water is fine.

Severe/chronic gastro-enteritis

No response to initial treatment, worsening of signs, especially vomiting persists with possible blood visible as red clots or brown “coffee ground appearance”. Diarrhoea persists +/- blood (haemorrhagic gastro-enteritis). Depression, dehydration, weakness & collapse.

Veterinary attention required - investigation (blood analysis, x-rays, gastroscopy), anti-emetics, spasmolytics, intravenous fluids.

Gastric dilatation & volvulus (bloat)

Wide variety of possible causes, none proven.

Unproductive retching, froth/phlegm (whipped egg white), timing, often after eating, especially if vigorous exercise has followed a meal, breed disposition - commoner in deep, broad-chested breeds. TYMPANI - a drum-like tension of abdomen, the belly will "ring like a drum" when tapped. Very rapid onset.

First aid - **This is a serious, life threatening emergency which can be rapidly fatal.** Phone for advice & bring in, any time 24/7, if confirmed will almost certainly require emergency surgery. No home remedy.

6 - Urinary tract

Haematuria - signs: Blood in urine, often looks worse than it is, not usually an emergency

Difficulty passing urine (dysuria) - Possible urethral spasm/blockage - signs: straining to pass urine (NB posture), licking, agitation, urinary frequency & urgency. More common in cats.

Blockage - Similar signs to dysuria only persistent and more severe. Bladder stones (urolithiasis) can become lodged in the tube leading out from the bladder (urethra), Feline Lower Urinary Tract Disease (FLUTD) - a type of bladder or urethral pain and blockage caused by millions of crystals in the urine. Moisture content of diet is important - thinking has come full circle and now high water content diets are recommended to dilute the urine and prevent formation. A slightly acid urine also is very important.

Some populations are predisposed to bladder stones - over weight, sedentary male cats (couch potatoes!), females get urolithiasis but only rarely block as the urethra is relatively short, straight and wide - females are more prone to urinary incontinence. Dalmatians have an inability to metabolise protein effectively -> urate crystals