Canine medicine

KEY LEARNING OBJECTIVES

- How to store blood products correctly to ensure quality is maintained
- Importance of blood typing all transfusion recipients and administering compatible products
- Appreciate the importance of blood product traceability and how this can be achieved

MULTIPLE CHOICE QUESTIONS

1. Which of the following breeds would be MOST likely to be DEA1-negative?
(A) Labrador Retriever
(B) Dalmatian

- (C) Boxer
(D) Rottweiler
2. How should packed red blood cells be stored?
(A) In the freezer at -18°C
(B) In the fridge at $4 (+/-2)^{\circ}\text{C}$
(C) In the freezer at -25°C
(D) In the fridge at $8 (+/-2)^{\circ}\text{C}$
3. Which of the following statements about fresh whole blood is correct?
(A) Is not supplied by Pet Blood Bank
(B) Is only supplied as DEA1-negative units
(C) Can be refrigerated for later use as frozen whole blood
(D) Can be ordered from a collection session for immediate transport to the practice

Nursing the megaoesophagus patient

Caroline Boothroyd

Megaoesophagus (MO) is the most common cause of regurgitation in dogs and is characterized as oesophageal dilation with concurrent oesophageal dysmotility. The dilation can focal or diffuse. This may be either a congenital, idiopathic or an acquired secondary condition.

CONGENITAL MO

Congenital MO is characterized by generalized hypomotility and oesophageal dilation causing regurgitation and failure to thrive in puppies shortly after weaning. There has been a familial predisposition in some breeds.

IDIOPATHIC MO

Also known as adult-onset primary MO. The age of onset is 8 years or older.

ACQUIRED SECONDARY MO

Acquired secondary megaoesophagus (ASM) occurs secondary to another disease process.

Myasthenia gravis (MG) accounts for 25–30% of ASM in dogs. MG may involve the oesophagus only (focal) or more commonly will involve both the oesophagus and peripheral muscles. ASM has been associated with hypoadrenocorticism (HAC), lupus myositis, polymyopathies, polyneuropathies, dysautonomia, lead poisoning and severe forms of oesophagitis.

Clinical signs include:

- Regurgitation — at varying times following ingestion of food or water
- Malnutrition
- Aspiration pneumonia

- Signs associated with underlying cause of MO (e.g. MG):
 - Muscle pain and stiff gait
 - Weakness
 - Exercise intolerance
 - Gastrointestinal signs.

DIAGNOSIS

Radiography

- Radiographs of the neck and thorax taken whilst the patient is conscious will usually be diagnostic. Aspiration pneumonia may also be identified
- Contrast radiographs may help to exclude a foreign body cause of MO or to evaluate oesophageal motility.

Laboratory samples

- Biochemistry, haematology and urinalysis should be performed to screen for causes of ASM
- Acetylcholine receptor antibody (AChR antibody) titre for acquired MG — even in the absence of muscle weakness as MG can cause focal MO. This should be repeated 4–8 weeks later in dogs that have a titre result in the grey zone
- Antinuclear antibody — systemic lupus erythematosus
- A resting cortisol or adrenocorticotrophic hormone stimulation test to rule out HAC
- T4 — a clear association with hypothyroidism has not been proven.

Other tests

To be determined on an individual basis:

- Oesophagoscopy
- Electromyography and nerve conduction velocity
- Muscle and nerve biopsy
- Fluoroscopy.

TREATMENT AND MANAGEMENT

The cause of the MO must be determined before a treatment plan can be made. Patients with ASM must have the underlying cause treated. Patients with MO caused by

MG have a favourable prognosis as 50% of dogs respond to therapy. Patients with idiopathic MO and those that fail to respond to medical therapy require supportive and symptomatic treatment.

Broad-spectrum antibiotics should be considered in aspiration pneumonia. Owners should be informed that aspiration pneumonia is a common problem and prompt detection is necessary for treatment success.

It is recommended to feed small, frequent meals from an elevated or upright position to aid passage to the stomach. The patient should be held in the upright position for 15 minutes following the feed. Food consistency can vary, depending on what that patient tolerates best. A gastrostomy tube can be placed in severely malnourished patients or those who have frequent bouts of aspiration pneumonia. A gastrostomy tube can reduce the risk of aspiration pneumonia, but patients may still aspirate saliva or ingesta that have been refluxed.

KEY LEARNING OBJECTIVES

- To understand the causes of megaesophagus
- To be able to advise an owner on correct feeding protocols for a patient with megaesophagus
- How to meet the holistic needs of the patient

MULTIPLE CHOICE QUESTIONS

1. A positive result for the acetylcholine receptor antibody test indicates which disease?
 - (A) Myasthenia gravis
 - (B) Hypoadrenocorticism
 - (C) Hypothyroidism
 - (D) Diabetes mellitus
2. Which would be the feeding tube of choice for a patient with MO?
 - (A) Naso-oesophageal
 - (B) Oesophageal
 - (C) Gastrostomy
 - (D) No feeding tube should be used
3. Pyridostigmine can be used to treat which disease?
 - (A) Myasthenia gravis
 - (B) Hypoadrenocorticism
 - (C) Hypothyroidism
 - (D) Diabetes mellitus

Overview of renal disease

Caroline Boothroyd

The kidneys have many functions:

- Removal of metabolic and nitrogenous waste products (excretion)
- Respond to changes in water levels (osmoregulation)
- Maintain electrolyte balance
- Help to control acid-base balance
- Produce hormones that regulate blood pressure
- Red blood cell production.

Chronic kidney disease (CKD) is a common disorder and is the irreversible and progressive loss of kidney function. Supportive care can slow down progression. CKD covers multiple conditions either congenital or acquired. Patients with CKD have an inability to concentrate urine, increased blood urea and creatinine (with 75% loss of function).

The International Renal Interest Society has a system to better determine the patient's prognosis. <http://iris-kidney.com/pdf/staging-of-ckd.pdf>.

Acute renal failure (ARF) is the rapid loss of kidney function leading to the accumulation of nitrogenous waste. ARF is potentially reversible either by resolution of the injury or by adaptation of the kidney or by both mechanisms.

Azotaemia can be categorized as:

- Prerenal — occurs because of reduced perfusion to the glomeruli of the kidney, preventing adequate

filtering and removal of uraemic toxins. Urea and creatinine will be elevated but the urine tends to be generally very concentrated. Treatment is by replenishing fluid volume and restoring normal blood pressure

- Renal/intrinsic — results from injury to any part of the kidney, and may be due to:
 - Decreased perfusion — as for pre-renal but more severe and with a longer duration
 - Toxins — can damage any part of the kidney. Toxins include ethylene glycol (antifreeze), lilies (cats), grapes and raisins and even some prescribed medications
 - Infections — include pyelonephritis, leptospirosis and Lyme disease
- Postrenal — commonly from a blockage or rupture of the urinary tract. Uroliths or crystalline sludge may obstruct the ureters or urethra. Obstruction causes back pressure on the kidneys, thereby reducing glomerular filtration. If the obstruction is longstanding then direct kidney injury or renal azotaemia may occur. Neoplasia may also lead to obstruction. Rupture of the urinary tract allows leakage of the uraemic toxin into the abdomen and surrounding tissues. Although glomerular filtration continues the uraemic toxins quickly diffuse back into the bloodstream. Treatment involves alleviating the blockage or repairing the rupture.

It is common for prerenal or postrenal azotaemia or active kidney diseases to exist with CKD, and this is described as 'acute-on-chronic' kidney disease.

The holistic needs of patients who are hospitalized for treatment and investigations should be met:

- Padded bedding in a warm, clean stress-free environment

Delivered by BSAVA to:

Guest (guest)

IP: 54.237.206.68

On: Wed, 26 Apr 2023 10:28:55