KEY LEARNING OBJECTIVES

- Be able to recognize a brachycephalic obstructive airway syndrome (BOAS) crisis
- Understand initial stabilization of the emergency BOAS patient
- Understand management of a temporary tracheostomy tube

MULTIPLE CHOICE QUESTIONS

1. How do you determine which size of tracheostomy tube to use in a specific patient?
   - **(A)** 25% of the diameter of the tracheal lumen
   - **(B)** 50% of the diameter of the tracheal lumen
   - **(C)** 75% of the diameter of the tracheal lumen
   - **(D)** 100% of the diameter of the tracheal lumen
2. Which of the following is a cause of expiratory dyspnoea in dogs with BOAS?
   - **(A)** Pharyngeal oedema
   - **(B)** Aberrant nasal turbinates
   - **(C)** Aspiration pneumonia
   - **(D)** Everted tonsils
3. What is the mechanism of action of omeprazole?
   - **(A)** Proton pump inhibitor which decreases the pH of gastric contents
   - **(B)** Proton pump inhibitor which increases the pH of gastric contents
   - **(C)** H2 receptor antagonist which increases the pH of gastric contents
   - **(D)** Prokinetic agent which speeds the emptying of the stomach

Ophthalmology considerations for brachycephalics

Mike Rhodes

Both brachycephalic dogs and cats suffer from various ocular diseases relating to their suboptimal ocular conformation in combination with inherent corneal defects and tear film abnormalities. Breeds commonly affected include the Pug, Shih Tzu, Lhasa Apso, French Bulldog, British Bulldog and the Pekingese in dogs and the Persian, Himalayan, Exotic Shorthair and British Blue in cats.

Common canine conditions include suboptimal eyelid and periocular conformation, suboptimal corneal surface health, pigmentary keratitis, keratoconjunctivitis sicca, qualitative tear film deficiencies and progressive corneal ulceration/corneal melting. Feline conditions can include suboptimal eyelid and periocular conformation, suboptimal corneal surface health and corneal sequestrum formation.

These types of animal are at an increased risk of developing corneal disease, especially when hospitalized and/or receiving sedation/general anaesthesia for other issues. Preventative measures should be considered wherever appropriate, e.g. topical lubrication with a paraffin-based ointment (e.g. VitA-POS eye ointment, Scope Ophthalmics Ltd, West Sussex, UK) to protect the corneal surfaces.

Once these patients are being treated and/or hospitalized for a surface ocular condition, for example, a corneal ulcer, special care should be taken for how much pain these animals may be suffering. Therefore, appropriate analgesia should be given in the form of systemic non-steroidal anti-inflammatory drugs, systemic opioids and topical local anaesthetic solution. The use of bandage contact lenses can also offer significant pain relief in most corneal surface disease. Blepharospasm, photophobia, increased lacrimation and excessive self-trauma are signs of ocular pain. A build-up of a mucopurulent ocular discharge can be a sign of corneal disease progression, such as a corneal infection and/or corneal stromal loss (collagenolysis). Note that these signs can prove misleading, because in some cases the patient can appear more comfortable when the ulcer becomes deeper.

Spontaneous corneal perforation can occur in progressive corneal ulcers. Animals generally cry out when the globe ruptures and this is followed by severe blepharospasm. In addition, there will be a bloody, mucopurulent ocular discharge present which represents clotting aqueous humour. These cases require urgent surgical intervention in the form of a corneal grafting procedure. Failure to operate on such cases within 24–48 hours can lead to intraocular infection and enucleation.

Practical tips on managing these brachycephalic patients in the hospital include hand-feeding (if wearing a protective collar), topical local anaesthetic solution applied to the eye on occasion to facilitate cleaning around the eyes and/or applying other treatments, topical ointments can be warmed to body temperature to facilitate application and a flea comb can be used carefully around the eyes to remove consolidated discharge.

KEY LEARNING OBJECTIVES

- Know which breeds of cat/dog are more prone to ocular problems and why
- Know what signs of ocular pain to look for and be able to identify a deterioration in a specific eye condition
- Understand how best to prevent ocular conditions as well as manage them once they have occurred

MULTIPLE CHOICE QUESTIONS

1. What form of analgesia DOES NOT improve ocular comfort in corneal ulceration?
   - **(A)** A topical non-steroidal anti-inflammatory drug
   - **(B)** A topical local anaesthetic solution
   - **(C)** A systemic anti-inflammatory drug
   - **(D)** A systemic opioid drug
2. What type of ocular discharge is indicative of a corneal disease process getting worse?
   - **(A)** A clear serous discharge
   - **(B)** A brown crusty discharge
   - **(C)** A grey mucoid discharge
   - **(D)** A mucopurulent discharge
3. What is the best way to avoid iatrogenic corneal ulceration during a sedation/general anaesthetic?
   - **(A)** Tape the eyelids closed
   - **(B)** Apply a topical antibiotic drop immediately after induction
   - **(C)** Apply a paraffin-based ointment to both eyes immediately after induction
   - **(D)** Apply a carbomer gel to both eyes before the procedure

Nutrition: are BOAS breeds different?

Nicola Ackerman

Everyone likes to think that their specific favourite breed of dog is special, but do brachycephalic breeds have different nutritional requirements to others? Specific work has been conducted looking at the requirements of different-shaped kibbles in both cats and dogs and how an almond-shaped kibble has been shown to be preferred by these breeds. This is down to the way in which these breeds pick up the kibble.

Dental disease is seen in brachycephalic breeds due to poor positioning of the teeth, dental overcrowding and over- and undershot jaws. Are these breeds any more predisposed to others of a similar size? — Possibly not. There is no published evidence that compares nutritional aspects and these breeds yet.

Many of these breeds also show an increased amount of flatulence. Studies have been conducted looking at different protein scources and their metabolites and how this influences flatulence and diet digestibility. It has been found that concentrations of fermentation metabolites were not statistically significantly different among diets. Wheat gluten, alone or in combination with poultry meal, improved protein and dry matter digestibility. Fermentation products were not affected by protein source.

The main gastrointestinal issue that is presented in first-opinion practice for these breeds is related to gastric reflux. Nutrition for these cases is very much on a trial-and-error basis, as what does well for one might not do quite as well for the next. The way in which the diet is fed can also have a very important impact on reflux, and those with oesophageal issues.

KEY LEARNING OBJECTIVES

- Be able to discuss the evidence-based nutrition behind nutritional fads for brachycephalic breeds with their owners
- Be able to apply nutritional knowledge based on the conformation of the breed
- Be able to discuss with owners the commonly seen gastrointestinal issues with these breeds

MULTIPLE CHOICE QUESTIONS

1. Brachycephalic breeds (cats and dogs) find which shaped kibble easier to pick up?
   - **(A)** Almond
   - **(B)** Spherical
   - **(C)** Triangle
   - **(D)** Square
2. (Brachycephalic) dogs have flatulence due to which of the following?
   - **(A)** Eating too quickly
   - **(B)** Swallowing (aerophagia) air whilst eating
   - **(C)** Aerophagia whilst not eating
   - **(D)** Potentially all of the above
3. Feeding wet food moulded into ball shapes has been shown to do which of the following?
   - **(A)** Reduce gastric reflux
   - **(B)** Help with motility down the oesophagus
   - **(C)** Help with swallowing
   - **(D)** No evidence currently exists to support any of these anecdotal theories