Anaesthetics in Brachycephalic Breeds

Brachycephalic – short nosed dogs e.g. Pugs, French Bulldogs, English Bulldogs pose an increased anaesthetic risk due to their conformation and potential concurrent disease as a result.

Airway conformation issues such as stenotic nares (narrow nostrils), aberrant nasal turbinates, elongated soft palate, excessive pharyngeal tissue, everted laryngeal saccules, laryngeal collapse and tracheal hypoplasia (small windpipe) are all common in these breeds and can all lead to a lack of oxygen reaching vital organs.

Brachycephalic breeds are also prone to regurgitation and reflux issues. These signs are not always as obvious as they sound like they should be and don't always culminate in vomiting – sometimes the reflux can be silent and the dog only demonstrates subtle signs e.g. excessive lip smacking, gulping or snorting. The concern regarding the high incidence of regurgitation in terms of an anaesthetic is the increased risk of aspiration pneumonia caused by breathing regurgitated matter into the airways, and this can potentially be fatal.

Special considerations for anaesthetic in brachycephalics to minimise risks:

- Anti-sickness/anti-regurgitation medications
    - Maropitant – an anti-emetic injection that can be given at admission to help reduce incidence of vomiting
    - Metoclopramide – a pro-kinetic (helps keep guts moving forward) minimises regurgitation
    - Omeprazole – can be given orally before admission or can be given intravenously pre-operatively – reduces regurgitation

- Preoxygenation – 100% oxygen is provided usually via a face mask for 3 minutes before inducing anaesthesia to bring O2 saturation levels in the blood up to 100%

- Airway maintenance and protection – during the anaesthetic a tube is placed into the airway to allow oxygen and anaesthetic gases to be administered. During recovery this tube is left in place for as long as is tolerated to minimise risk of laryngeal airway collapse.

- Eye lubrication throughout the anaesthetic is maintained to protect against corneal ulceration – brachycephalics have an increased incidence of this condition

- Temperature control – brachycephalics have a more limited ability to regulate their body temperature and are prone to getting too hot (hyperthermia) if stressed – medications can be used prior to the anaesthetic and post recovery to help reduce anxiety. Getting too cold (hypothermia) can also be detrimental to recovery and therefore body temperature is monitored regularly through anaesthetic and recovery to maintain it between normal levels.

No anaesthetic in any breed of animal (or even human!) is risk free, but being aware of potential complications gives us a chance to counteract them and provide as safe an anesthetic for our patients as we can.