



Surgery – Brachycephalic Airway and GERD (Gastroesophageal Reflux Disease)

Definition	<p>Brachycephalic airway syndrome is partial upper airway obstruction resulting from the conformation of “short head”/“short nose” breeds of dogs and cats. Obstruction may include any of the following airway passages: nasal (stenotic nares), pharyngeal (overlong soft palate), laryngeal (everted laryngeal sacculles, laryngeal collapse), and tracheal (hypoplastic trachea).</p> <p>The majority of brachycephalic dogs that present with airway disorders also have concurrent clinical or occult functional and/or anatomic digestive disorders¹ which include regurgitation, frequent vomiting, reflux esophagitis and/or duodenogastritis, pyloric stenosis, and hiatal hernia. In one prospective study, 98% of brachycephalic dogs undergoing endoscopic biopsy showed chronic gastritis changes on histopathology².</p> <p>1. Poncet CM, et. al. J Sm Anim Pract 2005;47(3):137-142 2. Poncet CM, et. al. J Sm Anim Pract 2005;46(6):273-279</p>	
Signalment and Clinical Signs	<p>Almost any brachycephalic breed can have concurrent gastrointestinal syndrome, but the most commonly affected breeds are English and French Bulldogs and Chinese Pug.</p> <p><u>Respiratory:</u></p> <ul style="list-style-type: none"> • Snoring • Increased inspiratory effort • Breathlessness • Intolerance to stress, effort, heat, exercise • Syncope 	<p><u>Gastrointestinal:</u></p> <ul style="list-style-type: none"> • Ptyalism • Gagging/Deglutination Disorders • Regurgitation • Vomiting
Cause	<p>The deglutination of air in large quantity promotes a chronic distension of the digestive tract which delays gastric emptying, promotes gastrin and gastric acid secretion and promotes the risk of GERD by opening the caudal esophageal sphincter. The abnormal/increased inspiratory efforts further induce an abnormally low negative intrathoracic pressure which induces and/or worsens regurgitation, vomiting and esophagitis (GERD) and hiatal hernia. The production of mediators (cholecystokinin, secretin) is then stimulated, leading to duodenogastric reflux, antral and pyloric mucosal hyperplasia.</p>	
Diagnosis	<p>Signalment, history, clinical signs, laryngeal examination (to define extent of brachycephalic airway disorders) and endoscopic examination (to define extent of gastroesophageal disease).</p>	
Treatment	<p>In several major studies, correction of the upper airway obstruction (stenotic nares, elongate soft palate and everted laryngeal sacculles resection) along with medical management utilizing a proton pump inhibitor antacid (omeprazole 0.7 – 1 mg/kg BID) and a prokinetic agent (metoclopramide 0.5 mg/kg BID) markedly receded or resolved the digestive clinical signs. This was confirmed in one prospective study endoscopically where gastroesophageal lesions resolved 6 weeks post upper airway corrective surgery and medical management for the GERD. Furthermore, medical treatment of digestive anomalies seems to improve the respiratory symptomatology of brachycephalic patients in the post-operative phase.</p>	
Prognosis	<p>The major postoperative complication is vomiting and aspiration pneumonia (8.5% in one study.³) Enforcement of 24 hours fasting prior to surgery, proper pre-medication of the patient and treatment of any concurrent digestive problems will limit the post-operative complications. By including a proactive global approach to respiratory and digestive tract disorders in brachycephalic breeds, postoperative aspiration pneumonia can be reduced if not eliminated.</p> <p>3. LorinsonD, et al. Canine Practice 1997;22:18-21.</p>	
Questions? Surgical Experts: Jim Boulay, DVM, MS, DACVS Barb Gores, DVM, DACVS Sharon Shields, DVM, DACVS	<p>The Veterinary specialty Center of Tucson has board-certified surgeons available for questions and consultations on surgical conditions during the weekdays. A member of the surgery team is on-call 24/7 to provide consultations to VSCT emergency doctors and to perform emergency surgery for patients seen by the VSCT emergency service. Board-certified surgeons have four additional years of training and are certified by the American College of Veterinary Surgeons to assure competency in advanced veterinary surgery.</p>	