



Lone Star Veterinary Surgical Specialists

Surgical Solutions for Your Loved Pets

Brachycephalic Airway Corrective Surgery

Post-operative Discharge Instructions

Your pet has been previously diagnosed with brachycephalic obstructive airway syndrome, or BOAS. This is a condition in which their shortened upper airway contributes to obstruction of airflow into the lungs. This condition is common in brachycephalic (flat/smush face) dogs like French Bulldogs, Pugs, Bulldogs, Boston Terriers and Boxers, which sometimes require surgery to help make them more comfortable and breathe easier.

The major components of this syndrome include:

- Stenotic Nares - the small nostril openings that prevent airflow into the nose.
- Elongated soft Palate - this palate tissue at the back of the mouth interferes with airflow, causing noisy breathing and snoring.
- Thickened soft palate - in some breeds, the soft palate is not only long, but also thick, causing further obstruction to the airway. This gets worse with age and makes breathing even tougher.
- Enlarged and everted tonsils - Enlarged tonsils further restrict the opening to the windpipe, and cause inflammation and add to gastrointestinal signs such as reflux and vomiting.
- Everted laryngeal sacculles - prolapse of part of the larynx, causing further airway obstruction and the first stage of laryngeal collapse (more severe cases have this).
- Narrowed or hypoplastic trachea - the airflow into the lungs is reduced by a narrow windpipe (this cannot be surgically corrected).

Stenotic nares and elongated soft palate are usually the primary problems, while eversion of the tonsils, laryngeal sacculles, and laryngeal collapse occur secondary to the negative pressure generated in the airway and indicate advanced brachycephalic obstructive airway syndrome.

Your pet may have undergone some of the following surgical procedures to correct the above abnormalities:

- Widening/opening of the stenotic nares
- Shortening of the soft palate
- Thinning of the soft palate
- Removal of everted laryngeal sacculles
- Removal of enlarged tonsils
- Removal of part of the laryngeal cartilages (cuneiformectomy)



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The main aims of early corrective airway surgery are to:

- Make it easier to breathe
- Improve exercise tolerance
- Reduce the noise associated with breathing
- Reduce the risk of overheating
- Slow down progression of airway collapse
- Reduce future anaesthetic risk
- Improve symptoms of reflux, regurgitation and vomiting

Expected Signs After Surgery:

- Mild post operative swelling/irritation of the larynx is common in the first few days after surgery, and so your pet might seem slightly more noisy than they were before surgery. This will generally improve over the next 1-2 weeks. There should not be any increased effort or significant noise with breathing.
- Some small drips or sneezes of blood from the nostrils can be common. Expect the nose to look a little "crusty" over the coming 1-2 weeks while healing, this is normal and expected. If you notice significant crusts on the nose, these can be softened with warm saline soaked gauze, but should generally be left alone unless completely blocking the nasal opening. The nose is usually healed by 2-3 weeks.
- Depigmentation of the nose - Pigment of the nose usually returns after 2-4 months.
- Occasional cough or gag, but otherwise doing well.
- An occasional "phlegm" vomit is unlikely to be of concern, but please let us know if this occurs. This may contain swallowed blood.

Some patients will need some mild sedatives (medication to calm them down) for a few days or longer after surgery to prevent excitement and heavy breathing, which can increase the risk of swelling and bleeding in the airway. If your pet is very excitable and boisterous, or seems to be breathing heavy, please contact us for further instruction.

Please be aware that although your pet will be improved after surgery, **their breathing will never be completely normal** and it is important to keep these points in mind for the long term health of your dog.

BOAS is a progressive condition and there are only a certain number of things we can address surgically. Short noses, large tongues, redundant pharyngeal mucosa, end stage laryngeal collapse and hypoplastic trachea cannot be surgically corrected.



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Potential Serious Complications After Surgery:

The potential serious complications of brachycephalic airway improvement surgery include:

- **Excessive bleeding and/or swelling of the throat:** this may require putting your pet back under a general anaesthetic place another breathing tube. If it can't be controlled this can lead to shock and potential death.
- **Obstruction of the opening of the airway (partial or complete):** this may lead to having to place temporary breathing tube into the neck to bypass the throat. Temporary tracheostomy tubes require intensive care hospitalisation (+/- ventilation) at a 24hr referral centre.
- **Ongoing regurgitation and vomiting:** this may require additional anti-nausea medications to be given and hospitalisation.
- **Aspiration pneumonia or lung inflammation:** this can be pre-existing (prior to surgery) or as a result of inhaling stomach contents. If this occurs, your pet may require intensive care hospitalisation +/- ventilation at a 24hr referral hospital.
- **Wound breakdown or infection:** during the post-op period the wounds in the throat can become infected or break down causing bleeding, swelling, scar tissue and/or obstruction to the airway.
- **Scarring/narrowing of the opening of windpipe:** this can occur if your pet has laryngeal collapse and requires tissues to be removed from the larynx. This can cause voice changes, loss of bark, respiratory noise, or progressive signs of upper airway obstruction.
- **Death:** this is a known catastrophic complication of multi-level corrective airway surgery. It can occur for numerous reasons such as but not limited to: anaesthesia complications, aspiration pneumonia, haemorrhage, swelling of the soft tissue structures.

If your pet is having difficulty breathing, turns blue, is not responsive, having significant effort with breathing or coughing persistently, coughing up large amounts of blood, or bleeding fresh blood from their nose, please head straight to your nearest emergency vet clinic immediately. Do not wait.

Post-Operative Instructions

***Please note - these are general recommendations following BOAS corrective surgery. Your pet may have had some, but not all of the procedures done, so there may be some specifics mentioned that may not apply to your pet.**

Feeding:

- Morning after surgery: Offer a small amount of breakfast; several soft, small meatballs (eg. canned food, or soaked kibble) or pieces of cooked chicken are preferred over dry kibble. Ideally continue softened food for 2 weeks post-op.
- Offer small amounts of water frequently. Do not allow access to large bowls of water in the first 2 weeks after surgery.



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- Monitor carefully while eating - start only with small amounts.
- It is VERY important for your pet to remain lean throughout their life and not become overweight. Carrying excess fat narrows and puts pressure on their throat/airway, and will place more strain on their heart and lungs. Long term - most brachycephalic dogs need calorie restricted diets to control their appetites.

Exercise:

- Confine to a small area – e.g. crate, small room or playpen.
- No vigorous activity for the next 2 weeks. No playing with other pets or people.
- No walks for the next 2 weeks.
- Keep on lead for toilet breaks in your own yard. NO ZOOMIES.
- It is recommended that you use a harness to walk your pet out to the toilet, as it decreases the risk of complications- by decreasing pressure on the trachea (windpipe).
- Your pet should always be kept inside in air conditioning on hot and humid days, even after they have recovered from BOAS surgery.

Medications:

- Your vet will send you home with medications specific for them and their procedures, please give them as advised.

Recheck and Suture Removal:

- Recheck exam with your veterinarian in 14 days, or ASAP if any concerns
- If your pet has absorbable sutures in the palate, they DO NOT need to be removed. They will reabsorb over 3-4 weeks. They do not generally cause any irritation however please contact us if you notice any coughing or gagging after 3-4 weeks post-surgery.
- Use an e-collar if pawing at the face.

If you have any questions or concerns during your pet's recovery, please do not hesitate to contact us. Thank you for letting Lone Star Surgical Specialists take care of you and your pet!