



CAPITAL CITY SPECIALTY & EMERGENCY ANIMAL HOSPITAL

SURGERY NEWSLETTER

OCTOBER 2024



Brachycephalic Obstructive Airway Syndrome - An Update

Brachycephalic obstructive airway syndrome (BOAS) is becoming increasingly prevalent due to the recent surge in popularity of breeds such as the French Bulldog in North America and Europe. There are many congenital anomalies of these breeds which lead to increased resistance to air flow in the upper airways. These include stenotic nares, aberrant nasal turbinates, hyperplastic soft palate, laryngeal collapse (of varying grade), and hypoplastic trachea.

Stenotic nares are responsible for 80% of the upper airway resistance in dogs with BOAS. Traditional correction of stenotic



nares is performed via the Trader's technique, a rhinoplasty procedure developed in 1949. In recent years, alar fold vestibuloplasty has emerged as a preferred technique to improve the diameter of the nares. This procedure consists of an amputation of the alar fold, allowing an opening of the nares beyond the external nostril orifice. A study on silicone models revealed that alar fold vestibuloplasty leads to a significantly greater cross-sectional area as compared with other techniques. This is currently the technique employed by all surgeons here at Cap City.

SURGERY@CAPCITYVET.COM - (613) 244-7387



BRACHYCEPHALIC OBSTRUCTIVE AIRWAY SYNDROME

Hyperplastic soft palate represents a congenital anomaly associated with brachycephalic breeds which can worsen with age and chronicity. The traditional technique employed to improve airflow in the nasopharynx and oropharynx is staphylectomy. A variety of surgical equipment has been used to perform staphylectomy (scalpel, monopolar electrosurgery, laser, Ligasure, etc.) with none showing any benefit over the other. A variety of procedures have been since described and reported with similar efficacy. Case selection is important and patients with chronic BOAS and thickened soft palates may benefit from newer techniques such as the folded flap palatoplasty (FFP), a technique first described in 2005 which both shortens and thins the soft palate. After careful case selection, our surgeons generally opt for standard staphylectomy or FFP.

Lastly, grade I laryngeal collapse implies eversion of the laryngeal saccules. As this narrows the cross-section area of the larynx, laryngeal sacculotomy has been recommended. While some authors believe there may be spontaneous resolution of sacculle eversion following surgical correction of the other components of BOAS (as this is a secondary change due to increased negative pressure in the upper airway),

a relatively recent small study did not reveal resolution of eversion. Therefore, laryngeal sacculotomy is recommended in cases where it is believed to significantly decreased the airflow at the level of the larynx.



Patient positioning and OR setup prior to BOAS correction. The patient is positioned in the BOSS mini, a surgical positioning device which provides maximum workspace and improved ergonomics for the surgeon. The BOSS mini was invented by one of our surgeons, Dr. Phil Larose.

Perioperative management of patients undergoing BOAS correction can be challenging. Successful outcomes following surgical correction of BOAS is truly the result of a close collaboration between our anesthesiologist, surgeons and critical care specialist. From the pre-operative period where they are treated with multiple antiemetics, prokinetics and locoregional analgesia to the post-



BRACHYCEPHALIC OBSTRUCTIVE AIRWAY SYNDROME

operative period where they receive the necessary level of anxiolytics, sedation and oxygen supplementation (flow-by, nasal prongs/cannula, high-flow warmed/humidified oxygen, etc.), these patients benefit from an overnight stay in our intensive care unit to make sure they are out of harm's way prior to returning home to continue their recovery.

Following BOAS surgery, owners can expect to see improvements in most clinical signs of airway obstruction. Improved exercise and heat tolerance, decreased stertor, and reduced snoring are expected. Oftentimes, owners observe an improvement in regurgitation frequency, although this is variable considering that many BOAS patients have underlying hiatal hernia.



Patient positioning and OR setup prior to BOAS correction. The patient is positioned in the BOSS mini, a surgical positioning device which provides maximum workspace and improved ergonomics for the surgeon. The BOSS mini was invented by one of our surgeons, Dr. Phil Larose.



Patient immediately following alar fold vestibuloplasty and standard staphylectomy positioned in the BOSS mini (distributed by Dispomed).



CASE OF THE MONTH - VENTRAL SLOT

Dr. Jeff Biskup, DACVS

Bella, a 12.5-year-old, female spayed, Shih Tzu presented with a 24-hr history of decreased mobility and lethargy. On presentation, she was quiet and responsive, and her vitals were normal. She walked normally but it was reported she would occasionally “buckle” on her left forelimb. An orthopedic exam was unremarkable. On neurologic exam, she had:

- Bilateral forelimb proprioceptive deficits
- Normal proprioception in the hind limbs
- Normal limb reflexes
- Limited mobility of the neck
- Normal cranial nerves

Given the findings, differentials included: intervertebral disc disease (IVDD), fibrocartilaginous embolism (FCE), neoplasia, or trauma.

The following diagnostics were discussed:

- **Radiographs:** could rule out larger neoplastic lesions or trauma but would not diagnose IVDD (unless very mineralized) or FCE.
- **CT scan:** would be very good at diagnosing trauma, most neoplastic lesions, most IVDD cases, but would not diagnose FCE. Other benefits of CT scan include that it can be

- performed under sedation and is fast to perform. CT scan gives limited information of spinal cord health and can miss IVDD that is not mineralized; however, a recent consensus statement by the ACVIM (neurology) concluded that there is minimal difference between CT and MRI for the diagnosis of IVDD in dogs.
- **MRI:** is the gold standard for neurologic lesions and assessing spinal cord health, but requires anesthesia and has a longer acquisition time. As stated above, a consensus statement by the ACVIM concluded that there is minimal difference between CT and MRI for the diagnosis of IVDD in dogs based on a review of the published literature.

At Cap City, CT scan is available 24 hours a day and, with appropriate case selection and owner education, can be an appropriate choice for neurologic work up. In a study of 555 dogs, only 3.6% of dogs needed additional diagnostics (myelography or MRI) to diagnose IVDD. This is comparison to 17.4% for non-chondrodystrophic breeds.

Medical management and surgical decompression were discussed with her owners. Most research assessing the



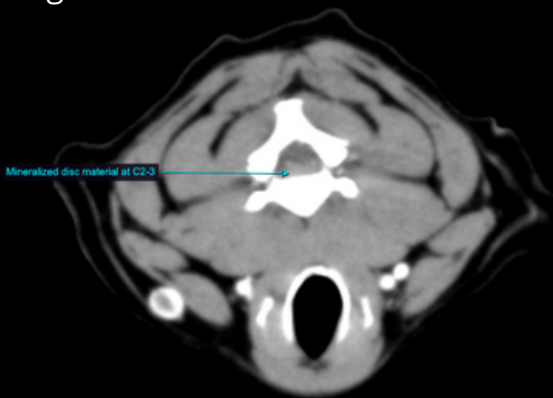
CASE OF THE MONTH - VENTRAL SLOT

Dr. Jeff Biskup, DACVS

prognosis of medical management and surgery focuses on dogs with thoracolumbar IVDD. A recent study suggested faster initial improvement in dogs with cervical IVDD treated surgically with less severe clinical signs at presentation but there was no difference between the groups at 30 days (e.g., dogs with more severe neurologic signs had similar improvement by 30 days compared to less affected dogs).

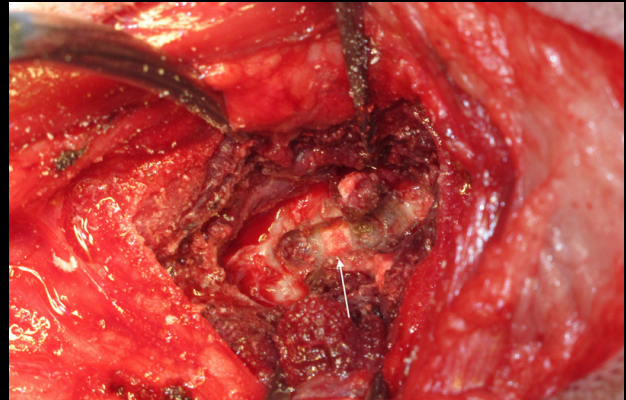
Because Bella was parietic in her forelimbs, her owner decided to pursue imaging and surgery, if appropriate.

A CT scan was done under sedation and an intervertebral disc extrusion was diagnosed at C2-C3.



CT scan showing extrusion of a mineralized intervertebral disc at C2-C3.

A ventral slot decompressive surgery was performed at C2-C3.



Intraoperative view of a ventral slot being performed. The arrow is pointing toward the intervertebral disc.

Bella had improved comfort 12 hours after surgery and was ambulatory paraparetic. At her 1-week recheck exam, Bella was walking normally with normal conscious proprioception.

We are lucky to have four surgeons at Cap City that are comfortable with neurologic surgery including decompressive surgery, stabilization, and fracture repair. If you ever have questions about findings on your neurologic exam and the urgency of surgery, please feel comfortable reaching out to us. We can typically accept cases the same day for work-up and surgery, if necessary. We can also instruct you if an MRI is more appropriate for preoperative imaging.



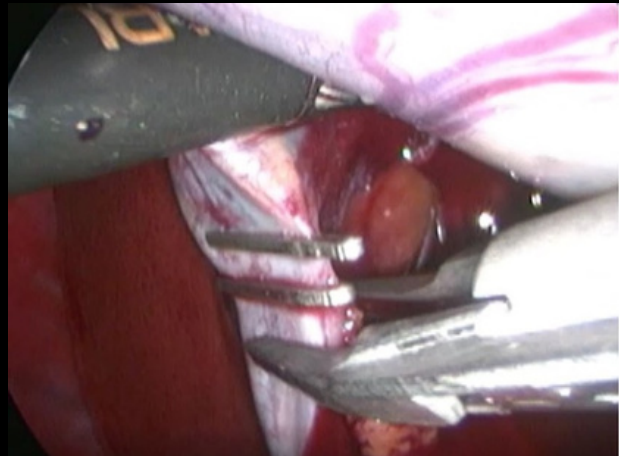
DID YOU KNOW

That We Do Minimally-Invasive Cholecystectomies?

A number of different surgeries can be done through a minimally-invasive approach and one of the more common minimally-invasive surgical techniques is laparoscopic cholecystectomy. This “key-hole” procedure allows full removal of the gallbladder through three small incisions. The benefits of this laparoscopic surgery include less pain, a shortened hospital stay, and low to negligible risk of pancreatitis.

Patients with an early gall bladder mucocele have historically been treated medically due to concerns that open surgery is invasive and associated with potential for complications. A 2018 JAVMA paper evaluating elective cholecystectomies, however, revealed a significantly better prognosis when gall bladders were removed prior to the onset of clinical signs. In this study, the overall mortality rate was 2% for dogs undergoing elective cholecystectomy, as compared to 20% in the non-elective group. This study supports the idea that surgical intervention for patients with ultrasonographic diagnosis

of biliary mucoceles should be performed early, even if the patients are not yet clinically ill.



Case selection is paramount and not all patients with gall bladder mucocele are candidates for minimally-invasive surgery. Emergency cases, cases with concern about impending gall bladder rupture and wall compromise as well as patients with significant increase of bilirubin and biliary duct distension/obstruction (who may need duct flushing via open surgery) are not suitable candidates for laparoscopic cholecystectomy. Good candidates for laparoscopic cholecystectomy are cases that are elective, have early, organizing gallbladder mucocele, no elevation or only mild elevation of bilirubin, or cases with refractory bacterial cholecystitis.



MEET OUR TEAM

Natalie

Anesthesia Technician

My name is Natalie and this is my 18th year as a veterinary technician. I have been working at Capital City since the grand opening and have been following Dr. Liptak as a surgery technician for the past 10 years. I have just recently joined the anesthesia team and now solely take on the challenge of being an anesthesia technician for a wide variety of cases that we see daily.

My love of animals started at an early age. Being raised on a small hobby farm meant I was always surrounded by animals and often took on the responsibility to care for them. I took a keen interest in science and biology in my high school years and when I discovered the veterinary technician program, I knew my career was set.

Ever since the first time I witnessed a splenectomy in general practice, I have loved surgery. Being on the anesthesia team allows me to get my fill of surgeries and enjoy the challenge of being their anesthetist. Capital City has a wide variety of top line monitoring equipment and having the ability to provide a gold standard of care to all our patients from premed to recovery is very satisfying as a tech. Some of my



favourite surgeries to be part of include abdominal explores, liver lobectomies, splenectomies, and total hip replacements.

Outside of work I live with the love of my life, Jamie, and his active cocker spaniel, Jasper. We are active members of the Rideau Trail Association and The Ottawa Rambling Club and spend most of our weekends hiking the trails between Ottawa and Kingston. I also love photography and do my best to capture the essence of the surgery department with photos that are posted on the Cap City Facebook and Instagram pages.



CAPITAL CITY SPECIALTY & EMERGENCY ANIMAL HOSPITAL

REFERRALS

As the largest specialty hospital in the National Capital region with five small animal surgery specialists, we are able to offer the complete range of surgeries to our referring veterinarians and owners. From TPLOs to total hip replacements, from basic to complex fractures and luxations repairs, from hemilaminectomies for dogs with IVDD to brain tumor resections, from cystotomies to portosystemic shunt attenuations, from laparoscopic spays, gastropexies and cholecystectomies to

subcutaneous ureteral by-pass and thoracoscopic lung lobectomies, and from cutaneous tumor resections to limb-sparing surgery and oral and maxillofacial tumor resections, we do it all. Not only do we do it all, but we do it all on weekdays for elective and emergency cases and after hours on weekends for emergency surgeries. We also have 24/7 support from our emergency team as well as specialists in anesthesia, emergency and critical care, and internal medicine.

To refer cases to our surgeons, go to our website at <https://capcityvet.com/surgery-referral-form/>, or call or email Jenn at (613) 244-7387 or surgery@capcityvet.com.



SURGERY@CAPCITYVET.COM - (613) 244-7387