



# REFERRAL NEWS



## In this edition:

Tracheal collapse  
in dogs

Clinical work at  
Rosemary Lodge

Next CPD date  
– Wednesday 5<sup>th</sup>  
October 2016 –  
Respiratory Tract  
Medicine and  
Surgery

## Bath Veterinary Referrals

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## Brief introduction to tracheal collapse in the dog:

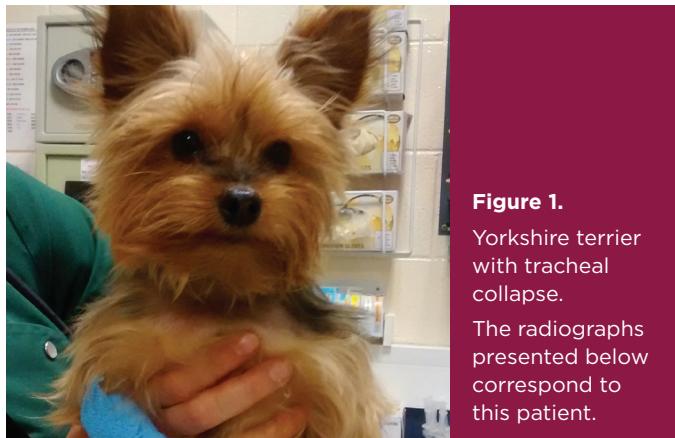
Sabela Atencia

DVM, MVM, MRCVS Referral Medicine Clinician

**Tracheal collapse is a common, progressive, degenerative disease of the cartilage rings. It is a common cause of cough in small and toy breed dogs. The collapse can be focal or diffuse, affecting the cervical region, intrathoracic segment, or most commonly both areas. In some cases it can progress, involving the bronchial and bronchiolar airways.**

It occurs as a result of cartilage hypo-cellularity and decreased glycosaminoglycan and calcium content.

The most commonly affected breed is the Yorkshire terrier. Other small sized breeds such as miniature Poodle, Pomeranian and Chihuahua are also frequently reported.



**Figure 1.**

Yorkshire terrier  
with tracheal  
collapse.

The radiographs  
presented below  
correspond to  
this patient.

A detailed clinical history is important to determine the best diagnostic tests to perform, therapy to implement and prognosis to give. Any concurrent illnesses, duration of clinical signs, previous medications and previous response to treatments are important questions that need to be answered.

A history of chronic, paroxysmal cough precipitated by excitement, anxiety or pulling on the leash are typical for this disease. The cough is usually dry, harsh and non-productive. The severity of cough or other associated clinical signs (such as cyanosis or syncopal episodes from hypoxemia) are not associated with the degree of tracheal collapse, or the severity of the anatomic changes. The cough is often described as similar to a “quack” but this is not pathognomonic.

## Summer update from BVR...

Welcome to our latest newsletter. We hope you have all had a chance to take a break from practice over the summer and are recharged for the rest of the year.

As I write this, we are welcoming a new member of staff to our team, Rhiannon Strickland, who is joining the surgical team as assistant referral surgeon.

Alasdair and Jon will remain in charge of external referrals cases in surgery, and Rhiannon will be assisting them with care of these cases, so you will start to see her name on referral reports and e-mails over the coming months.

In the New Year we expect to have appointed a third referral surgeon in addition, to cope with our ever increasing workload.

This newsletter features an article on tracheal collapse by Sabela Atencia, which fits with the theme of our next CPD day (October 5<sup>th</sup>) on Respiratory Tract Medicine and Surgery.

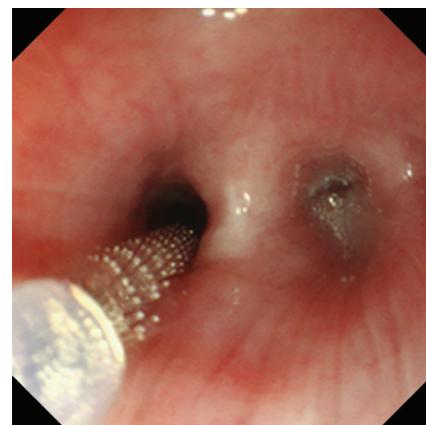
We hope you find it useful and interesting.

## Brief introduction to tracheal collapse in the dog continued.

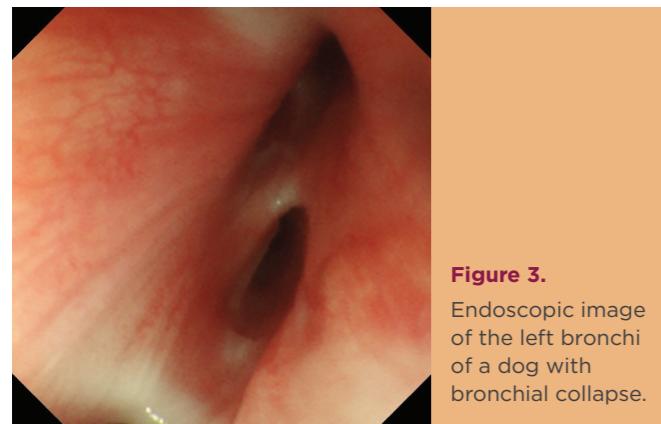
Given that concurrent medical illnesses, such as hepatic dysfunction, are commonly seen in these type of dogs, a baseline haematology, biochemistry and urinalysis are essential.

Other differentials for chronic cough such as chronic bronchitis, pneumonia, congestive heart failure, lung worm or pulmonary neoplasia should be taken into account, and ruled out during the diagnostic workup.

Endoscopy is considered the gold standard for the diagnosis of tracheal collapse. The reason behind this is because tracheoscopy permits the visualisation of the entire tracheal length, enabling you to assess the movement of the dorsal membrane during light anaesthesia and determine the grading of the collapse. During the same procedure, concurrent bronchial collapse can be assessed. Guided broncho-alveolar lavage and brush cytologies for further bacteriological and cytological exams can also be performed during the same bronchoscopy.



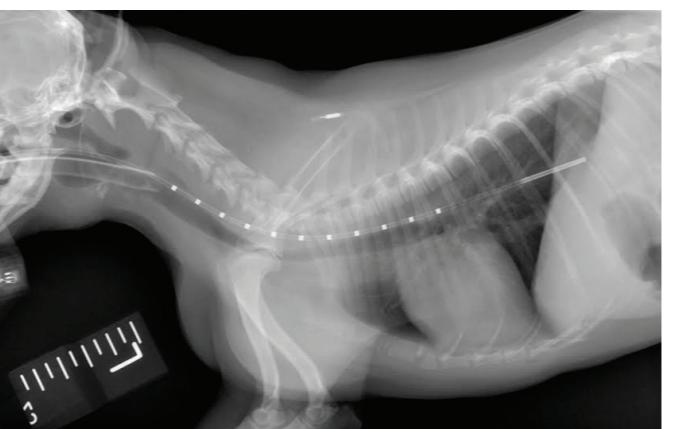
**Figure 2.**  
Endoscopic view of the carina of a dog with chronic cough.  
Guided brush cytology of the right bronchi (left side of the image) was performed.



**Figure 3.**  
Endoscopic image of the left bronchi of a dog with bronchial collapse.

Tracheal collapse can be classified by 4 different grades depending of the degree of narrowing/anatomical changes detected during endoscopy:

- 1. Grade I:** The laxity of the trachealis dorsalis muscle results in 25% luminal compromise
- 2. Grade II:** Weakening of the cartilage rings results in 50% of luminal compromise
- 3. Grade III:** Further flattening of the tracheal rings results in 75% of luminal compromise
- 4. Grade IV:** There is complete loss of tracheal lumen



**Figure 4.**  
Left lateral view of the thorax of a dog with tracheal collapse at the level of the caudal cervical trachea.  
Note the oesophageal marker dorsal to the trachea. The animal was partially extubated and 20cm H<sub>2</sub>O positive pressure was applied to facilitate the visualization of the tracheal collapse.

Other imaging techniques commonly used as part of the diagnostic workup for tracheal collapse include thoracic radiographs and fluoroscopy. The most useful views of the trachea include lateral projections during inspiratory and expiratory phases of the respiratory cycle. The length and width of the collapse can be measured with the lateral plain radiographs (see Figure 4.). With the radiographs not only is the trachea examined, but also the rest of the pulmonary field. However neither radiography or fluoroscopy are as reliable as endoscopy for diagnosis.

Evaluation of laryngeal function under a light plane of anaesthesia should also be performed to rule out laryngeal paralysis or laryngeal collapse. Laryngeal paresis, paralysis, or collapse is present in approximately 30% of dogs with tracheal collapse.

Many affected dogs have concurrent degenerative valve disease and echocardiography is recommended to assess cardiomegaly.

### Treatment:

Conservative measures such as control of body weight, use of harness instead of lead, restriction of exposure to smoke and allergens, and reduction of exercise and humidity are essential. As mentioned earlier, management of concurrent diseases is very important.

If these measures fail to control the clinical signs, concurrent medical treatment can be given. Antitussives (e.g. hydrocodone, codeine or butorphanol), anti-inflammatories (e.g. prednisolone, fluticasone propionate) or sedatives (e.g. low doses of acepromazine) are the main drugs commonly used for the management and reduction of clinical signs associated with tracheal collapse. The use of bronchodilators remains controversial. In some cases their use can be indicated, if during the diagnostic work-up concurrent bronchial collapse is detected. However, they may provide minimal palliation of clinical signs, and instead exacerbate the anxiety of

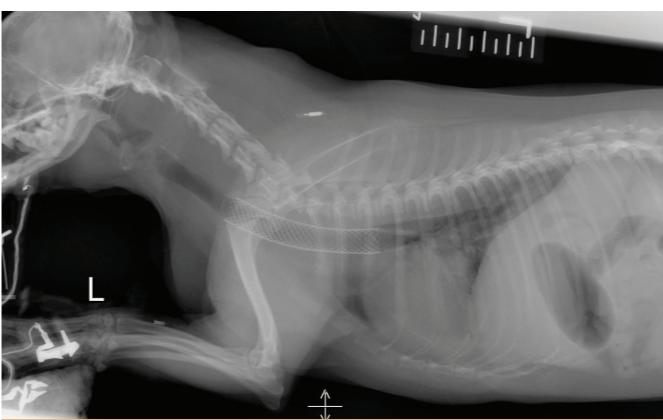
the dog. Inhaled corticosteroids are preferred to oral steroids for chronic therapy.

When medical management is not sufficient to control the dog's clinical signs (e.g. the dog is showing cyanosis, marked exercise intolerance or syncope due to hypoxia), the next step would be to manage the tracheal collapse either by using ring prostheses or intraluminal stenting.

The decision of whether to perform surgery versus stenting is a dilemma, the evaluation must be made on an individual case basis. For example, if significant intrathoracic tracheal collapse is present, then surgery is unlikely to resolve the problem and may be associated with excessive morbidity. Therefore intraluminal stents should be considered.

If only cervical tracheal collapse is present, then surgical rings may be considered. An exception may be in geriatric patients or patients with excessive comorbidities in which prolonged anaesthesia or healing associated with surgery may present more of a concern.

Tracheal stenting is considered a "concurrent procedure" used when medical therapy has failed. Current cardio respiratory disorders must be always addressed prior to the procedure. Owner's inability to administer medication is not a valid reason to stent a patient because most dogs will require chronic medical treatment after the stenting procedure.



**Figure 5.**  
Same dog presented above (figures 1 and 4).  
The tracheal collapse has been treated with an intraluminal stent.

Reported post-operative complications include stent shortening, fracture or migration, excessive inflammatory tissue formation and progressive tracheal or bronchial collapse.

The majority of dogs with tracheal stents will require lifelong medication, and the owners should be aware of this prior to the stent placement. Rechecks are scheduled every three months for the first year, and every six months after that.

## References:

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## Next CPD Date

Wednesday 5<sup>th</sup> October 2016

**Respiratory Tract Medicine and Surgery**

### TOPICS COVERED:

- Tracheal collapse in dogs
- Canine infectious inflammatory diseases
- Thoracic imaging
- Upper airway surgery in dogs

**ZERO Referral Consultation FEES for any UK forces staff**



supporting British Armed Forces



## Cases recently seen

A number of dogs with aspergillosis (mycotic rhinitis), two cases of adrenal neoplasia (phaeochromocytoma), salivary gland carcinosarcoma, Conn's syndrome in a cat, concurrent cholecystitis and Cushings in a dog, too many obstructed bulldogs and TECAs to count, hepatic encephalopathy due to portosystemic shunt in several dogs, situs inversus in a Flat Coated Retriever, aspergilloma of the syrinx of a parrot, many rabbits with dental disease and related abscesses (CT is fantastic for these), otitis interna in a rabbit as a complication of otitis externa.

## Types of referral seen

- Internal medicine
- Soft tissue surgery
- Endoscopy/laparoscopy
- Medical and surgical oncology
- Ophthalmology
- Rabbits, small mammals and exotics
- Neurology
- Cardiology
- Orthopaedic and fracture repair
- Onsite MRI/CT scanning
- Hydro/physiotherapy

## Why choose Bath Veterinary Referrals?

- We pride ourselves on giving you the highest level of service
- We strive to enhance your reputation, looking after your clients and their pets in a way you would be proud of
- We offer a caring, friendly and personalised service. We keep clients and referring vets informed at all times
- We have a superb team of night nurses and night vets, a flagship hospital and the very latest equipment

## CPD by Bath Veterinary Referrals

Our next LOW COST CPD course is titled:  
**Respiratory Tract Medicine and Surgery**

Wednesday 5<sup>th</sup> October 2016  
9.30am- 4.30pm at  
Coombe Lodge, Blagdon BS40 7RE  
Course Fee - £100 per delegate

**Lectures will include** - Tracheal collapse in dogs, Canine infectious inflammatory diseases, Thoracic imaging and Upper airway surgery in dogs.

## Organising a referral is simple

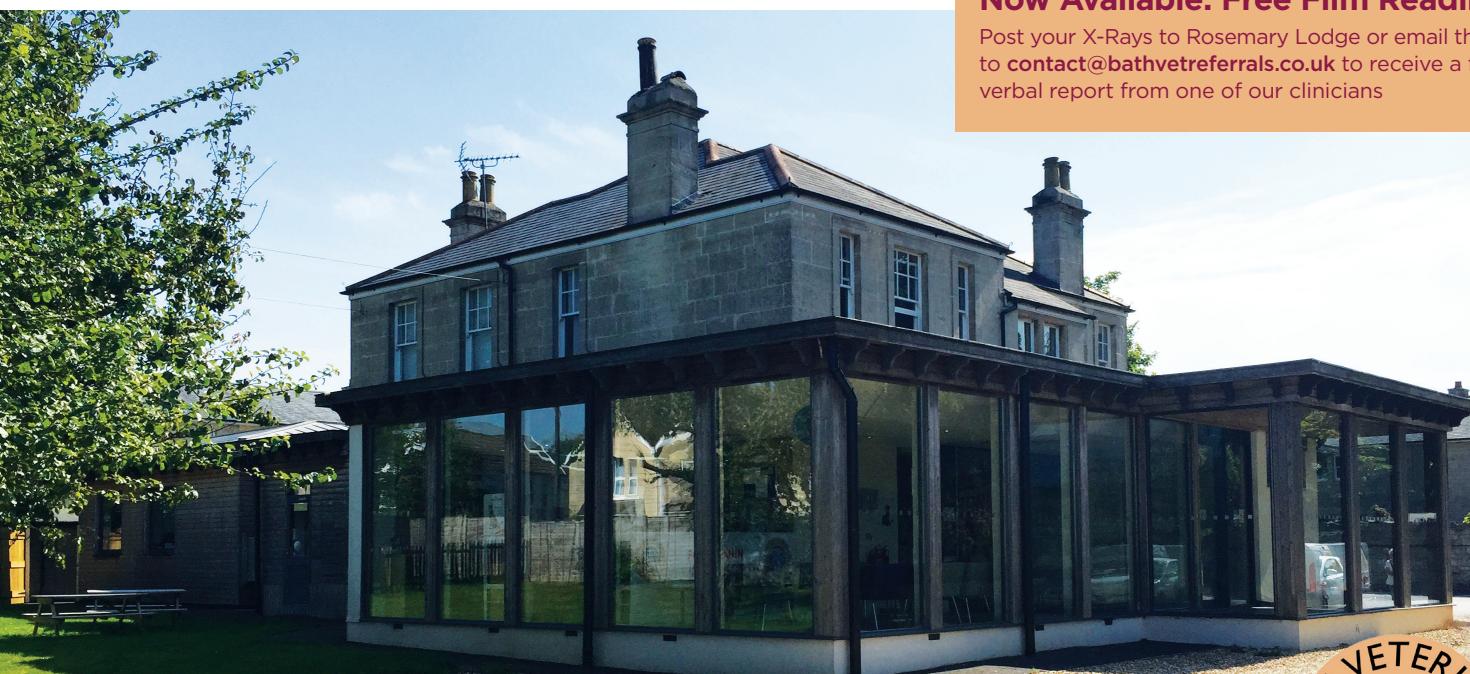
Just phone Rosemary Lodge Veterinary Hospital on **01225 832521** and book in with one of our receptionists.

One of our clinicians will be very happy to discuss the case details prior to arranging the referral. Once you have made contact we will normally ask to speak directly to the pet's owner to swiftly arrange an appointment that fits in to their timetable. We do ask you to fax or post us any relevant history with supporting referral letter.

We will always do our best to fit in any emergency cases immediately and see them on the day you call us.

## Now Available: Free Film Reading

Post your X-Rays to Rosemary Lodge or email them to [contact@bathvetreferrals.co.uk](mailto:contact@bathvetreferrals.co.uk) to receive a free verbal report from one of our clinicians



## Our clinicians

**Alex Gough** MA VetMB CertSAM CertVC PGCert (Neuroimaging) MRCVS - Head of Medicine Referrals

**Alasdair Hotston Moore** MA VetMB CertSAC CertVR CertSAS CertMEd MRCVS - Head of Surgical Referrals

**Jon Shippam** BVSc CertSAS MRCVS - Orthopedic Surgeon

**Jenny Lambert** BVM&S CertVOphthal MRCVS - Ophthalmology

**Lisa Gardbaum** BVetMed CertSAM MRCVS - Internal Medicine

**Sabela Atencia** DVM MVM MRCVS - Internal Medicine

**Elisabetta Mancinelli** DVM CertZooMed Dipl ECZM (Small Mammals) MRCVS

European Veterinary Specialist in Zoological Medicine (Small Mammals)

