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Practical Approach to Chronic Allergic Airway Disease in Horses

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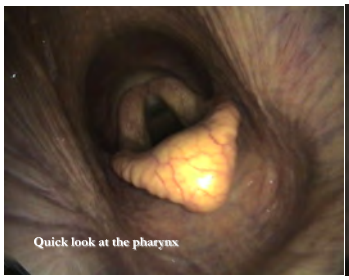
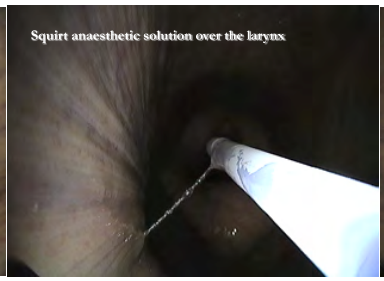
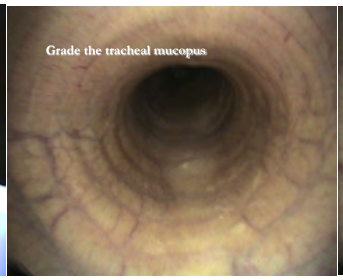
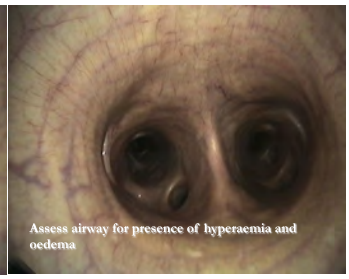
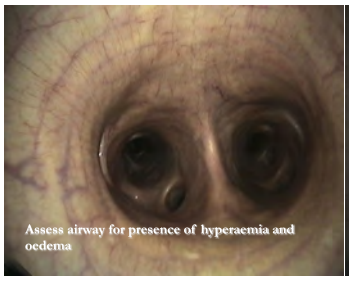
HOW TO BAL Richard Hepburn

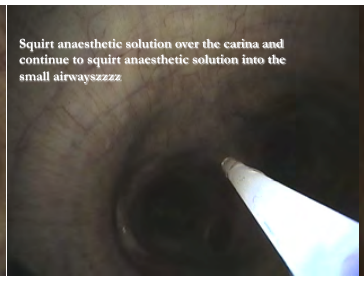


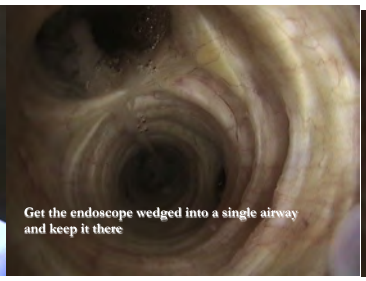


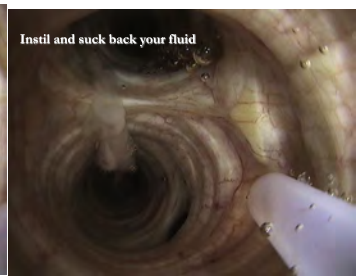












Blind bronchoalveolar lavage is a tool that many practitioners find intimidating and too involved for routine use in the field, and yet the procedure itself is easily performed and is very rewarding.

PROCEDURE: Adequate sedation (combination of alpha-2 and butorhanol will reduce coughing), I will rarely twitch if the horse is adequately sedated, although it is useful for one that shake their heads.

Blind BAL: You will need a bronchoalveolar lavage catheter, (3 way tap is handy but not essential), 1x60ml syringe containing 0.66% Lidocaine (without adrenaline) 20 ml 2% lidocaine and 40ml sterile saline), 4-6 x 60ml syringes containing 60ml of sterile saline each and a 10ml syringe full of air. Extend the horse's head and insert the bronchoalveolar lavage catheter to the level of the larynx (can measure beforehand from nostril to vertical ramus of mandible) - squirt in 10ml of local anesthetic solution. Then with the head still extended advance the catheter into the trachea and begin infusing the local anaesthetic solution as the catheter is slowly advanced into the lung. Coughing will often only start when you are a long way down, approaching the carina. The catheter should go in without any resistance, if you feel resistance you are probably in the oesophagus. Keep advancing the catheter into the lung until it becomes wedged, then inflate the balloon on the catheter tip with 5ml of air or saline. Keep a steady retaining pressure on the catheter at the nostril.

Endoscopic BAL: A two + metre endoscope (9-12mm OD) can be used in place of the lavage catheter, and can allow for lavage of selected lung segments. The endoscope is advanced as far as possible into the lung until it is wedged. It is important to keep it firmly placed at the nostril to ensure that fluid leakage out of the segment under investigation does not occur. The airway mucosa will gently "ruck up" when the scope is sufficiently wedged.

Both: Coughing will stop when you are wedged. Once anchored, quickly inject all of the 4-6x60 ml syringes of sterile saline through the catheter into the lung, then use the empty syringes to withdraw sequential aliquots of fluid from the lung. Don't worry if you don't get all of it back, it will come out very quickly at the end (don't stand in front!). The volume of fluid recovered varies from 40-60% (occasionally less in cases of RAO) and should be grossly assessed for colour, turbidity, presence of mucoid debris. There are changes in the mast cell component of recovered airway fluid after the first syringe, neutrophils are uniformly present. In order to homogenise the sample I mix half the first syringe with half the second syringe and use this as my submitted sample.

Problems: *No fluid comes back* - your seal was incomplete (or you were unlucky and hit an area of collateral ventilation) - reposition / reinflate cuff, then infuse another 200ml (up to a total maximum overall volume of 500ml) and aspirate. *Few cells are seen* - your infusion volume was too small - this can result in a purely bronchial sample, whereas a large infusion volume (3-400ml) will always produce BALF.

Inhaled Therapy for a 500kg Horse, Richard Hepburn MRCVS

Inhalers: **Atrovent 20mcg/puff, 200 doses**

Fluticasone 250mcg/puff, 120 doses

Beclometasone 200mcg/puff, 200 doses

Salbutamol 100mcg/puff, 200 doses

Inhaled therapy is administered via suitable spacer device - either a Baby-Haler, an Aerohippus or an Aeromask

Please clean the spacer device every once a week – dissemble and wash with clean, warm, soapy washing up liquid water, don't rinse and allow to air dry. DO NOT TOWEL DRY!

Before using the inhaler at the start of each treatment period please shake for 30 seconds, then discard the first puff.

To load the inhaler with a drug dose in between each puff please shake for 5 seconds.

Do NOT put all the puffs into the spacer at once, then give to the horse as the drugs will settle out and this will not work!

WEEKS 1-4

Apply mask and administer the following medications *TWICE DAILY*

1. Atrovent – Give 20 puffs *(change inhaler every 3 days)*
2. Fluticasone - Give **10** puffs *(change inhaler every 6 days)*

WEEK 5-8

Apply mask and administer the following medications *TWICE DAILY*

1. Fluticasone - Give **10** puffs *(change inhaler every 6 days)*

20 puffs of Atrovent can be used 30 mins pre-exercise if required

Repeat endoscopy is advised 6-8 weeks after starting therapy

WEEK 9-12

Apply mask and administer the following medications *TWICE DAILY*

1. Fluticasone - Give **8** puffs *(change inhaler every 13 days)*

Repeat endoscopy is advised before starting maintenance therapy

WEEKS 13-17 – twice daily maintenance therapy

Apply mask and administer the following medications *TWICE on each treatment day*

1. Beclametasone - Give **8** puffs *(change inhaler every 13 days)*

WEEKS 18 onwards – once daily maintenance therapy

Apply mask and administer the following medications *ONCE on each treatment day*

1. Beclametasone - Give **8** puffs *(change inhaler every 26 days)*

RESCUE THERAPY

Give 3-6 puffs of the salbutamol inhaler, please contact the clinic and continue maintenance therapy.

PRECAUTIONS: please observe a 7 day withdrawal time when competing.