



South Shore Equine Clinic & Diagnostic Center
151 Palmer Road
Plympton, MA 02367
Phone: (781) 585-2611 Fax: (781) 585-0611
www.ssequineclinic.com

RECURRENT AIRWAY OBSTRUCTION / HEAVES

Recurrent airway obstruction (RAO) is similar to “asthma” in humans, and is most likely stimulated by an increased sensitivity to small particulate matter within the hay (dust, mites, outdoor pollen, endotoxin, etc.), or noxious gases such as ammonia from urine. Horses with RAO typically have excess mucus production in the airways, neutrophil (a type of white blood cell) accumulation in the airways, airway hyperreactivity, and variable degrees of respiratory distress. There has also been recent research demonstrating a genetic component to the disease; as offspring of RAO horses are up to five times as likely to develop the disease. RAO is not a curable disease, but can be managed. Our goal with therapy is to reduce the degree of inflammation in the horse’s airways and reduce the degree of reactivity. For this reason, it is essential to reduce the horse's exposure to potential allergens. Ideally the horse should be turned out 24 hours a day to eliminate exposure to high concentrations of particulate matter within the barn. If this is not possible, please ensure that ventilation is excellent, no hay is stored in the loft above the horse's head or stored in close proximity of the stall. In order to reduce the horse's exposure to hay, consider using a "processed hay form" such as Dengie or hay cubes in addition to complete feed pellets. As a second (though less optimal) option, you can soak the hay prior to feeding for 10 minutes. Do not soak longer than this, or the nutritional content of the hay will be compromised.



In order to properly diagnose RAO, a **complete physical examination** is performed, including a **rebreathing exam**. **Routine blood work** is also performed, to help rule out other forms of respiratory disease, such as pneumonia. A **Bronchoalveolar lavage (BAL)** is performed to confirm the diagnosis. The BAL is a “lung wash” where saline is instilled into the small airways of the lungs and then a sample of the lung wash fluid is aspirated out. This fluid sample is examined cytologically to confirm the presence of certain inflammatory cell types. Once a diagnosis of RAO has been made, it is imperative to follow the management guidelines outlined below, as well as to institute medical therapy. Typically, the horse is treated with a tapering course of oral prednisolone (a corticosteroid) to induce remission of RAO. Then, inhaled steroids and an inhaled bronchodilator may be added to the treatment plan to help keep the horse in remission. Inhalants can be extremely useful because they deliver a high concentration of drug directly to the airways, which decreases the incidence of side effects from systemic absorption (such as with oral steroids). The inhalant therapy typically consists of an inhaled corticosteroid and a bronchodilator; the latter which opens the airways. The inhalants are delivered by placing a mask (Aeromask™, AeroHippus™, or Equinehaler™) over the nostril(s) of the horse and administering puffs just before inhalation. If the horse responds well to treatment, he/she can often be maintained on inhalants alone; and at times they are often needed only prior to exercise. Of course this is all dependent upon the individual patient, whether the airway disease is mild, moderate, or severe, and whether or not changes in environmental management can be met. Every patient is unique, and the treatment plan will be tailored to meet the individual needs of the horse.



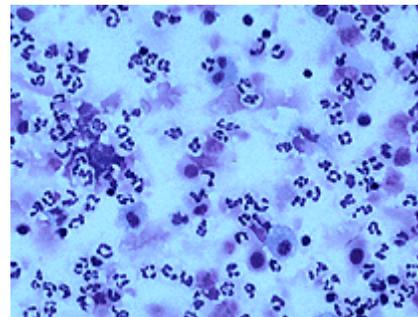


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RECURRENT AIRWAY OBSTRUCTION (RAO)

Please follow these guidelines:

1. Please monitor the horse's frequency of coughing and exercise intolerance and call with an update in approximately 2-3 weeks. If the horse demonstrates worsening of respiratory signs such as coughing, exercise intolerance, or slow recovery; we will need to revert back to the previous level of treatment.
2. RAO can be managed to a great extent if the breathing environment of the horse is improved. It is therefore important that your horse be turned out as much as possible. Permanent turnout in a run-in shed and paddock would be appropriate. Even entering the barn once daily can be too much for an RAO horse. Limiting the dust in the riding arena will also be beneficial. If your horse is to be kept in a stable, please keep him in a stall next to the barn door, and try to keep this door open even in cold weather.
3. Please keep your horse away from hay dust. This includes soaking his hay for 5-10 minutes prior to feeding and housing him outdoors. Feeding off the ground is also helpful to maximize drainage of foreign particles from the chest. When trailering, please do not trailer with hay and without shavings if possible. Hay stored above horses in barns is also not recommended.
4. Dengie hay and hay cubes are processed feeds with a lesser degree of dust. You may consider offering these products in addition to a complete feed grain, but a good quality grass hay and paddock turnout can be sufficient in cases where there are concerns regarding weight loss/gain and/or gastric ulceration in addition to keeping the airway inflammation at a minimum.
5. Please schedule a recheck examination in 4-6 weeks time, so that we may repeat thoracic auscultation and BAL to assess response to treatment.



BALF cytology from horse with RAO