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Diagnosing Respiratory Infection

The scenario might sound familiar: You take a couple laps around the arena with your horse, and suddenly he starts coughing so hard he yanks the reins out of your hands. You let him rest but he doesn't seem to be able to catch his breath. Could he have picked up a respiratory infection at the last horse show?

This is a typical case an equine veterinarian would encounter. The owner brings a horse in to a referral clinic, reports a cough and exercise intolerance, and might immediately ask for him to be put on antibiotics. As veterinarians, our job is to decide if antibiotics are necessary and beneficial, particularly since we're seeing increasing resistance of bacteria to these drugs. So how do we decide? And if it's not a bacterial infection, what else could it be?

Your horse's recent history is incredibly relevant to the diagnosis. Be prepared to answer a barrage of questions about new hay or bedding, turnout changes, any new horses in the barn, recent travel, vaccination status, appetite, what triggers the cough, whether it's dry or wet, or if there is any discharge, among other inquiries.

Your vet might then perform a physical exam on the horse, watching him breathe in the stall, undisturbed, taking note of his overall condition and demeanor (e.g., is he alert or dull?). Then once the horse is settled after the trailer ride to the clinic, the vet might perform a more in-depth respiratory exam, listening with a stethoscope for audible evidence of changes (such as increased fluid and scar tissue) in the lungs and/or trachea. More severe changes will be audible at rest, whereas subtle changes will only be detectable after exercise. Longeing for 5-10 minutes is usually sufficient to get the horse breathing deeply enough to hear the entire lung field.

An alternative to longeing is the rebreathing exam, during which the veterinarian places a plastic bag over both nostrils, causing the horse to inhale expired carbon dioxide instead of oxygen. This will stimulate the horse to take a deep breath once the bag is removed from the nose. The vet will listen for crackles, wheezes, or muffled lung sounds and determine whether the horse has difficulty breathing in or out. Often in a respiratory infection the bottom of the lung field sounds abnormal, as gravity pulls mucus and other fluids downward. Inhaling is also typically more pronounced. On the other hand, with recurrent airway obstruction (RAO, or heaves) the caudal (towards the tail) lung fields are abnormal. A horse with RAO has a harder time exhaling than inhaling due to scarring of terminal bronchioles (the tiniest airways of the lungs) and oversecretion of mucus. The extra fluid within the lungs can obstruct the smaller airways when they narrow during exhalation. Thus, increased abdominal effort is required to push the air out.

Listening to the lungs might not provide enough information to determine if the pathology is infectious. Lab work (including a complete blood count and chemistry) or additional diagnostics might be required. The presence and degree of a fever can sometimes help determine if an infection is bacterial or viral. If the veterinarian suspects a bacterial infection, a transtracheal wash or bronchioalveolar lavage might be necessary to acquire a fluid sample from deep within the respiratory tract for culture and to determine the bacteria's sensitivity to antibiotics. Thoracic ultrasonography can help the vet identify pleural pneumonia (infection of the lung lining) as well as lung abscesses or masses.

If your veterinarian determines your horse has a bacterial infection, he or she might prescribe medications to be administered orally, intravenously, or intramuscularly. Viral infections are most often treated with supportive care and sufficient time off work. RAO is often treated with bronchodilators and corticosteroids, but rule out infection prior to treating a horse for RAO, as steroids can suppress the immune system and cause an infection to worsen.

While medication might be necessary, environmental changes and supportive care are often the cornerstone of respiratory condition treatment—whether viral or bacterial. Ensure your barn is well-ventilated and kept clean to reduce airborne allergens such as pollens, dust, and ammonia. Infectious or not, most respiratory diseases are preventable with good biosecurity measures, vaccination programs, and responsible farm management.

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