Recurrent Airway Obstruction
Condensed Version

Presentation:
- Recurrent allergen-induced neutrophilic inflammation of lower airway
  - Part of “Equine Asthma Syndrome” (also includes inflammatory airway syndrome or IAD); also called “heaves”
- Signalment: mature horses: > 7 years old, no sex predilection
  - Exposure to organic dust: molds (poorly cured hay), mites, endotoxins
- History: signs recur and wax and wane in response to season, specific feed/allergen exposure
- Clinical signs: afebrile, exercise intolerance, coughing during exercise, exaggerated end-expiratory effort (resting horse), mucopurulent discharge, heave line (hypertrophy of external oblique, rectus muscles)
  - ONLY definitive difference from IAD is tachypnea at rest w/RAO, NOT with IAD
- Northern USA, Europe: primarily stabled horses
- Southeasteren USA: more prevalent in horses on pasture, summer/fall

Test of choice:
- Thoracic auscultation (at rest and with rebreathing bag): expiratory wheezes, crackles, tracheal rattles
- Tracheobronchial aspirate/bronchoalveolar lavage (BAL, preferred): non-degenerate neutrophilic inflammation/mucus; cannot use to distinguish from IAD
- Arterial blood gas analyses: hypoxemia (decreased PaO₂), increased PaCO₂ (chronic cases)
- Bronchodilator test: Administer atropine or N-butylscopolammonium bromide, if RAO, marked improvement observed w/in 10 min
- Pulmonary function testing (treadmill with endoscopy): ↓airway compliance, ↑pulmonary resistance, ↑in transpulmonary pressure during respiration
- Endoscopy: Excessive mucopurulent tracheal exudate

Rx of choice & prevention: environmental changes most important for control of RAO
- Goal: minimize allergen exposure, control airway inflammation, relieve airflow obstruction
- Pasture-associated heaves: change to different pasture OR move indoors to well-ventilated stall
- Heaves associated w/ indoor environment: Complete turnout critical
- Corticosteroids: oral prednisolone OR parenteral dexamethasone (horses in respiratory distress)
  - Inhalant steroids: fluticasone, beclometasone (not for emergencies), nebulized dexamethasone
- Bronchodilators: relax airway smooth muscles; e.g. β-2 agonists (oral or inhaled), anticholinergics (e.g. atropine - only for emergency relief of airway obstruction)
- Other therapies: nasal oxygen, acupuncture, omega-3 fatty acid supplementation

What is the classic signalment for a horse with RAO?
What is the etiology of RAO? How is RAO diagnosed?
List 4 ways to treat and prevent recurrence of RAO.
What is primary difference between RAO and IAD?