Feline Asthma

A PowerPage Presented By

Feline asthma is a common condition characterized by airway inflammation and mucous accumulation resulting in labored breathing and wheezing. Because there are no clinical signs or laboratory tests that are specific for feline asthma, it is primarily a diagnosis of exclusion, made by ruling out other causes of dyspnea, wheezing and coughing in an otherwise healthy cat. This PowerPage focuses on the common signs and presentations of the feline asthma patient and the management options.

Key Points

- Clinical signs of **labored breathing, wheezing, cough**
- Often acute onset at first presentation but may be chronic
- Radiographic **bronchial pattern**
- Treated with oral and/or inhaled steroids and bronchodilators

Relevant Pathophysiology

- There are many potential underlying causes and triggers of asthma that result in inflammatory cell infiltration into bronchial mucosa and submucosa. This causes:
  - Damage, hypertrophy and/or metaplasia of airway epithelium
  - Increased mucous production by goblet cells
  - Hypertrophy and spasm of bronchial smooth muscle
- Airflow reduction occurs from:
  - Airway edema
  - Airway narrowing from cellular infiltrates
  - Airway smooth muscle constriction
- Dramatic clinical signs can be seen with relatively mild airway constriction because:
  - 50% reduction in diameter equals a 16-fold reduction in airflow
  - Stimulation of cough mechanoreceptors by inflammatory infiltrate
- Similarly, therapeutic interventions allowing even small increases in airway size can yield dramatic benefits

Clinical Signs and Diagnostic Tests

- 3 presentations:
  - Cats with intermittent signs (i.e. signs occur less than daily)
  - Cats with consistent signs
  - Acute emergency presentation
- Common signs:
  - Cough
  - Dyspnea
  - Exercise intolerance
  - Wheezing
- Diagnosis of exclusion – major rule-outs are:
  - Heart disease
  - Pneumonia

  - Pneumothorax or pleural effusion
  - Pulmonary neoplasia
  - Inhaled foreign body
  - Respiratory parasites
- Diagnostic tests of choice
  - CBC
  - Thoracic radiographs
    - Classically see a bronchial pattern
    - Characteristic **"train tracks" and "doughnuts"** which are thickened bronchial walls

Treatment

- Intermittent signs
  - Consider use of inhalant bronchodilator (albuterol) for use when symptoms occur
  - Assumption is that chronic inflammation requiring daily anti-inflammatory therapy is not present
- Consistent signs
  - Treatment is long term corticosteroids
    - The most consistent and effective treatment is high-dose oral corticosteroids
    - Often start at 1-2 mg/kg PO BID for 10-14 days and taper
    - Once a response is seen, begin use of inhaled steroids as you taper from oral
- Emergency presentation in acute respiratory distress:
  - Administer oxygen
  - Consider bronchodilator
  - Consider sedation

- Prognosis:
  - For most cats with asthma, the disease is not curable but can be managed through appropriate therapy

Use of Inhaled Medications in Cats

Corticosteroids and bronchodilators can be given by inhalation to cats with asthma through metered dose inhalers. A spacer (i.e. Aerokat®) is commonly used to perform these treatments as it is challenging to get cats to inhale deeply on command. Medications that can be administered by this route include:

- Fluticasone Propionate (Flovent®) – An inhaled steroid without known systemic side effects
- Albuterol (Proventil®) – A rapidly acting bronchodilator

While not sufficient for all cases of feline asthma, inhaled steroids and bronchodilators are the standard of care for treatment of human asthma; they are believed by most feline respiratory specialists to be safe, practical, and useful in avoiding complications associated with oral steroid use.