Rabbit Respiratory Disease

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Obligate nasal breathers
Small thorax
Tendency to mask symptoms of disease

Introduction

Approach to a rabbit with respiratory signs
Rabbit with upper respiratory tract (URT) disease
Rabbit with lower respiratory tract (LRT) disease
Viral respiratory infections
Thymoma

Lecture Outline

Clients should be instructed to:
- Bring the rabbit in a secure covered container
- Keep quiet and calm
- Bring in companion if necessary
- Bring in favourite food

Pre-consult

Initial presentation

Brief assessment of degree of dyspnoea
May need oxygen supplementation before full examination
Minimise handling for > 30 minutes unless necessary

History

Complete husbandry history
Diet
Changes in environment
Companion rabbits
Vaccination status
Standard medical history
Clinical exam

Once patient is stable a full exam should be performed

Determine if respiratory disease is affecting
- upper respiratory tract
- lower respiratory tract
- both

Rabbit with URT disease

- Nasal discharges
- Snuffling
- Sneezing
- Stertor
- Anorexia
- Marked dyspnoea

Look for associated ocular / dental / aural disease

Causes of “snuffles”

- Pasteurella multocida
- Other bacterial infections – Bordetella bronchiseptica, Staphylococcus aureus, Moraxella catarrhalis, Pseudomonas, Mycoplasma
- Respiratory irritants / allergic rhinitis
- Foreign bodies
- Neoplasia

Pasteurellosis

Pasteurella multocida
- Other bacterial infections – Bordetella bronchiseptica, Staphylococcus aureus, Moraxella catarrhalis, Pseudomonas, Mycoplasma
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- Foreign bodies
- Neoplasia
Pasteurellosis

- Due to virulence of *Pasteurella* strain?
- Host immune response?

Look for underlying causes such as inadequate ventilation, overcrowding or concurrent disease

May also be associated with systemic disease

Diagnostic approach for chronic “snuffles”

Sedation / GA is usually required for:
- Culture of deep nasal swab
- X-rays
- Rhinoscopy
- CT

Deep nasal swabs

- Moisten with sterile saline
- Insert ~2-3cm into ventral meatus
- Sedation usually required
- False negative results are common

X-rays

- Lateral skull
- Dorsoventral skull
- Left and right oblique skull
- Rostro-caudal skull
- Lateral thorax
- DV / VD thorax

Rhinoscopy

1.9mm rigid endoscope in rabbits >2kg

- Advance from nares caudally along ventral and middle nasal meati
- Assess sinus openings
- Biopsy for histopathology and culture
- Retrograde flexible endoscopy may be necessary for FB removal

CT
Surgery

- Surgery may be necessary to remove masses or large quantities of purulent material within the nasal cavities or sinuses.
- Knowledge of anatomy very important!

Treatment of bacterial “snuffles”

- Antibiotics for 2 weeks – 3 months
- Nebulisation
- Mucolytics
- NSAIDs
- Supportive care
- Treatment of associated disease

Which antibiotic?

- Ideally base choice on culture and sensitivity
- Beware first-line use of fluoroquinolones may predispose to bacterial resistance

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Which antibiotic?

- Consider use of alternatives such as trimethoprim sulphonamides first
- E.g. Co-trimoxazole 30mg/kg po BID
- For persistent infections, fluoroquinolones or parenteral penicillin may be necessary

Nebulisation

- Nebuliser should produce particles <0.5µm
- Results in high concentration of drugs locally in respiratory tract with minimal systemic effects
- Consider human health and safety too

Drugs to nebulise

- Antibiotics
- Mucolytics
- F10 disinfectant (1:250 dilution)
- Saline
Treat associated dacryocystitis

Check tear duct patency

Items for tear duct flush

Treatment of “allergic” rhinitis

- Remove any obvious source of respiratory irritants
- Improve hygiene
- Improve ventilation
- Antihistamines?
- Saline nebulisation

Rabbit with LRT disease

- Dyspnoea
- Wheezing
- Coughing?
- Lethargy
- Anorexia
- Weight loss
- Difficult to judge exercise tolerance
- Often no signs until disease is advanced

Causes of LRT disease

- Pasteurella multocida
- Other bacterial infections as for URT + *E. coli*, *Chlamydia*, *Mycoplasma*, *Pneumocystis*, *CAR bacillus*
- Aspiration pneumonia
- Respiratory irritants / allergic bronchitis
- Neoplasia

Rule out other non-respiratory causes of dyspnoea

- Pain
- Heat stress
- Cardiovascular disease
- Diaphragmatic hernia
- Gastric dilation may cause increased pressure on the thoracic cavity also resulting in dyspnoea
**Diagnostic approach for LRT disease**

Sedation / GA is usually required for:
- X-rays
- Bronchoalveolar lavage (BAL) / tracheal wash
- Tracheoscopy in larger patients
- CT

**X-rays**

- Lateral thorax
- DV/VD thorax
- Ensure forelimbs pulled forward
- Ventilation may be necessary to ensure inspiratory view

**BAL / Tracheal wash**

- Perform via sterile endotracheal tube
- Instil 1-2ml of sterile saline down catheter and then aspirate
- Useful for cytology and culture
- But false negative results are still common
- Or culture discharges from end of ETT?

**Approach to more critical patients**

- Minimise handling
- Place in quiet dark enclosure
- Supplement with oxygen if marked dyspnoea
- Masks usually not tolerated so create oxygen tent
- Midazolam?

**Treatment of pneumonia**

- Antibiotics for 2 weeks – 3 months
- Nebulisation
- Mucolytics
- Bronchodilators
- NSAIDs
- Supportive care
- Treatment of associated disease
- Minimise handling
- Minimise oral treatments

**Viral respiratory infections**
**Myxomatosis**
- Due to a pox virus
- Spread by biting insects such as fleas and mosquitoes
- Signs include swelling around the eyes and genitals but upper respiratory signs may also be seen
- Diagnosis is usually based on clinical signs
- Usually fatal if unvaccinated and euthanasia should be considered at an early stage

**Rabbit VHD**
- Rabbit viral haemorrhagic disease (VHD/RHD)
- Due to a calcivirus (closely related to European Brown Hare Syndrome)
- Rabbits < 2 months of age appear resistant to disease but may become long term carriers
- Occasionally dyspnoea and haemorrhagic discharges from the nares and anus may be observed but older animals are normally found dead
- Treatment is unsuccessful so euthanasia is advised

**Prevention**
- Annual vaccination is advised for all rabbits even if kept indoors
- Flea prevention should also be considered especially in summer
- Vaccinated animals may still show signs of disease in an outbreak but these are usually mild

**Thymoma**
- Thymus persists in adult rabbits
- Both benign and malignant neoplasia may occur
- Signs include:
  - Dyspnoea (acute or chronic)
  - Exercise intolerance?
  - Bilateral exophthalmos
  - Lethargy
- Diagnosis of thymoma
  - Cytology / histopathology is necessary to definitively diagnose thymoma
Treatment of thymoma

- Surgical excision is currently the treatment of choice
- Median sternotomy / left lateral thoracotomy
- Intensive post-operative care including a thoracotomy tube and excellent analgesia are required
- Radiotherapy has been suggested if neoplasia appears invasive or following surgery but the proximity of the thymus to the heart and lungs will limit the radiation dose which can be given

Tracheal strictures

- Rabbits often do not show respiratory signs until disease is advanced
- Do not underestimate severity of disease – long courses of treatment may be required
- Always look for an underlying cause

THE END!