fore to address not just the most obvious cause of an infection, but also any predisposing factors to prevent the problem recurring again in the future.

Clinical signs of upper respiratory tract disease, such as nasal discharges, sneezing or snuffling, are often recognised by owners at an early stage. Unfortunately signs of lower respiratory tract disease can be more subtle and animals are often not presented until problems are fairly advanced. Imaging (usually radiographs but sometimes endoscopy or computed tomography) may be required to establish the location and severity of the infection and also to identify any concurrent disease. Ocular, dental and aurial disease are all commonly associated with upper respiratory tract disease in small mammals. Non-respiratory causes of dyspnoea, such as cardiac disease, pain or gastric dilation, should also be ruled out. Depending on the part of the respiratory tract affected, samples may be taken for cytology, histology or culture and sensitivity to determine the most likely pathogen and most effective treatment.

Most respiratory infections can be resolved medically with an appropriate course of antibiotic treatment. Antibiotics may be administered both systemically and via nebulisation. Nebulisation has the added benefit of rehydrating the natural mucociliary escalator and enables the animal’s natural defences to remove bacteria from the lungs. Supportive care is also vital, especially for the more debilitated inappetent patient. This may include anti-inflammatories, mucolytics and supplementary feeding. Disease recurrence is, however, common if predisposing factors are not corrected. The environment, diet, the animal’s general health status and the presence of any in-contact animals should all be considered when aiming to resolve respiratory problems.

KEY LEARNING OBJECTIVES

■ Understand the predisposing factors involved with respiratory disease in small mammals
■ Understand the common differentials and treatment for upper respiratory tract (URT) disease in small mammals
■ Understand the common differentials and treatment for lower respiratory tract (LRT) disease in small mammals

MULTIPLE CHOICE QUESTIONS

1. Which of the following animals are most commonly affected by *Mycoplasma pulmonis*?
   a. Rats
   b. Rabbits
   c. Guinea pigs
   d. Hamsters

2. Which pathogen can be part of the normal respiratory flora of a rabbit but cause serious respiratory disease in a guinea pig?
   a. *Mycoplasma pulmonis*
   b. *Bordetella bronchiseptica*
   c. *Pasteurella multocida*
   d. *Moraxella catarrhalis*

3. Which of the following antibiotics would be suitable to treat a rat with respiratory disease?
   a. Doxycycline
   b. Amoxicillin–clavulanate
   c. Cefalexin
   d. Ampicillin

4. Which of the following statements about the management of the *Pasteurella*-positive rabbit is true?
   a. This animal should be isolated for life
   b. Treatment is likely to completely resolve infection
   c. Treatment can resolve clinical signs but disease may recur at times of stress
   d. This animal is a high zoonotic risk

5. Which of the following statements is true? If a rabbit has a respiratory rate of 150 per minute on initial clinical examination…
   a. This may be due to the stress of a visit to the veterinary practice
   b. This always indicates underlying respiratory disease
   c. This is always abnormal whether due to a primary respiratory, cardiac or other cause
   d. This is a normal rate for a rabbit at rest

Recognising signs of stress in exotics

Abigail Edis

Exotic species are becoming ever more popular among the general pet-owning public. Unfortunately there is still a lack of understanding of many of these patients in general practice, but as more and more of these animals are taken up as pets the more we need to understand their basic husbandry. Understanding natural behaviours of these animals goes with this, as if we cannot recognise pain or stress we may well compromise patient welfare without even realising.

As nurses, most of us can relate to that fractious cat or growling dog which we have had to treat in hospital or in a consultation. These are natural behaviours for these animals in times of stress and anxiety, which is understandable when faced with a visit to the vets. We often learn a lot about body language and behaviour of cats and dogs but not so much about our exotic species. Can we recognise the same stress responses in rabbits and small furries, and what about in birds or reptiles? The behaviour of different exotic species is not routinely taught during your nurse training unless you are working within an exotics practice.

Aggression can sometimes be disregarded as a species trait, and is quite often used when stereotyping breeds of dog with this behaviour, so it is no surprise that an African Grey Parrot, for example, is labelled as aggressive, whereas a budgie is considered less so. Perhaps we should be looking at it more as potential signs of stress in these animals. By understanding our different species’ background, natural habits and whether they are prey or predator, we may be able to interpret their behaviours better. As nurses we should
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be ensuring our patients’ stress levels are kept as low as possible, and by learning how to recognise stress we can become better at doing this.

This lecture aims to cover the behaviours and responses you may see from some of the more exotic species, which are natural behaviours for them and what behaviours they display in times of stress. We will cover ways we can minimise stress, through appropriate handling and restraint, and acceptable ways to hospitalise these patients.

**KEY LEARNING OBJECTIVES**

- Recognise prey behaviour and predator behaviour in times of stress
- Understand ways to reduce stress in these species
- Know how to nurse these patients appropriately to reduce stress

**MULTIPLE CHOICE QUESTIONS**

1. What is an easy way you can help reduce the stress for all exotic species (mammals, birds, reptiles) during their hospital stay?
   a. Provide a hide or covered area of the enclosure
   b. House them in an isolated ward away from any interaction
   c. Provide them with the appropriate diet for their species

2. What signs do tortoises often show in times of stress?
   a. Freezing
   b. Hissing, retracting head into the shell, urinating and defecating
   c. Biting or attacking the handler
   d. None

3. Which of the following is the most effective way to catch a stressed large parrot for treatments?
   a. Using a towel to catch and restrain
   b. Placing your hand inside the cage and waiting for the parrot to step on to it
   c. Catching the parrot in a net
   d. Using your hands to catch and restrain

4. How can we reduce stress in social species (i.e. rabbits, guinea pigs, parrots, chinchillas)?
   a. Ensuring the ward is always busy with staff
   b. Housing them in a ward with others of the same species nearby
   c. Playing the radio in the ward
   d. Housing them with their companion(s) from home

5. What potential problems might you face if a gecko is handled too roughly?
   a. Potential dyspnoea
   b. Shedding of the tail
   c. Being bitten
   d. Shedding of the skin

Eye conditions in rabbits

Joanna Hedley

Rabbits have large laterally placed globes which provide a wide visual field useful for a prey animal. Unfortunately this anatomical arrangement means that the globe protrudes significantly past the orbital rim, increasing the likelihood of ocular injury. The rabbit orbit itself contains a large amount of glandular tissue and a large retrobulbar venous plexus, which is significant when performing ocular surgery such as enucleation.

Ocular problems are commonly seen in pet rabbits and may be either primary or secondary to other disease. Concurrent dental or respiratory disease is particularly common, so it is important that a complete history and clinical examination are performed in addition to a more in-depth ophthalmic examination. The ophthalmic examination normally starts from a distance. Assessing vision can be challenging as rabbits will naturally freeze in a strange environment and the menace response is unreliable. Globe size, position and symmetry can, however, be best assessed from a distance. Unilateral exophthalmos can be seen due to retrobulbar infection or neoplasia and is often linked with dental disease. Bilateral exophthalmos is less common but is often a sign of a mediastinal mass which causes enlargement of the retrobulbar venous sinuses due to restricted venous return.

On closer examination, the surface of the eye and the eyelids should be carefully examined. The lacrimal puncta should also be carefully checked as dacryocystitis is one of the most common ocular problems seen in pet rabbits and is often associated with underlying dental disease. Conjunctivitis may also be seen, usually secondary to dacryocystitis or respiratory disease but occasionally due to an environmental irritant. Corneal ulcers are not uncommon, usually following trauma but sometimes a result of corneal exposure during general anaesthesia. Within the eye, uveitis and cataracts can be seen as in other species. There are various causes but infection with *Encephalitozoon cuniculi* appears to be the most common. Glaucoma may also be seen due to either a primary outflow obstruction or secondary to other intraocular disease. Treatment of ocular problems follows the same principles as for other species but bear in mind that concurrent disease is common and this will need to be treated too. Enucleation is well tolerated if necessary and even bilaterally blind rabbits can have a good quality of life if cared for appropriately.

**KEY LEARNING OBJECTIVES**

- Review the unique anatomical features of the rabbit eye
- Recognise the common eye conditions seen in rabbits
- Discuss the treatment options available

**MULTIPLE CHOICE QUESTIONS**

1. Which infection is most likely to cause cataracts in a young rabbit?
   a. *Encephalitozoon cuniculi*
   b. *Brachyspira aalborgi*
   c. *Toxoplasma gondii*
   d. None