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RABBIT EAR, NOSE AND MOUTH ENDOSCOPY

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INTRODUCTION

Endoscopy has proven to be a useful diagnostic tool in veterinary medicine. In the field of zoological medicine, the application of diagnostic endoscopy has shown great promise in a variety of species but has probably been most utilized by avian veterinarians. The use of diagnostic endoscopy in small mammals has only been realised more recently and in most cases has concentrated on the examination of the oral cavity. Rigid endoscopy of the ears, nose and mouth of small mammals can be aptly demonstrated using the rabbit (Oryctolagus cuniculus) as a model.

EQUIPMENT

For the endoscopic examination of rabbits and rodents, the author uses a 1 mm semi-rigid endoscope, 1.9 mm Hopkins telescope or a 2.7 mm Hopkins telescope depending upon the size of the animal. Protection or operating sheaths for the Hopkins telescopes are always advisable if space restrictions permit. Various instruments are also available and include biopsy forceps, retrieval forceps, aspiration/injection needle, single-action scissors, polypectomy snare, and radiosurgery needle. Endovideo cameras are highly recommended as they improve ergonomics and technical skills.

PATIENT PREPARATION

Despite the non-invasive nature of otoscopy, very few rabbits will tolerate the placement of a telescope deep inside the ear canal. Therefore patients are almost invariably anesthetized during endoscopy procedures that involve the ear, nose or mouth. For short procedures, particularly otoscopy, anesthesia can be maintained using a face mask. For longer procedures or procedures involving the nose and/or mouth, tracheal intubation is preferred. When maximal access to the mouth is required, nasal intubation is a practical alternative.

OTOSCOPY (EAR ENDOSCOPY)

Examination of the aural sulcus, external auditory canal, tympanic membrane are usually straightforward. Flushing and cleaning will often greatly facilitate examination, but only sterile water can be used if microbiological samples are to be collected.

Figure 1. Endoscopic evaluation of the rabbit ear; a) external ear canal below the blind ending auditory sulcus; b) normal tympanic membrane; c) ruptured tympanic membrane and otitis media.

STOMATOSCOPY (ORAL ENDOSCOPY)

With the naso-intubated, anaesthetised rabbit supported in sternal recumbency, the head and neck are extended and the jaws are held open using a small mammal gag. Pouch dilators are also recommended to hold the lips and buccal mucosa laterally, thereby greatly increasing the endoscopist’s view of the oral cavity. The scope can then be inserted into the oral cavity to examine the tongue, lingual and buccal surfaces, incisor, premolar, and molar teeth. Rotating the 30° oblique telescope 180° maximizes the view of both lower and upper arcades. Any dental anomalies and ulcers can be easily visualised. As the telescope passes over the caudal aspect of the tongue so the pharyngeal tonsils become visible and any swelling or infections can be noted. The oropharynx and larynx can be approached, however, the rabbit glottis is not usually visible as (being a nasal breather) the epiglottis is engaged over the soft palate. Gently lifting the caudal edge of the soft palate with the telescope will cause the epiglottis to fall ventrally revealing the glottis and the obvious cuniform processes. Entry through the glottis permits the examination of the trachea, which in rabbits looks hyperaemic but this red colouration is due to the vascular nature of tracheal smooth muscle. The pale dorsal tracheal ligament is obvious.

Figure 2. Stomatoscopy of the rabbit; a) overview of the rabbit buccal cavity; b) overgrown upper premolars 1 and 2; c) buccal spurs originating from several premolar and molar teeth.

Figure 3. Stomatoscopy of the rabbit; a) enlarged tonsils (arrows) associated with chronic dental disease and infection; b) normal view of the oropharynx of the nose-breathing rabbit – note that the epiglottis (e) is buttoned over the soft palate (s); c) view following dorsal displacement of the soft palate (s) allowing the epiglottis (e) to fall ventrad thereby exposing the glottis (arrow).

RHINOSCOPY (NOSE ENDOSCOPY)

Examination of the nasal passages and turbinates is possible for most rabbits after first flushing the nares with sterile saline to remove mucus and debris. Examination of the nasal turbinates can be extremely useful for the characterisation of rhinitis and the collection of tissue biopsies and microbiological samples. Many different bacterial and fungal organisms cultured from nasal swabs or, worse still, nasal discharges may simply represent

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SUMMARY

Rabbits and rodents are small animals that do not appreciate extensive surgical invasion. The use of endoscopy provides the exotic animal clinician with the means of examining internal structures with minimal invasion and trauma.

REFERENCES