

Common Ophthalmic Problems in Pet Rabbits

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Abstract

As rabbits are becoming more popular as pets and owners are willing to pay for specialized care, veterinary practitioners are required to maintain their expertise treating these animals. In recent years, ophthalmic patients have become an important part of the small mammal pet population. Ocular disorders in pet rabbits can be caused by genetic defects, congenital malformations, traumatic events, infections, housing conditions, and nutritional deficiencies. Knowledge of the species-specific anatomy and physiology forms the basis for the interpretation of findings and prevents misinterpretation of a normal state as an abnormality. The ophthalmic examination of rabbits should adhere to the same principles and techniques used for canine and feline patients, although adjustments are required because of different anatomical and physiologic features. Magnification is necessary for accurate assessment. This article summarizes the common ophthalmic disorders of pet rabbits, especially those that are unique to rabbits. Copyright 2007 Elsevier Inc. All rights reserved.

Key words: exophthalmos; eye diseases; ophthalmology; rabbit; uveitis

Rabbits are becoming more popular as pets and are being presented to veterinarians in apparently increasing numbers. Rabbits are also commonly used for laboratory research in ophthalmology, yet limited information on ophthalmic conditions for the pet rabbit is available to the veterinary practitioner. This article provides an overview of pet rabbit ophthalmology and describes common conditions, diagnostic techniques, and treatment options.

Ophthalmic Examination

Ophthalmic examination in pet rabbits should be performed in a logical protocol and follow the same principles used in other companion animals. For examination, the rabbit should be placed on a table facing the examiner and held with minimal restraint by an assistant. The rabbit can be repositioned during the examination so its body is parallel with the

front of the examination table. This allows access to each eye.

The examination starts with simple tests of vision, such as the menace response, the ability to follow a moving object, the pupillary light reflex, and the dazzle response. Next, the periocular organs (e.g., periorbital skin, upper and lower eyelid, third eyelid) and the visible external eye structures (e.g.,

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conjunctiva, sclera, cornea) are examined, with the examiner paying special attention to the nostrils and medial canthus because dacryocystitis causes purulent discharge from these areas. Matted fur may be observed on the face overlying the maxillary cheek teeth, and a pain response might be invoked if pressure is applied to the skin because underlying dental disease can cause sharp edges of maxillary cheek teeth that injure the buccal surface. The eyelids are checked for altered position and structure (e.g., entropion, ectropion, lacerations, thickening). Next, the position, size, and shape of the left and right globes are compared. Unilateral exophthalmos due to retrobulbar abscessation is common in pet rabbits. Although keratoconjunctivitis sicca has not been described, tear secretion should be measured in patients with a dull cornea or other clinical signs associated with a dry eye. The test should be performed before instillation of local anesthetic drops. Reference values of 0 to 11.22 mm/min with a mean of 5.30 ± 2.96 mm/min for the Schirmer tear test have been reported in New Zealand White rabbits,¹ although, in clinical practice, low values may be obtained in healthy rabbits, so a diagnosis of reduced tear secretion by the Schirmer tear test is difficult. An alternative is the phenol red thread tear test, which requires less tear volume and a shorter testing time.² After assessment of tear production, topical local anesthetic drops (proparacaine or bupivacaine) may be applied to the cornea and conjunctiva to facilitate manipulation of the adnexa. The medial part of the lower eyelid can be retracted with forceps to inspect the inferior nasolacrimal punctum opening. The next step of the ophthalmic examination is to measure intraocular pressure if an applanation tonometer is available. A



Figure 1. Typical merangioid retinal vascular pattern of rabbits. A medullated nerve fiber layer extends horizontally, both laterally and medially, from the optic nerve head with retinal vessels lying on top of medullated wings.

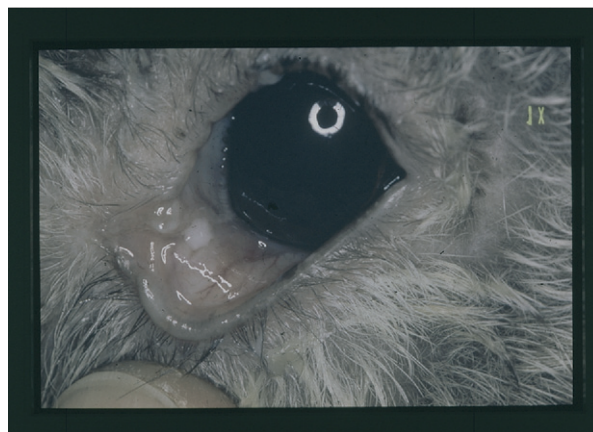


Figure 2. Purulent material present in the punctum lacrimale, located in the ventromedial part of the lower conjunctival sac in a pet rabbit.

measurement range of 15 to 23 mm Hg has been suggested for intraocular pressure in pet rabbits.³ This test should be performed before inducing mydriasis because of the risk of an artificial increase in intraocular pressure. Detailed examination of the cornea, anterior chamber, lens, and vitreous with the help of a biomicroscope (slit lamp) is the next part of ophthalmic examination. Topical application of tropicamide or a combination of atropine and phenylephedrine is necessary to dilate the pupil to examine the lens and posterior eye segment. Fundic examination in the rabbit is performed with an indirect ophthalmoscope and 30-D or 40-D ophthalmic lenses. To examine the myelinated nerve fibers, associated retinal vessels, and the optic disc (Fig 1), the rabbit either has to be elevated or the examiner has to look upward into the eye from a low position.

Ophthalmic Disorders

Dacryocystitis

A common ophthalmic problem of pet rabbits is dacryocystitis, which can be a frustrating condition to treat. Dacryocystitis is characterized by seromucous to mucopurulent discharge, which is observed in the medial canthus of the eye. Purulent material can be expressed by manual pressure on the skin just ventral to the punctum lacrimale (Fig 2). In severe cases, palpable distension of the lacrimal sac is evident and secondary conjunctivitis is often present. The close contact between the cornea and mucopurulent material in the lower conjunctival sac can lead to corneal edema and significant keratitis or even corneal ulceration (Fig 3). Every rabbit with corneal

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