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AK Patel

MVSc. Scholar, College of
Veterinary Science & Animal
Husbandry, Kamdhenu
University (KU), Rajpur (Nava),
Himmatnagar, Gujarat, India

CM Bhadesiya

Assistant Professor,
Department of Veterinary
Medicine, College of Veterinary
Science & Animal Husbandry,
Kamdhenu University (KU),
Rajpur (Nava), Himmatnagar,
Gujarat, India

HD Asari

MVSc. Scholar, College of
Veterinary Science & Animal
Husbandry, Kamdhenu
University (KU), Rajpur (Nava),
Himmatnagar, Gujarat, India

RP Patel

MVSc. Scholar, College of
Veterinary Science & Animal
Husbandry, Kamdhenu
University (KU), Rajpur (Nava),
Himmatnagar, Gujarat, India

TP Patel

Assistant Professor,
Department of Veterinary
Surgery & Radiology, College of
Veterinary Science & Animal
Husbandry, Kamdhenu
University (KU), Rajpur (Nava),
Himmatnagar, Gujarat, India

Corresponding Author:

CM Bhadesiya

Assistant Professor,
Department of Veterinary
Medicine, College of Veterinary
Science & Animal Husbandry,
Kamdhenu University (KU),
Rajpur (Nava), Himmatnagar,
Gujarat, India

Chronic dacryocystitis in a Rabbit: A case study

AK Patel, CM Bhadesiya, HD Asari, RP Patel and TP Patel

Abstract

Rabbits are one of the most commonly preferred small lagomorph pets throughout the world. People keep different-colored and different-sized rabbits as in-house companions or pets; however, certain lacunas in basic husbandry practices and lack of awareness on timely veterinary care often invites unnecessary healthcare complications. An adult non-descript rabbit was presented to Veterinary Hospital of Postgraduate Institute of Veterinary Education and Research (PGIVER), Kamdhenu University, Rajpur (Nava), Himmatnagar, Gujarat, India with a history of whitish discharge from a left eye, swelling, reddening, reduced feed intake, lethargy since 1 week, debility, weakness and no response to previous attempts of treatment. Detailed physical examination and roentgenography were performed and the case was diagnosed as chronic dacryocystitis. Removal of pus from site by placing small incision and flushing of nasolacrimal duct by cannulation of nasolacrimal punctum was decided for clinical management based on the severity of the case. Cephalixin powder and meloxicam were given orally for 7 consecutive days. Various aspects of diagnostic, therapeutic and clinical outcome are described in the present paper.

Keywords: Rabbit, ophthalmic affection, dacryocystitis, treatment

Introduction

At present, the world is observing a sharp rise in pet trade and pet industry. Mammals, birds, reptiles and even insects are being kept as pets in urban as well as rural households in different countries. Out of all pet animals, rabbits have established their status as one of the most common and favorite furry lagomorph pet animal as they are available in various colors and sizes. Rabbits have gained popularity as pets over the years and their healthcare greatly depends on their owners. Proper rabbit keeping practices differ greatly among owners of different areas which may result in deleterious effects on health of rabbits if not managed appropriately. The present era is also witnessing an increasing trend in numbers of veterinary clinics for pets strengthened with advanced diagnostic modalities and treatment options. Rabbits are not frequent patients at all veterinary clinics; however, they need to receive equal amount of importance like other pets such as dogs, cats and birds. Owners are also interested to get specialized care and they also study about rearing practices and steps to manage minor issues by use of social media or other resources. It is also perceived that owners are willing to pay for specialized veterinary care for rabbits^[1].

Rabbits can suffer from infectious and non-infectious disease conditions. Some of the conditions arise due to distinctive anatomical features. The ophthalmic system has peculiar anatomical structures which are different from pets like dogs and cats^[2]. Rabbits can suffer from various ophthalmic conditions such as conjunctivitis, cataract, hyphema, hypopyon, corneal ulcer, keratoconjunctivitis sicca etc. among which, dacryocystitis is very common pathology. It is often described as inflamed lacrimal sac and other regions of nasolacrimal duct mostly caused by bacterial pathogens (either directly or due to septic dental issues). It is also described as 'Swollen Tear Duct' in rabbits. This condition is often accompanied by clinical signs such as blepharitis, epiphora, pain, swelling, conjunctivitis, serous and purulent discharge, pain, nasal dysrargia, dermatitis around eye followed by alopecia and keratitis etc.^[3, 4, 5]. The present paper highlights the major observations in a case of chronic dacryocystitis in a rabbit.

Case Details

An adult non-descript rabbit was presented to Veterinary Hospital of Postgraduate Institute of Veterinary Education and Research (PGIVER), Kamdhenu University, Rajpur (Nava), Himmatnagar, Gujarat, India with a history of swelling below the left eye with discharge, reduced feed intake, lethargy since 1 week, weakness and no response to previous attempts of treatment.

Physical examination revealed soft swelling below left eye slightly extending towards nose (Picture-1), presence of whitish purulent discharge near opening of lacrimal duct towards eye (canthus) (Picture-2), pain on palpation at lower side of left eye, weight loss, anorexia, reduced reflexes, soiling of hair around eye due to discharge, conjunctivitis and epiphora. The right eye was found to be normal and had all responses to stimuli. Vision and reflexes were unaffected in both eyes. The rabbit was subjected to radiography which revealed presence of swelling without involvement of bones and other surrounding structures (Picture-3). Osteomyelitic changes were not observed around the growth. The condition was diagnosed as chronic dacryocystitis based on history, clinical signs and radiographic observations.

Treatment

The rabbit with chronic dacryocystitis was brought to hospital at a late stage; hence, a combined approach by performing cannulation of nasolacrimal punctum (Picture-4) and placing small incision near ventral side of the swelling (Picture-5) was implemented for management. The nasolacrimal punctum was flushed with sterile normal saline (5 ml) mixed with a drop of 10% enrofloxacin. Pus was removed from the site of incision by applying gentle pressure. The procedure was performed for two days while cephalexin powder (as antibiotic) and meloxicam (as non-steroidal anti-inflammatory drug) was given orally for 7 days along with supportive tonics. Daily antiseptic dressing at site of incision using povidone iodine was recommended. The swelling was greatly reduced in size from day-2 (Picture-6). The owner was advised to continue management at home for next few days and bring the case for check-up after 7 days; however, owner couldn't materialize the same resulting in no further observational records.



Picture 1: Swelling below left eye



Picture 2: Presence of whitish discharge on left side



Picture 3: Radiograph showing swelling near left eye without bone involvement



Picture 4: Cannulation of nasolacrimal punctum



Picture 5: Small incision placed at lower aspect of swelling near left eye



Picture 6: Post-treatment reduction in swelling (Day-2)

Discussion

The pet industry is growing on daily basis and involves small animals (e.g., dog, cat), birds (e.g., budgerigar, cockatiel, macaw, diamond pigeon, pigeon), reptiles (e.g., red eared slider, ball python), insects (e.g., non-harmful species of large spiders) etc. being traded within or between different countries. Animals such as rabbits, guinea pigs and hamsters are traded as pets throughout the world and are also used as laboratory animals to conduct various laboratory research (e.g., testing drugs in pre-clinical setup). Out of all such animals, rabbits have gained popularity as pet animals from a long period of time. They can suffer from various infectious or non-infectious systemic ailments.

Among different bodily systems, the ophthalmic disorders are commonly encountered in rabbits where dacryocystitis arising due to anatomical peculiarities in rabbit's eye is one of the most commonly observed condition. Rabbit has a single nasolacrimal punctum situated at anteromedial aspect of inferior eyelid and a duct with convoluted passage through bones passing in proximity to molars and incisors^[2]. Hence, the duct is prone to obstruction due to its anatomical position, infection caused by ongoing septic dental issues, ascending infection rising from ongoing rhinitis etc.^[6] The conditions affecting nasolacrimal duct are believed to be more common in brachycephalic rabbits such as Lionhead/Lionhead crossbred and Dwarf Lop/Dwarf Lop crossbred rabbits^[7].

Dacryocystitis can be acute or chronic depending on onset/duration. Chronic dacryocystitis is more commonly reported as compared to acute dacryocystitis. Acute dacryocystitis can occur due to conjunctivitis causing temporary obstruction

of the lacrimal sac, impaired drainage and secondary bacterial infection^[8] while chronic dacryocystitis occurs secondary to dental disease with elongation of tooth apices and periductal osteomyelitis^[9]. Dental diseases are described as the most common cause of dacryocystitis in rabbits. Clinically, presence of whitish discharge/caseous material from nasolacrimal punctum upon applying pressure beneath medial canthus or while flushing the nasolacrimal duct indicates dacryocystitis^[10]. The condition is often accompanied by symptoms such as watery eyes, conjunctivitis, recurrent ocular infections, whitish discharge, white discoloration of cornea in late stage, reduced activity, respiratory distress in prolonged cases, swelling on affected site with pain on palpation, weight loss, emaciation etc. The prevalence is believed to be higher in females as compared to males^[11].

Diagnosis of this condition is generally based on history, clinical examination, microbiological examination using swabs, oral examination, Jones test, radiography, computed tomography (CT) scan or dacryocystorhinography depending on (e.g., dental diseases)^[12-14]. Among infectious bacterial pathogens, *Staphylococcus aureus*, *Pasteurella* spp., *Corynebacterium* spp., *Staphylococcus epidermidis*, *Streptococcus oralis*, *Pseudomonas aeruginosa*, *Escherichia coli*, *Moraxella catarrhalis* etc. are reported to be common etiological agents responsible for infective conjunctivitis and dacryocystitis in rabbits^[7, 11].

Among treatment options, one of the most commonly reported approach for this condition include flushing of nasolacrimal duct and use of supportive care especially in critical cases^[10]. It is simply referred as 'Tear duct flush'. This procedure is rapid, minimally invasive, require least instrumental facilities, is straightforward and can be used for diagnostic as well as therapeutic purposes. In some chronic cases, hard covering around the pus beneath the skin might

require placing a small incision to remove excessive amount of pus as performed in case of abscesses. It is also recommended to use commonly available safe antibiotics (e.g., tobramycin, gentamicin, enrofloxacin, cephalexin etc.), anti-inflammatory drugs, oral supplementation of multivitamins, antistressors, antiseptics for topical dressing etc. depending upon requirement of the cases.

Thus, it can be undoubtedly said that dacryocystitis is a common ophthalmic affection of rabbits and can be managed satisfactorily if diagnosed at early stage. Regular visit to veterinary clinics for general examination, special examination of oral cavity, guidance on proper diet etc. are vital to avoid this condition and get desired clinical outcome after treatment.

Conclusion

A case of chronic dacryocystitis in a non-descript rabbit has been documented along with important aspects on predisposing factors, etiology, diagnostic approach, treatment and prognosis of the case. Attempts should be made to record and document acute or chronic cases of dacryocystitis in rabbits to plan strategies for its prevention and to explore possible treatment approaches.

Conflict of Interest

Authors declare no conflicts of interest with special regards to funding.

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