



## Rare Unilateral Nictitating Membrane and T Shape Cartilage Prolapse in Two-Years-Old Mix-Breed Cat

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DOI: 10.31080/ASVS.2022.04.0440

Received: August 05, 2022

Published: June 20, 2022

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### Abstract

Prolapse of the third eyelid is one of the most common ocular diseases in small animals, that is common in dogs and rare in cats and occurs in various breeds. A mixed female Persian Himalayan cat referred with the sign of prolapse of the left third eyelid with T shape cartilage protrusion. Prolapsed gland corrected by Pocket technique. Also, slight excision of the protruding part of the Deformed cartilage was accomplished. The surgical results were very satisfactory in forthcoming inspections.

**Keywords:** Cat, Prolapse, Third Eyelid, T Shape Cartilage

**Abbreviations:** DSH: Domestic Short Hair; SCC: Squamous Cell Carcinoma

### Introduction

One of the most common ocular diseases is the protrusion of the third eyelid called the Cherry eye. The exact reason is unknown nowadays, although genetic backgrounds are not negligible. Soft connective tissue is attached to the third eyelid gland. The third eyelid is a triangular folding of the conjunctiva that is located inside the eyeball and is supported by T-shaped hyaline cartilage. This gland secretes about 30 - 50% of tear production, exclusively [1,2]. Third eyelid prolapse is rare in cats than dogs and is not common merely, so often T shape cartilage protrudes with the third eyelid. This disorder is more common in Burmese cats than other species which may be a racial tenderness and due to the eyeball size versus skull. Besides in susceptible breeds such as Persian cats and Domestic short hairs (DSH) mild inflammation of the gland itself could cause nictitating protrusion and even T shape cartilage protrusion [3-5]. The disease is more common in small dog breeds English bulldog, Pekingese, Basset Hound, Beagle, Bos-

ton Terrier, Shih Tzu, Cocker Spaniel, and Lhasa Apso breeds are most susceptible breeds. Cherry eye generally occurs unilaterally and young animals. Other susceptible large dogs such as the Great Danes, German Shepherds, Weimaraner, Newfoundland's, and Irish Setters [6-10]. Here, we report a case of third eyelid prolapse with protrusion of the T shape cartilage and apply the pocket technique to improve the gland and adjacent cartilage.

### Case Report

A two-year-old female Himalayan Persian Mixed Cat was presented with unilateral protruded third eyelid gland, pinkie eye, and epiphora. In the primary examination, vaccination was performed routinely and, there were no ocular diseases and eye discharge before. An accurate checkup was performed after general anesthesia under 4 X magnifying loupe and showed the left third eyelid gland prolapse plus T shape cartilage (Figure 1). General anesthesia and surgical site preparation operate as fundamentals of veterinary ophthalmology [11]. The third eyelid was anchored by two Babcock non-traumatic forceps and extended anteriorly, then at the ocular

surface, the conjunctiva was precisely separated from the cartilage beneath it by a blunt cut. The extruded cartilage was cut by a scalpel blade at the point of attachment of the vertical section to the horizontal T-shaped section, but no sutures were performed, then the third eyelid gland was inserted by Morgan Pocket technique. To perform the Morgan Pocket technique, the first two slices were cut in parallel on both sides of the tuber, then two incised edges were sutured in the two inverting patterns with absorbable Vicryl plus 6-0 thread. Pressure with sterile swab applied to the tuber in the downward direction to insert the gland in place. The patient was recovered without any complication and an Elizabethan collar was used to prevent post-operation scratching. Cefazolin at a dose of 22 mg.kg-1 was administered intravenously before surgery, followed by mentioned antibiotic 30 mg.kg-1 every eight hours intravenously for three days and Ciprofloxacin 0.3% eye drops were administered each eight hours for four days and Diclofenac 0.5% eye drops every six hours were used for three days, respectively. After several postoperative re-examinations, no recurrence or complications were found, and the surgical perspective was advantageous.

## Results and Discussion

Nictitan problems occur in a wide range of animals and the main cause of this is unknown. Although the final therapy in large animals such as horses and cattle are the exenteration or eyelid excision cause of SCC (Squamous Cell Carcinoma) and its invasion, in small animals, the accuracy is less, and medical managements and several surgical procedures could be corrective [12]. In this case the unilateral nictitans membrane and T shape cartilage eversion in mix breed cat corrected with the Morgan pocket technique. The third eyelid prolapse is more common in dogs than cats, and frequently bilaterally more than unilateral [13]. It seems the third eyelid prolapse to be a congenital disorder and the affected animal must be eliminated from breeding and this condition is rare in cats in the face of dogs [14] and third eyelid cartilage eversion is reported in the Burmese breed [3,4]. However, the surgical correction method is dependent on surgeon preference, but the retrospective studies utilize the Pocket technique to reposition the third eyelid gland and cartilage [6]. In another survey by Rezaei et. Al., the Morgan pocket technique in German Shepherd performed and the outcome was excellent and no recurrence and complication described [1]. In many papers, the age of affecting patients demonstrate the age less than one year but there is a report about everted third eyelid cartilage in 8 years old British Blue cat that introduces the independent age relationship between the affecting nictitans eversion

and new susceptible breed [15]. In conclusion, even though the cherry eye is rare in cats, susceptible breeds are not recognized, and affecting age could be more various, its needs more study and investigation to detect the aforementioned factors. In contrast to dogs that nictitans membrane passively retract by globe retraction, the nictitating membrane of cats contains extended smooth muscle [16]. That facilitates the third eyelid retraction and in the author's opinion, this difference is the cause of rarity and decreases the retention period of prolapse in cats.



**Figure 1:** left third eyelid gland prolapse plus T shape cartilage.

## Conclusion

Third eyelid gland prolapse also occurs in cats besides dogs, and it is more emergency in cats because of the sensitive anatomy and scratching behavior of cats more than dogs.

## Acknowledgements

Thanks to Department of Veterinary Surgery, Shahid Bahonar University of Kerman.

## Conflict of Interest

The authors declare that he has no conflict of interest.

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