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Short communication

Surgical correction of third eyelid gland prolapsed (Cherry eye) in dog - First case report in Bangladesh

Bhajan Chandra Das*, Ankon Das, Ummay khaer Fatema Chy, Debashish Sarker, Thomby Paul and Avi Das

Department of Medicine and Surgery, Chattogram Veterinary and Animal Sciences University, Chattogram-4225. Bangladesh

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*Corresponding author:
Cell: +88-01930370731

E-mail: bhajan@cvasu.ac.bd

A B S T R A C T

Nictitans Gland Prolapse (NGP), also known as third eyelid gland prolapse or Cherry eye disease, is a serious and common surgical affection of eyes of dogs. Although numerous surgical procedures have been documented, more studies are required to find out the most efficient method. The objective of the present case study is to investigate the outcome of surgical correction of Cherry eye in a dog. In the study a castrated male Labrador Retriever dog of 2.5 years old, weighing 26 kg was presented to the Shahedul Alam Quadary Teaching Veterinary Hospital, Chattogram Veterinary and Animal Sciences University, Chattogram. The patient came with a history of swollen mass at medial canthus of the right eye since 3 months. Clinical examination revealed swollen mass, congested blood vessels, frequent blinking of eyelid and epiphora in right eye. According to the clinical history and examination, the present case was diagnosed as third eyelid gland prolapse (Cherry eye) and was decided for surgical correction by Morgan's Pocket technique. Surgery was performed by xylazine and ketamine anaesthesia. After the successful surgery and proper postoperative care for 2 weeks, the patient was fully recovered. No reoccurrence or complication was noticed upto 6 months of post operation. The authors suggest that the Morgan's Pocket technique can be applied for the Cherry eye correction in dogs.

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1. INTRODUCTION

The third eyelid gland (tear gland of the nictitating membrane) is an essential part of tear production which is important for the health of outer eye structure (Gelatt et al., 2013). It provides approximately 30% of the total tear production of eye (Saito et al., 2001). The third eyelid gland is located at the base of a 'T' shaped hyaline cartilage inside the roughly triangular shaped conjunctival fold locating at the medial canthus of the eye (Crispin, 2005; Gelatt et al., 2011). The inflammation, hypertrophy and prolapse of the gland is called "Cherry eye" (Thamizharasan et al., 2016). Unilateral or bilateral Cherry eye is very common in dogs, and some breeds like American Cocker Spaniel, Lhasa Apso, Beagle, Pekingese, English Bulldog etc, are very susceptible to this condition. Usually this condition is more frequent in young dogs than older dog (Reza et al., 2013). The incidence of "Cherry eye" was 5.29 percent among all canine ocular illnesses, according to Antonia et al. (2014). A flaw in the retinaculum, which holds the gland to the periorbita, causes cherry eye. Due to this abnormality, the gland prolapses and

protrudes as a red, fleshy lump from the medial canthus of the eye (Faruquie et al., 2018). Additionally, the connective tissues keeping the gland inside the membrane may weaken, causing the gland to prolapse (Gelatt et al., 2013).

Different types of surgical procedures categorized as 'anchoring' or 'pocket' techniques are used to correct the condition (Crispin, 2005).Formerly the surgical correction technique involved total excision or removal of the gland. But after surgery patient runs an increasing risk of developing Keratoconjunctivitis Sicca (KCS) called dry eye, due to impaired tear production and drainage (Jones and Crispin, 2002).So, conservation of the gland at its normal location by surgical technique is recommended. Posterior (bulbar) nictitans anchoring approach, Intranictitans tacking procedure, Conjunctival mucosa envelope procedure, Conjunctival mucosa pocket procedure (Morgan's pocket technique) are different replacement surgical techniques (Slatter, 2003, Crispin, 2005). In the present study, Morgan's pocket technique was described to correct the Cherry eye in a dog.

2. CASE PRESENTATION

A 2.5-year-old male castrated Labrador Retriever weighing 26.1 kg who had a 3 month history of a large pink protruding mass at the medial canthus of the right eye presented to Shahedul Alam Quadary Teaching Veterinary Hospital (SAQTVH), Chattogram Veterinary and Animal Sciences University (CVASU) (Figure1). Physical examination revealed that the dog was fairly awake and active, that its temperature (100.7 °F) was normal, that its mucous membranes were pink and moist, which is normal, and that only slight dehydration was evident. Clinical symptoms included epiphora of the afflicted eye, congested blood vessels on a large mass, and frequent blinking of the eyelids, which indicated ongoing irritation. Based on the relevant history, clinical signs and physical examination the present case was diagnosed as "Cherry eye" and decided for surgical management by conjunctival mucosa pocket method (Morgan's pocket technique).

Figure 1. Right third eyelid gland prolapsed in dog.

ANAESTHESIA AND SURGICAL TECHNIQUE

The patient was premedicated with xylazine (Xylazine®, Indian Immunologicals Ltd., India) intramuscularly at the dose rate 1mg/kg body weight. The induction was done with ketamine (Ketalar®, Popular Pharmaceuticals Ltd., Bangladesh) intravenously at the dose rate 8mg/kg body weight. The dog was placed on the operation table at left lateral recumbency. The eye was cleaned properly with normal saline. The area around the eye was covered with a sterile surgical drape and an eye speculum was placed to expose the structure better. Outward traction of the third eyelid was done with the help of plain forceps (Figure 2). Two parallel incisions were given at the conjunctiva anterior and posterior to the prolapsed gland. Then the mucosa of the gland was separated from the surrounding submucosa at the two incision edges (Figure 3). Consequently the gland was pushed back ventrally in its normal position between the two incision lines (Figure 4). Then a continuous pattern of suture was given at the conjunctiva with absorbable suture materialsize4-0,vicryle (Ethicon®, Johnson & Johnson Private Ltd., India) connecting the two edge of the incisions. After that a second layer of suture was also given at continuous Cushing pattern parallel to the first suture (Figure 5). The knot was given to the outer surface (limbus surface) for preventing irritation to the inner surface facing the cornea. The third eyelid returned to its normal position immediate after the surgery (Figure 6).

3. POST-OPERATIVE MANAGEMENT

Two drops of the topical antibiotic ciprofloxacin 0.3% eye drop (Ciprocin®, Square Pharmaceuticals Ltd., Bangladesh) were administered in the afflicted eye every eight hours for two weeks as postoperative care. For seven days, a drop of the anti-allergy medication ketotifen 0.025% eye drop (Ketof®, Ibn Sina Pharmaceuticals Industry Ltd., Bangladesh) was administered every 12 hours.

4. RESULTS

Premedication with xylazine provided mild sedation to the dog within 10 minutes. Vomition was not seen in the dog after premedication. The induction time was 3 minutes with ketamine. The surgical process took 35 minutes. The anaesthetic recovery was smooth. No postoperative complication was found in the dog. After 2 weeks of surgery, the dog was completely recovered with the absence of any inflammatory sign (Figure 7). There was no recurrence recorded upto 6 months of follow up.

Figure 2. The prolapsed gland was exposed with the help of eye speculum

Figure 3. Parallel incisions were given at anterior and posterior of the gland.

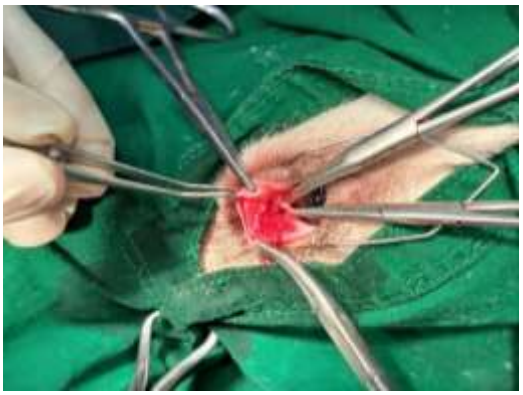

Figure 4. Gland was pushed back into the pocket

Figure 5. Continuous pattern suture was given

Figure 6. Condition immediate after the surgery

Figure 7. Eye represented normal after 2 weeks of the surgery

5. DISCUSSION

Dehghan et al. (2012) reported that Cherry eye can occur at any age mainly less than one year of age but in our study the patient was found at 2.5 years old which was older than the authors reported. According to Reza et al. (2013) and Gelatt et al. (2011), American and English Cocker Spaniel, English Bulldog, Beagle, Pekingese, Boston Terrier, Basset Hount, Lhasa Apso, and Shih Tzu were the most affected breeds. In our study, the case was found in a Labrador Retriever dog but predisposition of the condition for this specific breed is not reported by any study. Deveci et al. (2020) recorded 65% of the patients were male in Cherry eye. Similarly our patient was also found in a male Labrador Retriever. Surgical correction is the only effective remedy for this condition (Slatter, 2003; Fossum et al., 2013). In this case study Morgan's pocket technique was performed. Similarly many studies also reported that repositioning technique as a safe option because it has less risk of recurrence and dry eyes. The Morgan's technique approach had a 94.12% success rate with no recurrence, no interference with tear generation, and a 5.88% complication rate (Deveci et al., 2020; Singh et al., 2016). However, there were no problems or recurrences in our trial. Additionally, Thamizharasan et al. (2016) stated that the whole excision approach was successfully used in a trial, however the tear generation was impaired. Within two weeks of the gland being removed, tear production fell to 37%, according to Saito et al. (2001)'s research.
The anaesthesia protocol included xylazine and ketamine without any topical infiltration anaesthesia on eye. Decreased in intraocular pressure from using proparacaine eye infiltration was reported by Sarchahi and Eskandari (2018).

6. CONCLUSION

The present case report suggests that the Morgan's pocket technique is very simple and economic procedure which can be applied in the field condition of Bangladesh for the successful correction of Cherry eye in dog.

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