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Successful surgical correction of cherry eye by modified Morgan's pocket technique in 4 dogs

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Abstract

Four cases of 'Cherry eye' of different breeds reported at Pvt. pet Clinic. All dogs were apparently healthy with temperature, respiration & Heart rate within normal limits. Clinical signs manifested were ocular discharge, conjunctivitis & protrusion of bright red mass along the medial canthus of left eye. Ophthalmic examinations included Schirmer's Tear Test and direct ophthalmoscopic examination. Preoperatively animals were treated for 2-3 days with Tobramycin- Dexamethasone eye drops instilled B.I.D to rule out ulcer and reduce inflammation of eye. Preanaesthetic, Inj. Atropine sulphate @ 0.05 mg/kg s/c and sedation, inj. Triflupromazine @ 1 mg per kg body weight and induction with inj. Propofol @ 20 mg per kg body weight. The surgery was done by using modified Morgan technique. Post-operative management included instillation of 2- 3 drops of Tobra-D eye drops B.I.D and Tab. Carprofen @ 2.2 mg/kg BW PO S.I.D for 3-5 days. Both the dogs showed uneventfully recovery after 15-20 days.

Keywords: Cherry eye, modified Morgan technique, beagle, Pomeranian, Shih Tzu breed

Introduction

Prolapse or protrusion of the gland of the third eyelid (compared to glandular hyperplasia, hypertrophy, nictitating gland adenoma) is one of the most frequently encountered diseases of the dog's nictitating membrane. Due to inflammation subsequent the prolapse, the gland becomes hypertrophic. In most cases, re-placing of the swollen and thickened gland to its anatomical position is difficult (Yayingul *et al.*, 2019) [13].

Generally, prolapse is encountered in young animal, especially before 1 year of age. Besides, it was recorded that the male dogs with cherry eye were overrepresented than females and unilateral cases were by far more common than bilateral in many reports (Kaswan, 1985; Morgan, 1993; Plummer, 2008; Dehghan *et al.*, 2012) [2, 5, 8, 1]. Breeds especially Pekingese, Neapolitan Mastiff, Cocker Spaniel, Beagle, Bulldog and Basset Hound are more prone to this pathological syndrome (Raza *et al.*, 2013) [9]. The eversion of nictitating gland is written off as glandular hyperplasia, hypertrophy, nictitating gland adenoma, protrusion of gland or cherry eye (Mitchel, 2012) [4]. The main cause of prolapse is weakening of supportive ligament that fixes the gland (Raza *et al.*, 2013) [9].

In dogs, the third eyelid gland produces 30–57% of the tear film (Multari *et al.*, 2016) [6]. Many surgical techniques are reported in the veterinary literature, which anchor the gland to the per orbital tissues or create a pocket in the mucosa of the third eyelid or use an imbrication technique. Many anchoring techniques have been described, using the ventral episcleral fascia, ventral medial sclera, oblique ventral muscle, ventral orbital periosteum, third eyelid cartilage or loose conjunctival tissue at the base of the third eyelid (Multari *et al.*, 2016) [6]. This report describes the treatment of cherry eye using a modified Morgan's technique in 2 dogs.

Case history

Case no. 1

A 2yr old Beagle dog Breed was presented at the local physician with chief complaint of unilateral reddish growths on the medial canthus of the left eyes (Fig. no. 1). History showed that the mass was noticed about two months before presentation and had been increasing in size with time. The dog was fed mainly on meat, fish, canned foods, milk and tea. The vaccination history was unknown. The physiologic parameters such as hematological and serum biochemical values were within normal range. The case was diagnosed as "Cherry eye".

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Fig 1: A 2yr old Beagle dog Breed was presented at the local physician with chief complaint of unilateral reddish growths on the medial canthus of the left eyes

Case no. 2

A 3yr old Pomeranian dog Breed was presented at the local physician with chief complaint of unilateral reddish growths on the medial canthus of the left eyes (Fig. no. 2). History showed that the mass was noticed about two months before presentation and had been increasing in size with time. The dog was fed mainly on packed food, canned foods, milk and pav. The vaccination history was unknown. The physiologic parameters such as hematological and serum biochemical values were within normal range. The case was diagnosed as “Cherry eye”.



Fig 2: A 3yr old Pomeranian dog Breed was presented at the local physician with chief complaint of unilateral reddish growths on the medial canthus of the left eyes

Case no. 3

A 13 months old Shih Tzu Breed, male dog was presented at the local physician with main complaint of unilateral reddish growths on the medial canthus i.e. nictatans membrane of the right eyes (Fig. no. 3). History showed that the mass was noticed about 4 months before presentation and had been increasing in size with time. Ophthalmic examination revealed whitish layer development on eye ball with opacity of cornea was developed in the affected eye. The dog was fed mainly on meat and canned foods and vaccinated. The physiologic parameters such as hematological and serum biochemical values were found within normal range. The case was diagnosed as “Cherry eye”.



Fig 3: A 13 months old Shih Tzu Breed, male dog was presented at the local physician with main complaint of unilateral reddish growths on the medial canthus i.e. nictatans membrane of the right eyes

Case no. 4

A 15 month old Shih Tzu Breed female dog was presented at the local physician with chief complaint of bilateral reddish growths on the medial canthus i.e. nictatans membrane of the both eyes (Fig. no. 4). The masses were present since last 15 days before presentation and had been increasing in size. This dog was also on packed food along with milk and pav and was vaccinated. Hematological and serum biochemical values were found within normal physiological range and were diagnosed as “Cherry eye”

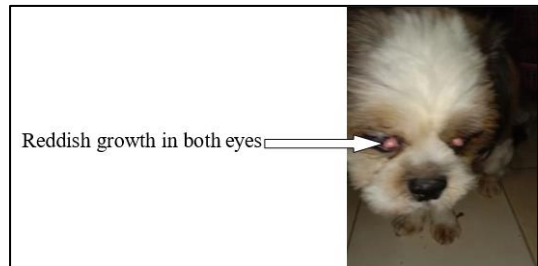


Fig 4: A 15 month old Shih Tzu Breed female dog was presented at the local physician with chief complaint of bilateral reddish growths on the medial canthus i.e. nictatans membrane of the both eyes

Surgical Technique

The dogs were prepared for surgery as to the standard preoperative preparation principles of the periorbital area. General anesthesia was induced with combination of inj. Triflupromazine @ 1mg/kg I/V and inj. Propofol @ 20mg/kg I/V. Following endotracheal intubation, the anesthesia was maintained with isoflurane @ 2%-3.5% in oxygen. The dogs were positioned in lateral recumbency as affected eye facing upward on the operation table. The surgical area was draped carefully and then palpebral fissure was opened by placing an eyelid speculum. The third eyelid was exteriorized and everted to expose its bulbar surface. On each side of the prolapsed gland, two superficial curvilinear incisions parallel to the free margin on the bulbar side of the third eyelid were made. The gland was placed into the pocket and the conjunctival edges were closed using 3-0 chromic catgut using lambert by Cushing sutures (Fig. no. 5). In the 2nd cases, the procedure was repeated in the same manner. After the surgical procedure, both the patients were treated topically with ophthalmic solution 2- 3 drops of Tobra-D and tab. Carprofen @ 2.2 mg/kg BW PO S.I.D for 3-5 days (Fig. no. 6). Due to possibility of interaction with healing of the suture line, local corticosteroid administration was not used after the operations. No postoperative complication was encountered and both the dogs recovered uneventfully (Fig. no. 7).

After surgery e-line after



Fig 5: The gland was placed into the pocket and the conjunctival edges were closed using 3-0 chromic catgut using lambert by Cushing sutures



Fig 6: Post operative pic



Fig 7: After Complete Healing

Discussion

Diseases of the third eyelid is commonly encountered in dogs and prolapse of the third eyelid gland, or cherry eye, is the most often one among these diseases (Yayingul *et al.*, 2019) [13]. Etiological factors are not known well, but a weakness of connective tissue attachment of the gland, which can be associated with genetically disorder, is especially emphasized (Singh *et al.* 2017; Dehgha *et al.* 2012) [11, 1].

In our study, no underlying reason was detected as a possible reason of cherry eye except connective tissue weakness. According to database, prolapse of the third eyelid gland usually occurs at two or three months of age (Mazzucchelli *et al.* 2012) [7].

Prolapsed gland of the third eye becomes inflamed in time and this inflammation affects the conjunctiva and creates discomfort for the affected animals. These animals usually suffer from reduced altered tear production and chronic conjunctivitis, ocular discharge (Slatter 2001; Dehghan *et al.* 2012; Peiffer 2002) [12, 1, 7]. Dogs with cherry eye were presented to our clinic with complain of only mild conjunctivitis and epiphora besides prolapsed gland which looks as dark pink to reddish mass on the third eyelid. The third eyelid gland contributes approximately 40 percent of the tear production and maintains aqueous tear production (Saito *et al.*, 2001) [10].

For that reason, leaving the animal as untreated, or removing of the third eyelid gland may results in a reduced tear production, Kerato conjunctivitis SICCA namely. Main complications of modified techniques are inflammation, chances of recurrence and failure of stitch holding capacity (Raza *et al.*, 2013) [9].

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