

A RARE CASE OF BILATERAL PERSISTENT PUPILLARY MEMBRANE WITH SECONDARY CONCURRENT CATARACT AND UNILATERAL CHERRY EYE IN A LABRADOR DOG

Giggin, T.¹; Anoop, S.²; Deny, Jennes³; Soumya, Ramankutty⁴; Sudheesh, S. Nair⁴; Laiju, M. Philip⁴ and John Martin, K.D.⁵

¹Ph.D. Scholar, ²Assistant Professor, ³M.V.Sc. Student, ⁴Assistant Professor, ⁵Professor and Head, Department of Veterinary Surgery and Radiology, College of Veterinary and Animal Sciences, Mannuthy, Thrissur -680651.

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A six-month-old male Labrador Retriever pup was presented to Veterinary Clinical Complex, Mannuthy, Kerala with bilateral persistent pupillary membrane, cataract and unilateral cherry eye. Due to the congenital nature of Persistent Pupillary Membrane (PPM) only cherry eye was managed surgically.

Keywords: Canine, persistent pupillary membrane, Cherry eye, Cataract, Morgan's pocketing technique.

Incidence of congenital ocular affections are rare and it occurs after embryonic development. It appears spontaneously or can be induced by teratogens during gestation, or can be associated with genetic or non-genetic factors. These abnormalities can occur as unilateral or bilateral, or can be isolated or in combination with other ocular congenital anomalies (Grahn and Peiffer, 2013). Cherry eye also known as 'haws' is the condition in which the gland of third eyelid is protruded out in the medial canthus and the condition is characterised by hyperemia and increase in gland volume. It is most commonly found in breeds like Neapolitan mastiff, Cocker spaniel, Pekingese, Bull dog, Beagle and Basset hound. The protruded gland undergoes abrasion and drying leads to secondary inflammation and swelling. In the present case the condition was unilateral. Cataract is defined as the opacity of the lens or its capsule. The causes of development of cataract include genetic, secondary to ocular diseases, traumatic, toxic, age-related, radiation-induced, or caused by electrocution (Davidson and Nelms, 2007). Congenital cataract usually occurs as unilateral, nuclear and non progressive (Cook, 2013). In this present case the cataract was bilateral and

occurred secondary to Persistent Pupillary Membrane (PPM). Lens was completely opaque. PPM or irido-pupillary membrane is the most common type of congenital membrane in animals. This condition can be either unilateral or bilateral. In present case, it was bilateral.

Case history and Observations

A six-month-old male Labrador Retriever pup was presented to Veterinary Clinical Complex, Mannuthy, Kerala with a pink soft tissue swelling in the medial canthus of right eye with mucopurulent discharge. The condition was therefor the past one week. On clinical examination physiological parameters were within the normal range. Close ophthalmologic examination revealed the presence of bilateral PPM extending from iris to anterior lens capsule. Menace response, pupillary light reflex, palpebral reflex and corneal reflexes were normal. Cataractic changes were also noticed in both lenses with third eyelid gland prolapse in right eye. Animal showed some difficulty for the complete dilatation and constriction of pupil due to the presence of PPM. It was decided to correct the cherry eye with Morgan's pocketing technique.



Fig. 1 Right eye with cherry eye, cataract and persistent pupillary membrane extending from iris to anterior lens capsule



Fig. 2 Left eye with cataract and persistent pupillary membrane

Treatment and Discussion

Premedicated the animal with inj. atropine at the rate of 0.045 mg/kg body weight and inj. xylazine at the rate of 1 mg/kg body weight intramuscularly. Induction of anaesthesia was done with inj. ketamine at the rate of 5 mg/kg body weight intramuscularly. Maintained the anaesthesia with isoflurane 1% - 2% in oxygen.

Positioned the animal in left lateral recumbency and prepared the peri-orbital and ocular area of the right eye for aseptic surgery.

Made two parallel incisions at the base of the prolapsed gland in both sides. By blunt dissection, a mucosal pocket was made on the inner aspect and the prolapsed gland was repositioned in to the pocket. Both incisions were united by simple continuous pattern using polyglactin 910 size 3/0. Post-operatively topical application of antibiotic and anti-inflammatory eyedrops twice daily for seven days was done. Animal had an uneventful recovery.



Fig. 4 Exposed the gland for Morgan's pocketing technique

Fig. 5. Tenth postoperative day

Out of the total tear production of the eye, the third eyelid gland contribute to 30 per cent. Resection of the gland can lead to

decreased tear production and finally results in a condition called keratoconjunctivitis sicca (KCS). The basal and reflex tear production

can be measured by using Schirmer tear test. Replacement of the gland is preferred in prolapsed condition than resection in small breeds and young animals preferably less than one year of age as also reported by Fossum, 2003. The main reason for the prolapse of the gland is the weakening of the supportive ligaments that fix the gland. Morgan's pocketing technique is the most popular surgical method for the correction of prolapsed third eyelid gland because it is simple to perform and has a greater success rate with fewer complications. This technique does not alter the normal tear production and the morphology of the third eyelid gland ducts as also mentioned by Nanaboina and Thota, 2017.

The persistent pupillary membrane is a developmental disorder of iris and it happens due to the earlier stoppage of atrophy of *tunica vasculosa lentis*. The atrophy of *tunica vasculosa lentis* can happen in dog at 14th – 18th day after parturition. If the atrophy fails to happen, the parts of the membrane persist like a meshwork between the lens and iris. The meshwork is often whitish but can be partly or completely pigmented. This condition is a painless one. PPM, if attached to the anterior lens capsule, will be accompanied by small and stationary lens opacities. The extent of the cataract depends on the severity of the primary condition but usually does not produce any visual defect. Cataract is the opacity of the lens. It may be primary or secondary. The primary hereditary cataracts first appear in a few weeks or months of age and are progressive in nature. They occur with no other associated ocular disease. Cataracts which are associated with some other hereditary ocular diseases are called secondary cataracts. Pupillary light reflex is an unconscious reaction of the animal towards the light. The animal with cataract

also shows pupillary light reflex if the retina is functional. In this present study, the bilateral cataract was associated with PPM.

Summary

A case of congenital bilateral PPM and associated secondary bilateral cataract and the surgical correction of unilateral cherry eye is kept on record.

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