

Case report

**SURGICAL MANAGEMENT OF BILATERAL HYPERMATURE
CATARACT BY EXTRACAPSULAR CATARACT EXTRACTION
(ECCE) METHOD USING OPERATING MICROSCOPE
IN COCKER SPANIEL DOGS**

Munna Lal¹, S.K. Jhirwal², P. Bishnoi³, T.K. Gahlot⁴ and Krupa K. Soni⁵

^{1&5}Teaching Associate, ²Assistant Professor & CO-PI, AINP-DIMSCA,

³Associate Professor & PI, AINP-DIMSCA,

⁴Professor Department of Veterinary Surgery and Radiology

College of Veterinary and Animal Science, RAJUVAS, Bikaner- 334001

E-mail: drjhirwalsk@yahoo.co.in (**Corresponding Author*)

Abstract: Cataracts in dogs belong to the eye pathology. It occur whatever the breed and age of the dog. In the present study 2 clinical cases of the cataract in cocker spaniel dogs with vision impairment were presented on variable periods at the Surgery Clinics, CVAS, Bikaner. On the basis of detailed ophthalmic examinations the cases were diagnosed as hypermature cataracts. Surgical correction of the hypermature cataracts was done by the Extracapsular Cataract Extraction (ECCE) method with the help of operating microscope. Post-operative follow up of the operated cases was done till four weeks.

Keywords: Hypermature cataract, Extracapsular Cataract Extraction (ECCE) method and operating microscope.

Introduction

A cataract is the clouding of an otherwise clear ocular lens, with disturbance in the passage of light (1). Cloudiness in cataractous lens scatters light as it enters the eye which initially only result in a blurry image, but may progress to cause blindness. Hypermature cataract is the last stage of cataract development in which lens resorption starts which causes the decrease in total lens volume, wrinkling of anterior capsule and may generates the areas of fibrosis and dystrophic calcification (2). Loss of vision due to cataract may be accompanied by secondary conditions such as uveitis and glaucoma (3).

Surgical removal of hypermature cataracts is the treatment of choice if restoration of vision is desired. Extra capsular cataract extraction (ECE) is removal of the lens cortex and nucleus, leaving the lens capsule intact, other than the removal of a small portion of the central anterior lens capsule (capsulotomy) (4).

Materials and Methods

In the present clinical study 2 clinical cases (case no-1 and case no-2) of hypermature cataracts were reported in Cocker spaniel dogs which were presented at the Department of Veterinary Surgery and Radiology, Bikaner (Rajasthan). History of age, sex, breed, eye affected and time elapsed since occurrence of opacity was recorded. Hematological examinations of both the cases were also performed to know the diabetic status of the dogs. Both the dogs were found negative for diabetes.

Out of two cases, one dog (case no-1) was severely affected with the bilateral glaucomatous conditions (Fig.2.) with rise in the intraocular pressure due to long term exposure to cataract. This dog was first treated with the tablets acetazolamide @ 250 mg orally for 7 days and eye drop pilocarpine (2% solution) 2 drops b.i.d. for 7 days before the cataract surgery. While no such conditions were reported in the case no-2.

Detailed ophthalmic examinations such as menace reflex test, pupillary light reflex test, corneal reflex test and ultrasonographical examinations of both the clinical cases were carried out for the assessment of vision. Both the cases were operated under general anaesthesia using operative microscope by the same procedure as described by the Gelatt and Gelatt (2001) [Fig. 3- Fig. 6]. Post-operative follow up of both cases was done every week up to four weeks. A broad-spectrum systemic antibiotic, antibiotic eye drops and eye drops flubriprofen were given for 7 days. Tablet acetazolamide @ 250 mg orally for 15 days and eye drop pilocarpine (2% solution) instilled 2 drops b.i.d. for 7 days to prevent the generation of postoperative ocular hypertension. Elizabethan collar was applied to both the dogs postoperatively for two weeks to protect the eye from self-mutilation.

Results and Discussion

Many purebred dogs and their crosses are predisposed to juvenile and senile cataracts (4, 6). In this study, the dogs were of the Cocker spaniel breed. Cocker spaniel, German shepherd, Poodle, Schnauzer, Labrador retriever, Lhasa apso and Dalmatian breeds of dog have higher susceptibility to cataract (7). On the basis of detailed ophthalmic examinations the cataracts of both the dogs examined in this study were classified as hyper mature.

Tropicamide 1% eye drops were instilled in all four eyes one week prior to surgery that provide the sufficient pupil dilatation at the time of cataract surgery. Similar findings were also reported by Shafiuzama *et al.* (1998) and they recommended the application of tropicamide 1% eye drop twice or thrice daily for three days prior to surgery for better pupillary dilatation. In the present study, trypan blue dye used for staining the anterior lens

capsule and a viscoelastic agent was used to protect the endothelial cells. No intraoperative complications were observed. Whitley (1988) had mentioned the use of viscoelastic material to protect the corneal endothelium during the intraocular surgery.

Incision on cornea from 10 O' clock to 2 O' clock position was sufficient for the delivery of the lens nucleus. Some difficulty in capsulotomy was observed in right eye of case no-1 due to corneal vascularisation. Corneal incision was successfully sutured with the help of 8/0 vicryl absorbable suture material. Peri-operative complication such as haemorrhage was observed in right eye of case no-1 and a post-operative complication such as glaucoma was also reported in the same case. On the first week after surgery corneal opacity was reported in both the cases (case no-1 and case no-2) that were considerably reduced at the end of fourth weeks. Return of ambulatory vision was seen in both the cases (in 3 eyes) but in right eye of case no-1 vision was completely lost that may be due to formation of adhesions because of haemorrhage at the time of surgery. Whitley *et al.* (1993) also recorded the 90% success rate and stated that extracapsular lens extraction method would be a more successful procedure for cataract surgery in dogs.

References

- [1] Davson, H. (1980). Physiology of the eye. 4th Edn., New York, USA, Churchill Livingstone, Elsevier. pp: 123-40.
- [2] Patil, V.N., Patil, P.B., Parikh, P.V., Talekar, S.H., Patil, D.B., Kelawala, N.H. and Madhavi, J.S. (2014). Cataract and ECCE – An evaluation on 60 canine cases registered at Anand, Gujarat (India) region. *Euro. J. of Biom. and Pharma. Sci.* 3: 326-39.
- [3] Gelatt, K.N. (1981). In: Veterinary ophthalmology, 2nd Edn. Gainesville, Florida, pp: 429- 60.
- [4] Glover, T.D. and Constantinescu, G.M. (1997). Surgery for cataracts. *Vet. Clin. North Am. Small Anim. Pract.* 27: 1143-73.
- [5] Gelatt, K.N. and Gelatt, J.P. (2001). Surgical procedures of the lens and cataracts. Small Animal Ophthalmic Surgery: Practical Techniques for the Veterinarian, Butterworth-Heinemann, Oxford, UK, pp: 286-34.
- [6] Özgencil, F.E. (2005). The results of Phacofragmentation and Aspiration Surgery for Cataract Extraction in Dogs. *Turk J. Vet. Anim. Sci.* 29: 165-73.
- [7] Whitley, R.D. (1988). Focusing on eye disorders among purebred dogs. *Vet. Med.* 50-63.
- [8] Shafiuzama, Md., Vansanth, M.S. and Jayadevappa, S.M. (1998). Cryoextraction of cataractous lens in Canines. *Ind. Vet. J.* 75: 444-45.

[9] Whitley, R.D., McLaghlin, S.A., Whitley, E.M. and Gilger, B.C. (1993). Cataract removal in dogs: the surgical techniques. *J. of Vet. Med.* 859-66.



**Fig.1. Hypermature cataract
(Case no-1)**



**Fig 2. Hypermature cataract
with glaucoma (Case no-2)**

Surgical Procedure of Extracapsular Cataract Extraction (ECCE) Method



**Fig.3. Position of the eye under
operating microscope**



**Fig.4. Incision on cornea with
Keratome**



Fig.5. Removal of cataractous lens



Fig.6. Suturing of cornea



Fig.7. Recovered hypermature cataractous lens

Fig. 8. At 1st week

Fig. 9. At 4th week

Postoperative follow up images of operated case at 1st and 4th week