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Short Communication

Surgical Management of Congenital Unilateral Entropion in a Labrador Pup Using Modified Hotz-Celsus Technique

Rahul Kumar Udehiya, Dayamon David Mathew, Naresh Kumar Singh*

ABSTRACT
A two-month-old male Labrador retriever pup was presented with a history of unilateral blepharospasm, and epiphora. The case was diagnosed with congenital unilateral entropion on physical and ophthalmic examination. The entropion condition was corrected surgically using modified Hotz-Celsus technique. Excellent recovery was observed, and no complication was recorded following treatment up to three monthspost surgery.
Key words: Dog, Labrador, Epiphora, Entropion, HotzCelsus, Eye defects, Veterinary surgery.

INTRODUCTION

In entropion, there is the inward rotation of all or part of the eyelid margin which induces almost continuous rubbing of the eyes. Entropion may be developmental, spastic or cicatricial. Due to that epiphora, blepharospasm, enophthalmos, conjunctival hyperaemia and third eyelid protrusion are common sequelae of entropion. If entropion is not corrected surgically a corneal ulcer or Keratitis may develop.[1] Many types of surgical procedures have been used for the correction of entropion. The technique used for correction are described as eyelid tacking, lateral canthal closure, medial canthal Y to V-plasty and stellate rhytidectomy. In eyelid tacking technique the suture is placed in the affected eyelid to evert the eyelid margins. Another more popular method used for correction is Hotz-Celsus, a crescentic flap of eyelid skin with underlying orbicularis muscle adjacent to the area of lid margin to bring it back to a normal position[2] is done. Recently, the laser light has been used for correction of mild case of entropion in dogs.[3] In the present study, modified Hotz-Celsus technique was used for correction of entropion.

History and clinical findings

A 2-month-old, 3.4 kg body weight, male Labrador retriever pup was presented with a history of unilateral blepharospasm and epiphora since birth (Figure 1). The pup was having normal feed and water intake, normal urination and defecation. The dog had been under medicinal treatment for a while but was without any signs of improvement. Physical examination revealed the inward deviation of all or part of the eyelid margin. Clinically, all physical parameters were within normal limits (i.e., rectal temperature of 100.4°F, Pulse rate 130/min and respiration rate 45/min and pink mucous membrane). Ophthalmic examination revealed unilateral entropion on left eye with mild conjunctivitis. Epiphora was observed in the affected eye. The cornea grossly normal. Increased Schirmer tear test value was observed with negative Flourescein dye test and having normal fundus in affected eye.

Diagnosis and Treatment

On the basis of physical and ophthalmic examination, the condition was diagnosed as congenital unilateral entropion and was decided to correct the condition surgically by using modified HotzCelsus technique. The animal was placed in lateral recumbency and affected eye was in upmost position. The periocular area was prepared and scrubbed with diluted povidone iodine solution. The surgery was performed under general anesthesia. The animal was premedicated with atropine sulfate @ 0.04 mg/kg b.wt. Intra-muscularly, followed by diazepam@ 0.5 mg/kg b.wt. Intra-venously. The animal was induced with Propofol @ 4 mg/kg b.wt. Intra-venously and maintained with Isoflurane inhalant anesthetic @ 2% concentration.

Proper assessment for skin incision was done by quantifying the degree of entropion. A skin incision was given approximate 2 mm distal and parallel to the whole lower eyelid starting from medial to lateral canthus. The second skin incision was made parallel to first incision in a crescent shape after proper assessment of the excess skin fold to be removed. The crescent shape skin flap along with a portion of orbicularis oculi muscle was excised (Figure 2). The lateral canthotomy was done for proper eversion and opening of eye. The skin incision edges of lower eyelid along with canthotomy incision was opposed by monofilament polyamide number 3-0 in simple interrupted suture pattern (Figure 3). Post-operative medication included topically Gatifloxacin eye drops,

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Figure 1: Photographs showing entropion of the lower eyelids with blepharospasm and epiphora.

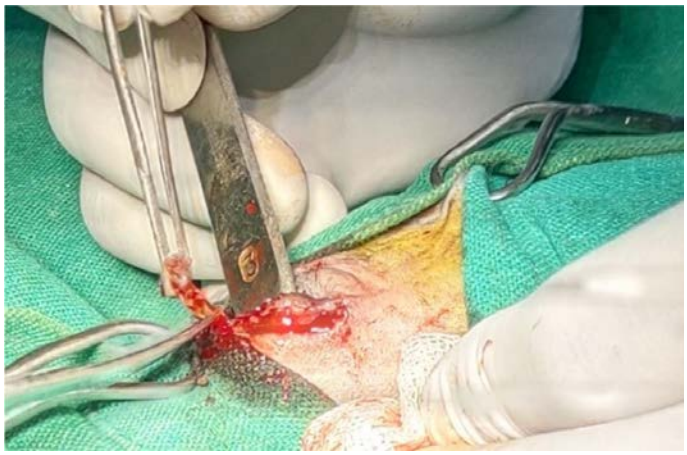

Figure 2: Photographs showing excision of crescent shape skin flap along with a portion of orbicularis oculi muscle from the lower eyelids.

Figure 3: Photographs showing the Hotz-celsus procedure with cathotomy.

Figure 4: Photographs showing recovery with no complication on 12th post-operative day.

1-2 drops instilled four times in a day for 7 days, carboxymethylcellulose eye drops, 1-2 drops instilled three times in a day topically for 3 days and topical application of neomycin ophthalmic ointment at the suture site for 5 days. Oral cephalexin drops twice daily for 5 days and oral meloxicam drops once for three days given postoperatively. To avoid self-injury, Elizabethan collar was advised for two weeks. After twelve days of surgery, the sutures were removed. The dog was monitored through telecommunication for any type of discharge or ocular irritation to check condition of eye. Excellent recovery was observed, and no complication was recorded up to three months following the treatment (Figure 4).

DISCUSSION

The similar ocular findings were reported earlier like inversion of eyelid by Anoop *et al.*[4] and Read and Broun.[2] The breeds prone for entropion include chow chow, St. Bernard, English bulldog, Great Dane, bull mastiff and sporting dogs. However, in present study, the Labrador retriever is affected with entropion this may be due to inherited as an autosomal dominant trait.[5] The blepharospasm and epiphora was the most common clinical signs recorded in majority of the studies.[6] All the physiological parameters were recorded within normal range.[4] The Hotz-Celsus technique for correction of entropion is used widely since this technique is simple to perform and having very high success rate.[2,4] Few other techniques have been also used for the treatment of entropion in young dogs like eyelid tacking sutures to evert the eyelid temporarily,[7] and the temporary tarsorrhaphy has been described in young dogs for the relief of trichiasis with severe entropion.[8] The Hotz–Celsus technique is now performed with the CO_2 laser and it appears fast, easy, and less traumatic than cutting with a scalpel.[3] However, in present study, the Hotz-Celsus technique with lateral canthotomy was done with 11 number scalpel blade and was found to be suitable technique for proper eversion and opening of eye lid.

In summary, the modified HotzCelsus technique was observed to an effective surgical method for restoring normal eyelid function without any complication.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

ABBREVIATIONS

Kg: Kilogram, **hr:** hour, **ºF:** degree Fahrenheit, **@:** at the rate of, **mg/kg:** milligram per kilogram, **ml:** milliliter.

SUMMARY

Modified Holtz-Celsus procedure is the novel surgical technical for the correction of lower lid entropion in dogs.

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