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Successful surgical management of descemetocoele (OS) in an Aseel bird

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Abstract

An 11-month-old cock was presented to the Department of Veterinary Surgery and Radiology, NTR College of Veterinary Science, Gannavaram with a history of traumatic injury to left eye five days ago. The bird showed squinting of the affected eye and was reluctant to open it. Clinical examination and detailed ophthalmic examination revealed bulging corneal surface. Based on history, clinical examination and detailed ophthalmic examination the condition was diagnosed as Descemetocoele. Under general anesthesia the bird was treated surgically by corneal reconstruction with simple interrupted suture pattern using 8-0 PolyGlycolic Acid and post operatively treated with ophthcare KT eye drops and Higati ointment for a period of 10 days with administration of Inj. Enrofloxacin and Inj. Melonex for 3 days. Complete healing with return to corneal transparency after one month period of post management. Bird showed uneventful recovery.

Keywords: Cock, descemetocoele, corneal reconstruction

Introduction

Descemetocoele is a serious condition where a corneal ulcer has progressed to a point where only Descemet's membrane remains intact and the overlying corneal stroma and epithelium are absent. This condition is commonly encountered in small animal practice but is rare in poultry. It often arises as a complication of advanced corneal ulcers (Wilkie *et al.*, 1997) [7] or as a result of full-thickness corneal lacerations. Common underlying causes of corneal ulcers include trauma, bacterial, viral, or fungal infections, as well as exposure to high concentrations of ammonia vapours (> 100 ppm) (Koncicki *et al.* 2025) [4]. Descemetocoele constitutes an ocular emergency, and prompt surgical intervention is strongly recommended (Belknap EB, 2015) [1]. Surgical management typically involves careful closure of the corneal defect. This paper presents a case of a deep corneal ulcer in an Aseel bird, successfully managed through corneal suturing.

Case presentation

An 11-month-old cock weighing 3 kg was presented to Department of Veterinary Surgery and Radiology, NTR College of Veterinary Science, Gannavaram with a history of traumatic injury to Left eye one month ago and purulent discharges (Fig. 1). On clinical examination, a bulge on the cornea was observed. The Cock showed epiphora, severe blepharospasm and photophobia. Ophthalmic examination with slit lamp showed deep, crater-like defect in the cornea and conjunctival hyperemia.

Diagnosis & Treatment

Based on History, Clinical examination and Detailed ophthalmic examination, the condition was diagnosed as Descemetocoele. Hence the animal was treated by corneal wound repair under general anaesthesia.

General anaesthesia was induced with Ketamine @ 20 mg/kg b. wt. and Midazolam @ 1 mg/kg b.wt and maintained with 1.5-2% Isoflurane in 100% oxygen. The bird was controlled

in lateral recumbency with affected eye up. The surgical site was prepared aseptically, and the eye was draped. Eye was irrigated with Povidone iodine diluted to 0.5% in Normal saline.

The corneal defect was sutured with simple interrupted suture pattern using 8-0 polyglycolic acid suture material (Fig. 2). Post operatively Inj. Enrofloxacin @ 25 mg/Kg B.wt for 5 days and Inj. Meloxicam @ 1 mg/Kg B.wt for 3 days were administered and Higati (Gatifloxacin) ointment, ophthocare KT eye drops (four times a day) instilled daily for 10 days and observed for neovascularization and scarring.

Results and Discussion

Mild vascularisation and opacity were noticed at suture line, which resolved later and animal had an uneventful recovery. Corneal lacerations are commonly observed in dogs and cats but are considered rare in birds. Descemetocoele, a serious ophthalmic emergency, demands prompt diagnosis and surgical intervention to prevent complications (Belknap EB, 2015) [1]. Without timely treatment, the risk of infection and vision loss increases significantly. The primary objectives of treatment are to preserve vision and restore a satisfactory cosmetic appearance. If left untreated, a descemetocoele can progress to corneal perforation, endophthalmitis, glaucoma, and ultimately, loss of the eye. Iris prolapse through a corneal laceration can cause severe ocular pain and potentially lead to permanent vision loss.

In the present case, the clinical signs closely resembled those described by Mandell and Holt. Corneal sutures were carefully placed deep within the stroma, extending close to Descemet's membrane, without fully penetrating the cornea (Fig. 3), as the corneal endothelium is highly sensitive to trauma (Hollingsworth SR, 2003) [3]. Although general anesthesia was induced using ketamine hydrochloride, the associated increase in intraocular pressure may have contributed to additional suture tension (Collins *et al.*, 1995) [2]. Topical application of Proparacaine and Flurbiprofen eye drops provided effective analgesia and inflammation control. Notable corneal healing, accompanied by vascularization, was observed by the seventh postoperative day (Fig. 4).

The prognosis for vision and cosmetic outcome in cases of deep corneal laceration is generally fair to good, provided the corneal repair is performed promptly and intraocular structures remain largely intact. Potential complications include uveitis, endophthalmitis, panophthalmitis, anterior synechia, corneal pigmentation, and suture dehiscence. However, none of these complications were observed in the current case, aside from a mild corneal opacity, which subsequently resolved.



Fig 1: Cock with Descemetocoele (OS) on the day of presentation

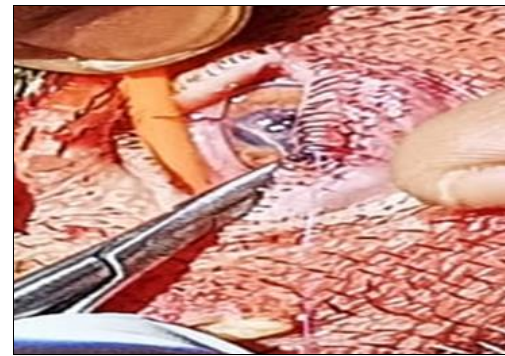


Fig 2: Corneal Reconstruction with simple interrupted suture pattern using PGA 8-0

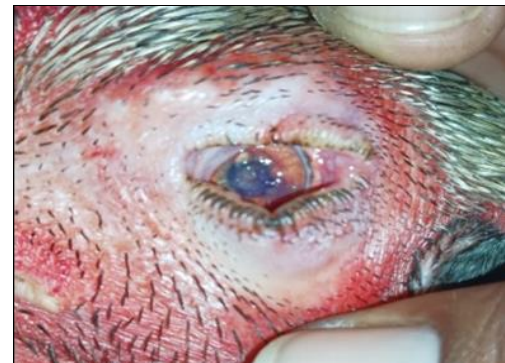


Fig 3: After Corneal Reconstruction

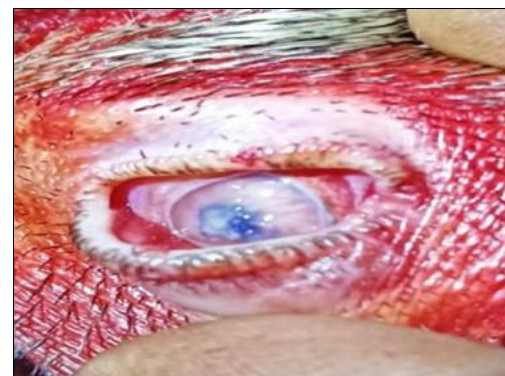


Fig 4: On 7th Post-operative day

Conclusion

The present case was presented with a history of traumatic injury to Left eye five days ago and bulging on cornea of affected eye which was diagnosed as Descemetocoele. Animal was treated by corneal reconstruction under general anaesthesia and the animal showed an uneventful recovery with no complications except for a mild opacity which resolved later.

Conflict of Interest

Not available

Financial Support

Not available

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