

RESTORATION OF SEVERE EYELID LACERATION IN A GRADED BUFFALO – A CASE REPORT

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Received: 30 January 2021

Accepted: 27 June 2023

ABSTRACT

Laceration of upper eyelid is a common affection of the eye of cattle and buffaloes. An eight-year-old graded buffalo was presented with a history of severe laceration of upper eyelid. The laceration led to extravasation of orbicularis oculi muscle with edema and swelling. The upper eyelid was repaired by three-layer repair under nerve blocks and local analgesia with 2% lignocaine HCl. The extravasated orbicularis oculi muscle was reconnected with the remanent using polyglactin No. 3-0. This was followed by repair of the intermediate subcutaneous layer and finally the superficial skin sutures were placed using nylon. The post-operative care included a course with antibiotics, analgesics, and local antibiotics to contain infection. The animal recovered without any complication ten days post-operative.

Keywords: Buffaloes, *Bubalus bubalis*, cattle, laceration, eyelid, restoration, lacerated wound, upper eye lid, three-layer repair, auriculo-palpebral nerve block, India

INTRODUCTION

The upper eyelid is mobile and protects the eyeball from trauma and dehiscence by spreading the tear film uniformly over the eyeball by consistent blinking. There are different reasons that may lead to the laceration of the upper eyelid, most common are trauma, injury during grazing, barbed wire fences, thorns, etc. (Bishnoi and Gahlot, 2004; Hendrix, 2013). The lacerations may vary in severity and extent depending on the tissue involved and the extent of the damage incurred. In many cases the upper eyelid suffers trauma, and the underlying muscles are exposed, in severe cases the eyelid is detached from the lateral canthus of the eye and hangs as a pedicle (Irby, 2004). Under such situations veterinary intervention to correct and repair the laceration is required. The eyelids are highly vascular tissue and laceration is trailed by edema, swelling and infection. It is important that suitable antibiotics and analgesics be rendered to prevent inflammation and infection. There are many approaches to correct lacerations of the upper eyelid, *viz.* two-layered and three-layered repair. The method is opted based on the extent of laceration and tissue involved. The current case highlights the utility of three-layer repair of eyelid

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laceration in a buffalo.

MATERIALS AND METHODS

An eight-year-old graded buffalo was presented at the farmers doorstep for laceration wound at the upper eyelid. The eyelid was found to be detached at the lateral canthus of the eye and was found to be hanging from a pedicle. The animal was calm and vital parameters were within normal range except temperature which was 103.4°F. The buffalo suffered severe laceration due to butting by neighbouring buffalo due overcrowding in the stall and competition for the offered concentrate. The animal was examined for various reflexes like the menace and palpebral reflexes (Wilkie, 1991). The buffalo was sedated with Xylazine HCl, and regional analgesia was obtained by auriculo-palpebral, supra-orbital and four point retrobulbar nerve blocks using 2% lignocaine HCl (Tyagi and Singh, 2012). The flap was instilled with 2% lignocaine HCl along with the wound edges. The devitalised tissue was debrided using sterile cotton gauge and washed with normal saline solution. The site was prepared for the surgery aseptically and three-layer repair was undertaken. The extravasated orbicularis oculi muscle was reconnected with the remanent using polyglactin No. 3-0. This was followed by repair of the intermediate subcutaneous layer and finally the superficial skin sutures were placed using nylon. To prevent the movement of the upper eyelid a cotton gauge was applied on the affected eye for a week (Tanwar and Gahlot, 2015). During the entire period Chloramphenicol applicaps were instilled in the affected eye three times a day. In order to prevent infection long action inj. enrofloxacin 20% was given along with injection meloxicam and injection pheniramine

maleate intramuscularly. In order to hasten healing multivitamin amino acid mix in the form of powder Cholymbi was administered orally for ten days.

RESULT AND DISCUSSION

The buffalo was monitored during the entire period of treatment. She was segregated from rest of the herd and received feed and fodder separately. On day ten the superficial nylon sutures were removed and the upper eyelid was found to be completely healed and attached to the skin. The upper eyelid was functional and reflex to light and touch was normal. There was no complication such as entropion and ectropion.

Laceration of the upper eye lid has been described in many species of domestic animals. Majority of the reports are in the dromedary camels (Siddiqui and Telfah, 2010; Jena *et al.*, 2015). The etiology can be varied including trauma, over crowing, barbed wire fences, thorns, nails etc (Balagopalan *et al.*, 2016). The upper eyelid protects the delicate eyeball from external material and prevent dehiscence. The skin of the upper eye lid is pliable and mobile in cattle and buffaloes. On the margin of the upper eyelid specialised row of hairs called cilia are present. Glands of Moll are modified sweat glands that open into eyelid margin at the base of the cilia. The meibomian glands present in the upper eye lid provides lubrication and moistens the eyeball. Thus, eyelids are complicatedly built and play a vital role in the maintenance of the nourishment and positioning of the eyeball (Maggs, 2008).

There are two school of thought for the surgical repair in case of laceration to the upper eyelid, a school of thought recommends two stage suturing. The two-layered suturing involves the



Figure 1. Laceration of the upper eyelid with protrusion of the orbicularis oculi muscle.



Figure 2. Eyelid repair by three-layer repair, nylon sutures used to suture skin for juxtapposition.



Figure 3. Post-operative care of upper eye lid by cotton gauge.



Figure 4. Recovery and functional upper eyelid.

suture of first layer involving the palpebral layer followed by the suturing of muscle and skin in unison (Kumar *et al.*, 2016). A second school of thought recommends a three-layered suturing; in which, deep layer involving fibrous tarsal and orbicularis oculi are sutured, intermediate layer involving subcutaneous tissue and external later involving the skin has been described by Irby, 2004; Divine and Anderson, 1982. Both the methods have been utilized to repair lacerations of the upper eyelid in various species. The critical challenge in restoration of function in the upper eyelid is infection, irritation of the cornea due to suturing material and non-opposition of the sutured layers (Shammi *et al.*, 2019).

In the current case, three-layer suturing was undertaken considering the complete extravasation of the orbicularis oculi muscle and hanging of the upper eyelid as a pedicle. The involvement and traumatic break of the orbicularis muscle needs strengthening and stabilization hence the extravasated layer was sutured separately (Plummer, 2005). Chances of infection are more in ocular interventions owing to high moisture and delicate tissue. The coverage of antibiotic along with analgesics and antihistaminic ensure prompt healing and prevent edema and swelling at the site. Suturing is the most important aspect in the repair of lacerated wound at the upper eyelid, for the efficient juxtaposition of the tissue the local infiltration of 2% lignocaine HCl was undertaken above the suture line. This prevented distortion of the wound edges and facilitated efficient juxtaposition.

The current case highlights the utility of three-layer suturing technique for the repair of severe laceration of upper eye lid supplement with antibiotic therapy, analgesics, and local infection management. The method has yielded encouraging

results by complete restoration of the reflexes of the upper eyelid.

ACKNOWLEDGEMENT

The authors thank District Deputy Commissioner of Animal Husbandry, Nandurbar for the facilities provided to treat the case.

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