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Successful cosmetic outcome of eyelid lacerations in a young male Marwari horse

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Abstract

A 2-year-old Marwari horse presented with right-side eyelid laceration along with lateral canthus injury after 2 hours of accident. Because of animals' temperament, laceration was repaired surgically under general anaesthesia. Gross appearance i.e. near to normal was reported after 20 days of surgery.

Keywords: Cosmetic outcome, eyelid lacerations, Marwari horse

1. Introduction

Traumatic injuries are common in equine due to their agile nature (Brooke, 2006) [1]. Majority of adenexa and ocular pathology in equines are eye lid laceration, puncta blockage, corneal ulcers and recurrent uveitis therefore encountered frequently (Plumer, 2005) [4]. Eyelid (especially upper eyelid) helps in eyeball protection through its physical activity and hence it should be well functional. A non functional upper eyelid is immobile and not able to spread tear film over the cornea which further imparts in corneal diseases (Brooks and Matthews, 2007) [2]. Case if presented with complete laceration must be transferred to surgical facility. Prompt treatment is required before further ocular complications. Actually delayed cases are problematic for surgical repair and hence desired recovery cannot be achieved. Moreover irregular eyelid margins are responsible for chronic eye irritation.

2. Case presentation findings and initial care

A 2-year old male horse (body wight; 360 kg) having history of trauma to right eye (Fig.1) was presented to GADVASU-clinic (in late evening), approximately two hours after diseases occurrence. Mild fresh bleeding from injured (lacerated) tissue was noticed for timing of injury. Usual feeding and walking were observed. Case has been examined and diagnosed as upper eye-lid laceration along with lateral canthus injury. Ophthalmic examination revealed that globe was functional having normal Menace and Pupillary light reflex. Initially (till surgical attempt), eye was treated with collyria, topical eye drops and parentral drug administration.

Table 1: Medicines used preoperatively and postoperatively

Initial medicine used	Comments
1. Eye collyria with boric acid solution	2% boric acid Solution (2g/200ml rose water) was prepared to remove secretions, dirt and dust from the conjunctival sac.
2. Topical ocular drugs	a. Flurbiprofen (0.03% W/V): two drops, once a day for three days. b. Gatifloxacin (0.3% W/V): Two drops ever eight hours were used for 7 days. c. Carboxymethyl cellulose (0.5%): one drop every 4 hours for seven days.
3. Parentral medication	a. Ceftriaxone and tazobactam: 4.5 g (IV), twice a day for 5 days b. Flunixin meglumine: (1.1 mg/kg), IV for three days c. Tetanus toxoid (5 ml), IM, single injection

3. Anaesthesia and surgical management

Animal was not cooperating for regional block and because of such hyperactive temperament; patient has been selected for general anaesthesia. Blood picture revealed healthy parameters. Animal was kept off-feed before general anaesthesia. The equine was pre-anaesthetized with a mixture of inj. Xylazine @ 1.1 mg/Kg and inj. butorphanol @ 0.02

mg/kg, IV in standing position. Once, the equine was head down upto knees, the general anaesthesia was induced with a mixture of inj. Ketamine hcl @2.2mg/Kg and inj. Diazepam @ 0.02 mg/Kg, IV. The equine lied down within 2 minutes and was intubated (ID. 20). The anesthesia was further maintained on Isoflurane in 100% oxygen. (Fig.2).

Table 2: Anaesthetic protocol followed in this case

Agent	Purpose	Dose
Xylazine (class: alpha-2 agonist)	For premedication Effects: Analgesia, muscle relaxation and sedation	1.1 mg/kg (intravenous route)
Butorphanol (class:mixed opioid agent)	For premedication Effects: Analgesia and sedation	0.02 mg/kg (intravenous route)
Ketamine (class: dissociative anaesthesia)	For induction Effects: catalepsy, loss of audiovisual reflexes	2.2 mg/Kg (intravenous route)
Diazepam (class: Benzodiazepam anaesthesia)	For induction Effects: Muscle relaxation, amnesia, reversible unconsciousness.	0.02 mg/Kg (intravenous route)
Isoflurane (class: Inhalant anaesthesia)	For maintenance Effects: General anaesthesia (analgesia, muscle relaxation, amnesia and unconsciousness)	1-2% was found satisfactory for maintenance in present case.

Note: Xylazine and Butorphanol were given at the same time for premedication whereas both Ketamine and Diazepam were mixed in a syringe and injected for induction. After induction ET was introduced and animal was taken on inhalant anaesthesia

Surgical site was prepared aseptically and lacerated margins were freshened using B.P. blade no. eleven. Laceration was sutured in two layers (Fig.3). Absorbable suture material (Vicryl, 3-0) was used for suturing of conjunctival tearing whereas skin was aligned to achieve cosmetic appearance using non-absorbable suture (nylon, zero number). Animal was recovered successfully from general anaesthesia without any complications.

4. Results and Discussion

Because of good blood supply to eyelids (Schaer, 2007) ^[5], laceration was repaired successfully and cosmetically looks near to normal immediately after surgery. Topical medications (eye drops) along with parental drugs were recommended postoperatively (Table: 1). Successful outcomes with anatomically normal gross appearance were reported after 22 days of surgery. Verma *et al.*, (2018) ^[6] also repaired lower eyelid laceration with successful recovery within 10-days. However sutures were removed after 2-weeks of surgery. Proper apposition is mandatory to prevent keratitis in postoperative days (Lavach *et al.*, 1984) ^[3] and similarly in present case also proper alignment has been done under general anaesthesia. Affected eyelid, cornea and retina were evaluated for mobility, ulcer and vision respectively (Fig.4). Repaired eyelid showed proper mobile, cornea was normal and positive menace and PLR were noticed. Eyelids should be well reapposed otherwise vision impairment can occur and hence it is very important affection (Schaer, 2007) ^[5] similarly present case has been taken for surgery and repaired successfully. In present case there was no any postoperative complication but Brooks (2006) ^[1] stated that complications usually occur after surgical eyelid repair. The study reports the successful repair of multiple eyelid lacerations in a young male horse under general anaesthesia.



Fig 1: Eyelid laceration (upper) with lateral canthus injury



Fig 2: Intubation and maintenance of general anaesthesia



Fig 3: Surgically repaired eyelid and lateral canthus



Fig 4: Cosmetic appearance of surgically repaired eyelid after 22 days

5. References

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