

A Case of a Dog Bite Causing Avulsion of the Upper Eyelid

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Abstract: We are presenting a rare case of a 71 year old male patient, who reported to the Casualty unit for a bite by a stray dog in the ocular region. The patient was on anticoagulants and so bled profusely. The right eye was normal but the left eye showed avulsion of the upper eyelid along with a full thickness cut lacerated wound of the medial and lateral canthi. The visual acuity was reduced to Finger Counting at 1 meter. The extraocular movements were restricted. The anterior segment appeared to be normal. There was massive subconjunctival haemorrhage along with periorbital oedema. The pupil was semi-dilated and fixed. The nasolacrimal passage was normal. Patient was given anti rabies vaccine and immunoglobulins and also primary suturing of the wound was done. An open globe injury was ruled out by B scan and so patient was managed conservatively with good outcome. After one month of treatment with the conservative management the periorbital oedema decreased, the extraocular movements were restored and the visual acuity improved.

Keywords: Dog bite, eyelid laceration, eyelid trauma, anti-rabies vaccine, lid repair

1. Introduction

Ocular dog bites though statistically uncommon, occur most frequently in children and are associated with severe ocular adnexal injury. In one study, of the 16 victims, two thirds were under 10 and over half were under 5 years of age [1]. Dog bite injuries to the eye may involve various structures right from eyelids to open globe injuries to orbital fractures. Dog bite injuries to the eye usually involve the eyelid. Injuries involving the medial aspect of the eyelid have a risk to damage the nasolacrimal duct. There is a high risk of secondary infection and also rabies. Dog bite injuries over the head, face and neck are classified as class III injuries carrying highest risk of rabies. Hydrophobia and aerophobia are pathognomic features of rabies. Dog bite injuries are more common in western countries, but the incidence of rabies is less as pets are vaccinated. In India, among 25 million dog population, majority are not protected against rabies.

2. Case History

A 71 year old male patient came to the hospital with a history of dog bite by a stray dog causing trauma to the left eye. On Ocular examination, right eye was normal. Visual acuity in left eye was finger counting at one meter and in right eye was 6/6. Intraocular pressure was digitally normal. In the left eye, patient had periorbital oedema with ecchymosis of the lids along with an avulsion of the upper eyelid dividing the tarsal plate at the junction of medial one third and lateral two third and a full thickness lacerated wound over the medial (3cm×0.5 cm×0.5cm) and lateral canthus (2cm× 0.5cm×0.5cm).

There was a massive subconjunctival haemorrhage and chemosis over the bulbar conjunctiva. Pupil was semi-dilated and fixed. The nasolacrimal duct appeared to be normal. Extraocular movements were restricted due to periorbital

oedema and blepharospasm. There was severe blood loss as the patient was on oral anticoagulants after Coronary artery bypass surgery which was done 7 years back.

The wound was thoroughly washed with normal saline. Locally immunoglobulins were injected at the wound site along the lacerated margins. Left upper eyelid primary suturing was done along with suturing of medial and lateral canthi wounds. Two stay sutures were taken at the junction of medial one third and lateral two third of the upper eyelid with absorbable 6-0 vicryl. The knots were placed on the skin surface. Medial and the lateral canthi lacerations were also repaired by four and three interrupted sutures respectively taken with 6-0 ethilon (Image 1). He was given an active and passive management for rabies along with injectable antibiotics, analgesics and tetanus toxoid. He was also given whole blood transfusion because of the severe blood loss.



Image 1: Immediate image of the patient after suturing

An open globe injury was ruled out by a normal B Scan and so conservative management was carried out. Non Enhanced CT facial bone showed soft tissue swelling in the orbit of the left eye. The stay sutures were removed after 7 days. At 1 week follow up the vision improved to 6/24 (partial), the lid oedema and conjunctival chemosis also reduced and there was resolving subconjunctival haemorrhage. The ethilon sutures taken over the medial and lateral canthi were removed on 10th day and there was good apposition of the wound (Image 2).



Image 2: Picture of the patient after one week follow up

Two weeks post operatively, his vision improved further to 6/9 (partial). Extraocular movements were now full and free but mild ptosis remained (Image 3). At one month follow up the vision was stable and the ptosis further reduced (Image 4). Recovery was uneventful and patient had an acceptable scar.



Image 3: Image of the patient at two weeks follow up

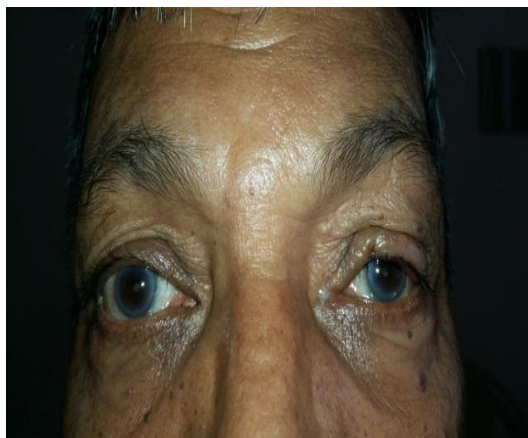


Image 4: Image of patient at one month follow up

3. Discussion

Eyelids are complex structures and discovery of a previously unidentified injury can cause serious difficulties during the repair [2]. When a residual defect requires further interventions under anaesthesia, this not only adds to distress but also increases the likelihood of a poor long term result. In the past these injuries were left open and repaired after an interval but primary closure is now favoured because of better cosmetic results. Upper lid repairs are particularly demanding technically since the tarsal plate is wider, the cornea lies just underneath, and involvement of the levator muscles presents a risk of ptosis. The strongest structure in the lid is the tarsal plate, and the key to good surgical repair is restoration of its integrity.

In a study done by Gunduz et.al, they analysed cases of dog and cat bites that presented to their university, over the last five years. Out of the total cases, one hundred and sixteen patients were bitten by dogs and 51.9% of the bites were on an upper extremity. Hyperemia, scratch and laceration were the most frequent diagnoses after injury. The length of the hospital stay was between 1-22 days and calculated as a mean 7.3 ± 5.8 days [3].

Danish Imran et.al, reported a case of a 2 year old girl with a dog bite involving the lateral part of the nasion and left lower eyelid just below the medial canthus. After a thorough washout of the lacerated area, the wound was repaired and on follow up the patient had a good cosmetic outcome [4].

A variety of complications may occur in patients, with eyelid injuries secondary to dog bite like epiphora and upper lid ptosis commonly. Others include prominent scar, wound dehiscence, and nasolacrimal duct obstruction.

4. Conclusion

Ocular involvement in dog bites are a neglected public health issue in developing countries. Prompt management with primary eyelid repair along with topical and systemic antibiotics, anti-rabies serum and immunoglobulins injections results in good outcome in these patients with minimal scarring.

5. Acknowledgement

None

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