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CAUSES AND PATTERN OF EYELID INJURIES AMONG PATIENTS ATTENDING THE OPHTHALMOLOGY DEPARTMENT OF A TERTIARY CARE CENTER IN IMPHAL

Ophthalmology

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ABSTRACT

Background: Ocular trauma is one of the major causes of ophthalmic morbidity and mortality. Timely and meticulous management of eyelid injuries gives the best functional as well as cosmetic outcomes. **Objectives:** To evaluate the causes, sites and clinical presentation of eyelid injuries and to assess complications resulting from lid injuries. **Methods:** 150 eyes with lid injuries were studied for a period of 22 months. **Results:** Penetrating trauma was the commonest cause of lid injuries (61.3%), with road traffic accidents (RTAs) as the major mode of injury. Upper lid was more commonly affected than lower lid. Majority presented with lid contusions and lacerations. Unsightly scar was found to be the commonest complication following eyelid injury (32%). **Conclusions:** Eyelid injuries were common in the 2nd to 4th decade of age with male preponderance. Penetrating trauma was the major etiology, mostly affecting the upper lid. Majority of patients presented with lid contusions, lacerations and subconjunctival haemorrhage. Wound scarring was the commonest complication.

KEYWORDS

eyelid injuries, eyelid trauma, complications of lid injuries

INTRODUCTION

Eyelids are protective structures acting as curtains in front of our eyes and help in maintaining anatomical and functional integrity of eyeballs.[1] Eyelid injuries can be due to blunt trauma or penetrating trauma.[2] Several modes on injury have been identified, including RTAs, assault, fall, occupational injuries, etc.[3,4] Eyelids can sustain contusions, abrasions, avulsions, punctures, lacerations. Its treatment depends on the depth, width and location of the injury. Repair should be done within 48-72 hours without great impact on functional and aesthetic outcome.[5] Adequate and timely management is important for satisfactory results.

Objectives

To evaluate the causes, sites and clinical presentation of eyelid injuries and to assess the complications resulting from eyelid injuries

MATERIALS AND METHODS

This longitudinal study was conducted in the Department of Ophthalmology, Regional Institute of Medical Sciences (RIMS), Imphal, Manipur for a period of 22 months, w.e.f. January 2021 to October 2022 on 150 patients with eyelid injuries.

Inclusion Criteria

Patients with any form of eyelid injury attending the Ophthalmology department, RIMS, Imphal during the study period

Exclusion Criteria

Patients with pre-existing eyelid deformity, with concurrent medical / psychiatric illness

Complete history was obtained from each participant, with confidentiality being maintained.

A detailed general physical examination and ophthalmologic examination was performed on each patient, which included visual acuity assessment using Snellen chart, anterior segment examination using torch light and slit lamp biomicroscope, intraocular pressure with Schiotz tonometer, fundus examination, gonioscopy.

Patients were followed up at 2 weeks, 1 month and 6 months interval.

Data analysis was done using IBM SPSS software version 21.0 (IBM Inc. Armonk, NY:IBM Corp.). Microsoft Word and Microsoft Excel were used to generate tables, pie charts.

RESULTS

Out of 150 participants, the incidence of eyelid injuries ranked highest in the age group 16-45 years (61.33%).

Table 1 : Age

Age group	Frequency	Percentage
Upto 15 years	31	20.67
16-30 years	48	32
31-45 years	44	29.33
46-60 years	18	12
>60 years	9	6
Total	150	100

Males constituted more than two-thirds of the participants.

Table 2 : Gender Distribution

Gender	Frequency	Percentage
Male	110	73
Female	40	27
Total	150	100

Majority of the patients belonged to rural areas (65%).

Table 3 : Geographical Location

	Frequency	Percentage
Rural	98	65
Urban	52	35
Total	150	100

Penetrating trauma was found to be the commonest cause of injury (61.3%).

Table 4 : Causes Of Eyelid Injury

	Frequency	Percentage
Blunt trauma	58	39.7
Penetrating trauma	92	61.3
Total	150	100

RTAs (31.3%) contributed the highest among the various modes of injury, followed by domestic incidents (24%), workplace-related injuries(23.3%).

Table 5 : Mode Of Injury

	Frequency	Percentage
RTA	47	31.3
Assault	15	10.0

Accidental domestic	36	24.0
Workplace-related	35	23.3
Animal-related	10	6.7
Play-related	7	4.7
Total	150	100

74% of the patients presented to the hospital within 24 hours of injury.

Table 6 : Reporting Time Of Injury

	Frequency	Percentage
Within 24 hours	111	74
Within 72 hours	31	20
Within 7 days	4	2.7
Within 15 days	4	2.7
Total	150	100

Right eye and left eye involvement was found to be almost similar, 48.7% and 51.3% respectively, whereas both eye involvement was not encountered in the study.

Table 7 : Eye Involvement

	Frequency	Percentage
Left eye	77	51.3
Right eye	73	48.7
Total	150	100

Upper lid (48.7%) was more commonly involved than the lower lid (36%). Both upper and lower lids were involved in the remaining cases (15.3%).

Table 8 : Pattern Of Lid Involvement / Site Of Injury

	Frequency	Percentage
Upper lid	73	48.7
Lower lid	54	36
Both	23	15.3
Total	150	100

In this study, 92 of them sustained eyelid lacerations, of which partial thickness lacderations accounted for almost half (43). 7 patients presented with canalicular tear.

Table 9 : Morphology Of Injury

	Frequency	Percentage
Partial thickness laceration	43	46.73
Full thickness laceration without tissue loss	24	26.08
Full thickness laceration with tissue loss	18	19.56
Canalicular tear	7	7.63
Total	150	100

Subconjunctival haemorrhage (61.3%) was the commonest associated ocular finding, followed by corneoscleral lacerations (24%).

Table 10 : Other Associated Ocular Findings

	Frequency
SCH	92
Conjunctival tear	16
Corneoscleral laceration	36
Hyphaema	20
Iridocyclitis	14
Iridodialysis	2
Traumatic mydriasis	17
Cataract	2
Subluxated lens	2
Orbital wall fracture	14
Vitreous haemorrhage	4
Retinal detachment	6

Out of the total 150 cases, 31 encountered complications following eyelid injury, unsightly scar being the commonest (10), followed by infections (7).

Table 11 : Complications

	Frequency	Percentage
Unsightly scar	10	32.0
Infections/abscess	7	23.0
Cicatricial ectropion	5	16.0
Lid notching	5	16.0
Epiphora	4	13.0
Total	31	100

DISCUSSION

Out of the total 150 cases reported in this study, the incidence of lid injuries was more common in the economically productive age-group, i.e. 16-45 years of age (92, 61.33%), comparable with a study conducted by Chaudhary A et al[4] who found 19-35 year age-group to be the most commonly affected. This can be due to the fact that individuals in the said age-group are more active and occupationally more involved, exposing to outdoor, social or work-related activities, making them more vulnerable to sustaining ocular injuries.

Male preponderance (73%) over females (27%) in this study was comparable with a study conducted by Krishna DM et al[3] who found 67.92% cases to be males compared to females (32.08%). This could be due to more occupational exposure, alcohol use, particiupation in dangerous sports and hobbies, and risk-taking behaviour.

Majority of the patients were rural dwellers (98, 65%) according to the current study. The same findings were stated by a study conducted by Syal E et al[6] which showed 74% of the participants to be rural residents. More involvement of people from rural areas could be due to poor socio-economic background, illiteracy, ignorance, exposure to occupation without precautionary measures.

The current study showed that penetrating trauma caused by sharps (like broken glasses, stick, stone, broken spectacles etc) was the commonest etiology causing lid injuries (61.3%), and blunt trauma (fingers, fist, fall, hit on ground) accounted for 38.7% of the cases. Similar results were found in a study by Chaudhary A et al[4]. But these results were in contrast with other studies conducted by Herzum H et al[7], Naji M et al[8], which found blunt trauma as the most common cause of lid injury.

This study found RTA (47, 31.3%) as the major mdoe of injury, followed by domestic incidents predominantly falls (36, 24%), workplace-related (35, 23.3%), assault (15, 10%) which was in correspondance with a study conducted by Pandharpurakr et al[9] who also found RTA as the commonest mode of injury. This could be due to rush driving, violation of traffic rules, not wearing helmets while driving, alcohol-related. However, Anuradha et al[10] in their study concluded that accidental fall (36.7%) and assault (23.33%) were the major modes of eyelid injuries.

According to the current study, most of the patients reported to hospital within 24 hours of injury (111, 74%), and 20% (31) of them within 72 hours of injury. Elhesy AE et al[11] in their study reported that 69.5% of the cases presented to hospital within 24 hours of injury.

This study showed almost similar involvement of right eye and left eye (48.7% and 51.3% respectively), which was in line with Anuradha A et al[10] study showing involvement of 53% right eye and 47% left eye.

In the present study, upper lid (73, 48.7%) was more commonly involved in trauma compared to lower lid (54, 36%). Tabatabaei A et al[2] and Herzum H et al[7] also encountered upper lid more commonly involved than lower lid or both.

Out of the total 150 cases, 92 suffered lid lacerations out of which, the most common morphology was partial thickness laceration of eyelids, constituting almost half of them (43 cases). This was in agreement with a study conducted by Krishna DM et al[3] where the same morphology was found in 60.37% of cases.

In this study, conjunctiva was the most commonly involved structure with subconjunctival haemorrhage (SCH) presenting in 92 cases and conjunctival tear in 16 cases.This was in consistent with a study done by Krishna DM et al[3] in which 22 cases (20.75%) showed conjunctival involvement. This study also showed involvement of other ocular structures in the form of corneoscleral laceration (36, 24%), hyphaema (20, 13.3%), traumatic mydriasis (17, 11.3%), iris involvement (iridiocyclitis/iridodialysis) (16, 10.7%), orbital fracture (14, 9.3%), posterior segment involvement (vitreous haemlorrhage/retinal detachment) (10, 6.7%). Lens was least commonly involved (4, 2.7%).

31 patients (20.66%) developed complications following eyelid trauma, the most common being unsightly scar found in 10 of them, followed by infections in 7 cases, cicatricial ectropion (5), lid notching (5) and 4 patients complained of epiphora following eyelid trauma. Krishna DM et al[3] found 5.66% of cases presenting with unsightly

scar later, which was noted as the most common complication following eyelid injury.

CONCLUSIONS

Eyelid injuries are more common in the 2nd to 4th decade of age. Males are more commonly affected than females. Mostly the upper eyelid was affected, with penetrating trauma as the commonest cause of eyelid injury, compared to blunt trauma. RTAs were the commonest mode of injury. Majority presented with eyelid contusions, lacerations and subconjunctival haemorrhage. Wound scarring and infections were the common complications encountered. Timely and meticulous management of eyelid injuries gives the best outcome, functionally as well as cosmetically. So, timely reporting to health-care center is of utmost importance to avoid undesired complications.

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