



A CLINICAL STUDY ON OCULAR INJURIES IN PATIENTS WITH MAJOR TRAUMA

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ABSTRACT

Aim: To study the epidemiology of ocular injuries in patients with major trauma. **Methods:** Case reports of major trauma were collected during my duty period in government general hospital, kurnool. Detailed history was taken and importance was given for patient stabilization and a multidisciplinary approach was practiced. Detailed ophthalmological examination was carried out. Imaging was done wherever necessary. **Results:** A total of 165 cases were examined. Among them, 50 cases had associated ocular injuries. These 50 cases were aged in between 15 to 58 years of which 32 were males and 18 were females. Cases presented with a wide variety of clinical findings along with diminution of vision. Among them, subconjunctival hemorrhage (30%), racoon eyes (14%), lid lacerations (08%), conjunctival tears (12%), vitreous hemorrhages (12%), corneal tear with iris prolapse were (08%), lens subluxations (06%), traumatic ischemic optic neuropathy (08%), eyeball rupture (02%). **Conclusion:** The incidence of ocular injuries in patients with major trauma is low, but considerable association was found between eye injuries and facial fractures. Young adults have the highest incidence of ocular injury. RTAs are the leading cause of ocular injuries in patients with major trauma. It is vital that all patients with major trauma are examined specifically for an ocular injury.

KEYWORDS : Ocular Injury, Trauma, Road Traffic Accidents, Facial Fractures, Raccoon Eye, Sub-conjunctival Hemorrhage.

INTRODUCTION

The incidence of ocular injuries with major trauma are seen in association with major fractures. Road traffic accidents are the leading cause of ocular injuries with major trauma¹. It is vital that all patients with major trauma are examined specifically for any ocular injuries. Eye injuries may be associated with facial injuries: in patients with periorbital hematomas and swelling, it may not be possible to do thorough ocular examination at the initial visit². We should try to check for eyeball integrity and pupil reactions in cases there is extreme edema and patient's co-operation is compromised.

METHODOLOGY

A case study was conducted on 165 patients with major trauma during my duty period in the department of ophthalmology, government general hospital, Kurnool from august 2021 to July 2022. Of 165 patients with major trauma, 50 cases were included in the study. Informed consent was obtained from each patient or the guardian of the patient. Data was collected regarding age, sex, address, presenting vision, duration of decreased vision, type of intervention (medical or surgical), follow-ups, complications and final visual outcome. After the stabilization of the patient's vitals, visual acuity was recorded at bed side. Detailed history regarding the mode of injury, time and duration from the time of injury were taken.

Careful examination of the anterior segment was performed by torch examination and slit lamp wherever possible. Posterior segment was examined with direct ophthalmoscopy for bedridden patients and indirect ophthalmoscopy was done accordingly. Slit lamp photograph, fundus photograph, B-scan, and X-ray were done as per need. Data sheet also contained type of first surgical intervention and subsequent surgical intervention if needed. CT brain and orbits, MRI brain and orbits were advised and verified wherever necessary.

RESULTS**Table No 1: Types Of Injuries In Patients With Major Trauma**

Type Of Injury	No Of Cases
Sub Conjunctival Hemorrhage	15
Lid Lacerations	11
Conjunctival Tears	06
Vitreous Hemorrhages	06
Corneal Tear With Iris Prolapse	04
Lens Subluxation	03
Traumatic Ischemic Optic Neuropathy	04
Globe Rupture	01

Table No 2: Causes Of Ocular Injuries In Patients With Major Trauma.

Cause Of Ocular Injury In Patients With Major Trauma	No Of Patients
Road Traffic Accidents	21
Assaults	13
Non Accidental Injuries	9
Others	7

Table No 3: Percentages Of Visual Impairment In Patients With Major Trauma.

Visual Impairment	Percentage
Normal Vision	56%
Mild Visual Impairment	30%
Significant Vision Loss	14%

DISCUSSION:

In this study, proportion of patients with major trauma have associated ocular injuries (30.3%). Cases presented with a wide variety of clinical findings along with diminution of vision. Among them, subconjunctival hemorrhage (30%), lid lacerations (22%), conjunctival tears (12%), vitreous hemorrhages (12%), corneal tear with iris prolapse were (08%), lens subluxations (06%), traumatic ischemic optic neuropathy (08%), eyeball rupture (02%). We recognize that this study may underestimate the incidence of eye injuries, because relatively minor eye injuries may not have been reported or may even be missed in patients with major, life-threatening trauma. Facial fractures are associated with ocular injury, although most patients with an eye injury do not have a facial fracture. Maxilla fractures are most common, but the proportion of eye injuries associated with each fracture was similar. The optic nerve was the most frequently injured of the cranial nerves associated with the eye. This is important, as optic nerve injuries carry a poor visual prognosis. A marked association between orbital fracture and optic nerve injuries in patients with major trauma has been reported previously.

CONCLUSION:

Patient with major trauma should first be stabilized. Once the patient is stabilized, prompt intervention of ocular injuries should be done. Ocular injuries will be seen most commonly in association with facial and head injuries. In this study, the most common symptom is blurring of vision, the most common sign is subconjunctival hemorrhage, and the most common findings causing poor final visual outcome were, corneal tears, lens subluxations, vitreous hemorrhages. Posterior-segment involvement leads to poor vision at presentation and poor final visual outcome. In major trauma, first priority should be

given to save the life of the patient and further the priority is given to save the vision of the patient.

REFERENCES

1. Négrel AD, Thylefors B. The global impact of eye injuries. *Ophthalmic Epidemiol.* 1998 Sep;5(3):143-69. doi: 10.1076/oep.5.3.143.8364. PMID: 9805347.
2. Guly CM, Guly HR, Bouamra O, Gray RH, Lecky FE. Ocular injuries in patients with major trauma. *Emerg Med J.* 2006 Dec;23(12):915-7. doi: 10.1136/emj.2006.038562. PMID: 17130597; PMCID: PMC2564251.
3. Goyal S, Rettiganti M, Gupta P. Factors associated with motor vehicle-related eye injuries presenting to the US emergency departments. *Eye (Lond).* 2020;34(4):755-762. doi:10.1038/s41433-019-0588-7
4. Mahapatra SK, Malhotra K, Mendke RG. A 3-year prospective study on ocular injuries with tennis or cricket ball while playing cricket: A case series. *Indian J Ophthalmol.* 2018 Feb;66(2):256-261. doi: 10.4103/ijo.IJO_458_17. PMID: 29380770; PMCID: PMC5819107
5. Kwon, Jw., Choi, M.Y. & Bae, J.M. Incidence and seasonality of major ocular trauma: a nationwide population-based study. *Sci Rep* 10, 10020 (2020).