

Pattern of ocular trauma in western Rajasthan

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Introduction

Ocular trauma is a leading cause of acquired unilateral blindness. Ocular injuries account for approximately 8-14% of total injuries and the major cause for emergency hospitalisation. The visual impairment caused by ocular injuries adds to the social, emotional, economical and psychological impact on the sufferers. The significance of the problem is compounded by the fact that most of the injuries are preventable, thus making it social and medical concern. The purpose of this study was to identify the risk factors, demographic and clinical profile and prognostic factors in the management of ocular injuries in a tertiary care centre in western Rajasthan.

Materials and Methods

A retrospective study was conducted by the authors from April 2011-March 2012 on 404 patients with ocular trauma, presented to the eye emergency services in the Global Hospital Institute of ophthalmology, Abu Road. Specially designed protocol was used to record the information based on the demographic data, nature and cause of injury, time interval between the time of injury and time of presentation along

with any treatment received was recorded.

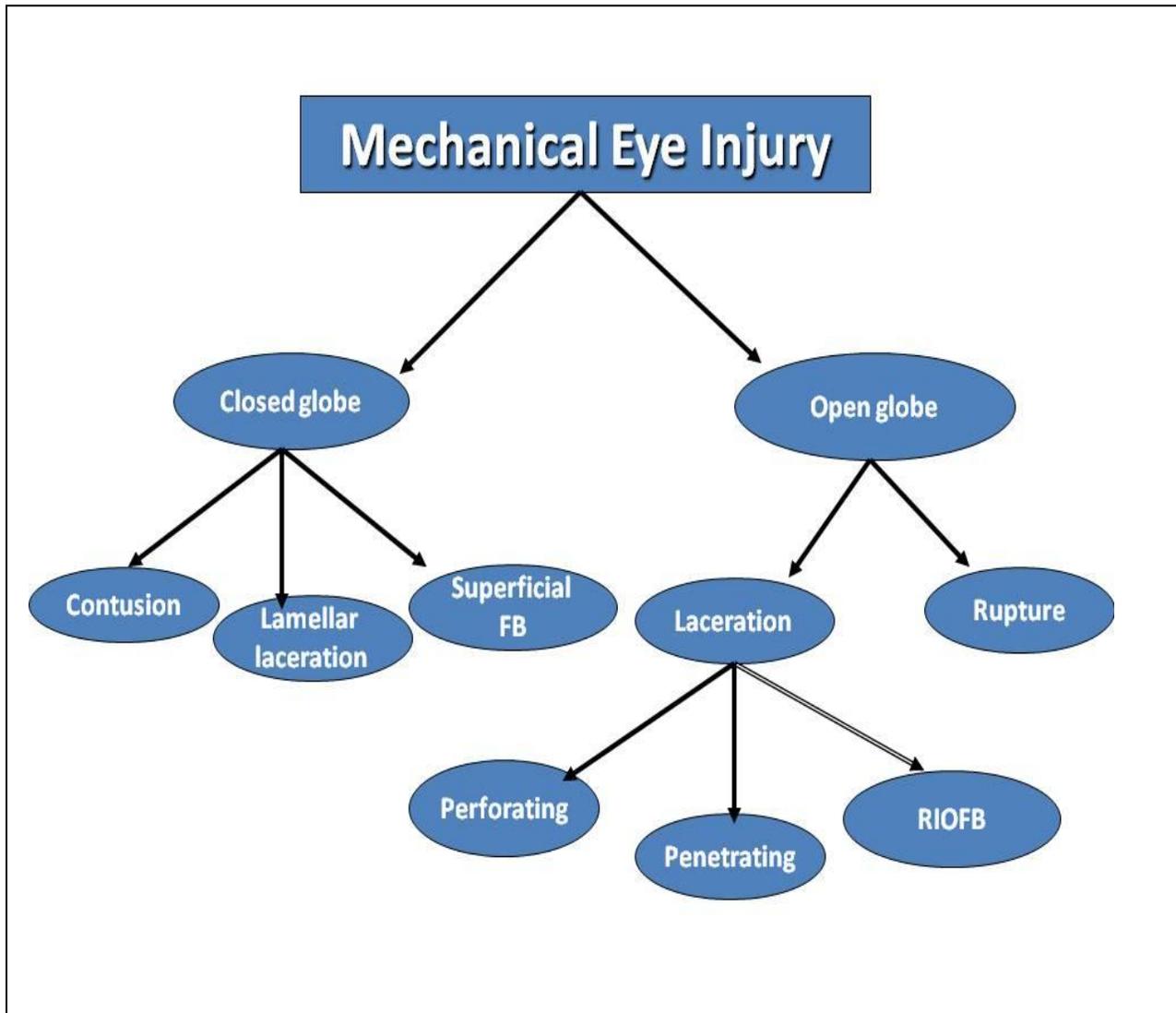
Data underwent descriptive analysis and diagnosis classification according to the Ocular Trauma Classification

Ocular Traumatology Terms

(The Ocular Trauma Classification Group; AJO 1997; 123:820-831)

- **Eye Wall** - Sclera & cornea
- **Closed Globe** - The eye wall (corneosclera) does not have a full thickness wound
- **Open Globe**- The eye wall (corneoscleral) has full thickness wound
- **Rupture** - Full thickness wound caused by a blunt object
- **Laceration**- Full thickness wound caused by a sharp object
- **Penetrating**- Single, full thickness wound of eye wall, usually caused by a sharp object
- **IOFB injury** - The retained foreign object causes a single entrance wound

- **Perforating injury** -Two full thickness wounds :entrance & exit of the eye wall usually caused by a missile
- **Superficial FB** - Projectile FB lodged into the conjunctiva &/or eye wall, does not result in full thickness eye wall defect.
- Record was made on detailed history, visual acuity, anterior segment and fundus finding along with recording of intraocular pressure and gonioscopy where possible in closed globe



injuries. The final best corrected visual acuity was recorded during follow up. Details of surgical intervention were also noted.

Demographic Analysis

Age in years	Number	%
0-20	122	30.2
21-40	80	22.1
41-60	89	19.8
61-80	113	27.9

Sex

Male	287	71%
Female	117	29%

Mean age of injury was 38.85 years, ranging from 3 months to 80 years of age. Closed globe injuries were 258 while open globe injuries were 124.

Nature of Injury

Closed Globe injuries Number 258

- Corneal abrasion/laceration 55
- Corneal Foreign Body 98
- Cataract 34
- Hyphema 12
- Secondary Glaucoma 11
- Vitreous Hemorrhage & RD 18
- Lid & Canalicular tear 30

Open Globe injuries 124

- Corneal perforation 44
- Corneo-scleral perforation 41
- Scleral perforation 18
- IOFB 08
- Endophthalmitis / Panophthalmitis 13

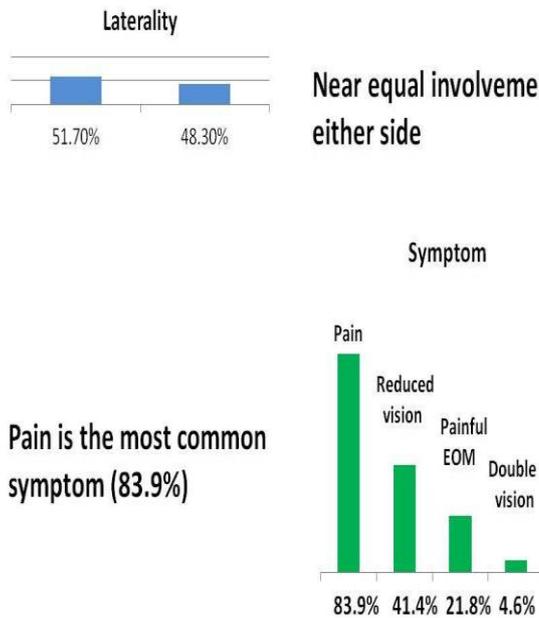
Chemical Injuries 22

46.5% of injuries occurred in outdoor activity, 37.7% occurred in home and 15.8% occurred in workplace.

- Outdoor activity- 46.5%
- Home- 37.7%
- Work place- 15.8%

14 cases sustained multiple injuries due to road traffic accident and bear bite requiring multiple disciplinary approach. 290(71.78%) cases presented after 24 hrs of trauma while 144(28.22%) cases presented to us within 24 hrs of trauma. There was almost near equal involvement of both eyes. Pain is the most common symptom

(in 83.9% cases) followed by reduced vision (in 41.4% cases)



The snellen's visual acuity at time of presentation and final outcome in closed, open and chemical injuries are shown in following table

Visual Acuity	Closed Globe injuries		Open Globe injuries		Chemical Injuries	
	Pre Treatment	Post Treatment	Pre Treatment	Post Treatment	Post Treatment	Post Treatment
6/12	108	173	12	44	0	6
6/60- <6/12	45	48	51	38	12	6
1/60- <6/60	64	22	32	20	08	7
PL +ve- 1/60	36	10	16	08	02	3
PL -ve	5	5	13	14	00	0

Surgery Cross Tabulation:

- Foreign Body removal- 98
- Lid & canalicular tear repair- 30
- Corneoscleral tear repair- 85
- Cataract extraction+/- IOL - 24
- Lensectomy- 10
- IOFB+ intravitreal injection- 8
- Trabeculectomy- 11
- Evisceration- 13
- RD surgery, vitrectomy- 14

Discussion

Children are at risk of ocular trauma because of experiment with new objects and to intimate adult behaviors without being aware of the risk. Most of these hazards occur from careless and unsupervised games.

Our study showed maximum incidence of ocular trauma in age group of 0-20years.¹

Older age groups are also prone for ocular trauma because of their inability to avoid hazards.

Our study demonstrates incidence of ocular trauma is 27% in >60yrs age group.²

In our study 258 eyes had closed globe injuries with an initial visual acuity of <6/60 in 105 eyes

(40.69%). While 124 eyes of open globe injuries 61 eyes (49.19%) had visual acuity <6/60.

Poor visual outcome in the open globe injuries were related to multiple ocular structure injury and severity of ocular damage mainly caused by sharp objects and vegetable matter leading to evisceration or enucleation.³

Most of the open globe injuries, 110 eyes (88.71%) needed immediate surgical intervention. Immediate intervention results in good visual outcome.

Foreign body removal by quacks in villages is one of the major cause of poor visual outcome in closed globe injury cases.

Breakage of spectacles made of glasses during trauma is also a major cause of ocular morbidity in children (5-15 years age group). Most of the road traffic accident occurred under influence of alcohol. In our study 32 cases of road traffic accident out of 48 cases i.e. 66.67% are under influence of alcohol. Injury at work places is mostly due to improper safety measures.

Prevention of Eye Injuries

As prevention is better than cure, eye injuries can be avoided by the use of following:

- Plastic derived lenses in the frame which do not break easily like glass.

- Impact resistance lenses – prepared out of polyester and polycarbonate are used to avoid industrial hazards.
- Safety goggles and occupational spectacles for workers at high risk of injury.
- Head and face protectors are particularly given to workers doing welding and sandblasting.
- Face shields and helmets to avoid sport injuries as in cricket, hockey etc.
- Combined wire and polycarbonate face guard – In sports like cricket, hockey etc.
- To increase the awareness of grievous nature of ophthalmic injuries in public masses as well as school going children so that acts like throwing stones or arrow are avoided.
- There is a strong need for counseling of parents and teachers for supervision of children during play at home and school.
- There is need of education of public to follow the rules of road and prohibit strictly the mixture of drinking and driving.

References

1. Saxena R, Sinha R, Purohit A, DadaT, Vajpayee RB. Pattern of pediatric ocular trauma in India, Indian j. of ophthalmology 2002;69;863-7
2. Parver LM. Eye trauma: the neglected disorder, Arch ophthalmol,1986;104(10):1452-3
3. La Roche GR, Mc Intyre L, Scheletzer RM. Epidemiology of severe eye injuries; ophthalmology 1988,95:1603-7

