

# **RESEARCH ARTICLE**

# OCULAR BLUNT TRAUMA IN BUNDELKHAND REGION: A RETROSPECTIVE STUDY IN BUNDELKHAND REGION

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# Manuscript Info

#### Abstract

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*Key words:-*Blunt Ocular Trauma, Sub Conjuctival Hemorrhage, Ecchymosis, Hyphaema Le **Background:** Ocular injuries can be classified into mechanical and non-mechanical injuries. Ocular injuries are more common in young patients than in elderly or female people. About thirty percent of eye injuries are caused by blunt objects. The most common mode of ocular injury was road traffic accident followed by occupational hazard.

**Material and Methods:** The study was retrospective study of 50 patients who had blunt ocular trauma from November 2022 to October 2023 . Patient data, mode and extent of injury, management and outcome was noted and analyzed which was conducted in patients with definite history of recent blunt ocular trauma of all age.

**Results:** During our study period, 50 patients of blunt ocular trauma were evaluated. Majority of patients were above 25 years age, out of which majority of patients were male (70%) and the most common mode of injury was road traffic accident followed by occupational injury. Majority of patients were managed at our centre both medically as well as conservatively, few cases which requires further management (traumatic dislocation of lens, corneal tear with grade 4 hyphaema) were referred to higher centre for further management.

**Conclusion:** Blunt ocular trauma was more seen with Road traffic accidents and were more in males than females. Early and prompt detection with appropriate management lead to prevention of further complications.

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### **Introduction:-**

Ocular injuries can be classified into mechanical and non-mechanical injuries. Trauma is the leading cause of monocular blindness worldwide<sup>[1]</sup>. There are two types of ocular injuries: closed and open globe injuries (OGIs), the latter of which is characterised by a full thickness perforation in the cornea or sclera. The coup and countre coup mechanism causesdamage to the eyes, or by compression of the eye. Ideas behind coup and counter coup damage was initially proposed as a reason for the brain damage brought on by head damage from a blunt weapon by Courville<sup>[2-3]</sup>. Corneal abrasions, subconjunctival haemorrhages, choroidal haemorrhages, and retinal necrosis are a few instances of coup injuries in blunt trauma, whereas commotio retinae is the best illustration of a counter coup injury. In the elderly, globe rupture is most often a result of falling<sup>[4-5]</sup>. Because a closed space's volume cannot be altered, the basic pathophysiology of a compressed eye along its anterior-posterior axis is that it must either rupture or extend on its equatorial plane. Hence, the extent of injury suffered is determined by<sup>[6]</sup>:

1. The amount of energy transferred to the globe and orbit.

2. The physical characteristics of the object. 3. Location of impact area.

## Materials and Methods:-

This was a retrospective study of 50 patients with blunt ocular trauma, taken from Nov 2022 to Nov, 2023. A thorough history was taken and recorded. The patient presented with the complaints of pain, diminution of vision, redness, lacrimation, ecchymosis . Injuries to other organs, loss of consciousness, bleeding from nose and ear, tetanus prophylaxis status were also included in the first evaluation.

### **Inclusion Criteria:**

Patient who had history of blunt trauma and are willing to participate

#### **Exclusion Criteria:**

Patients with history of penetrating ocular injury, Patients with orbital injuries involving fractures, old ocular injuries >1 month before

The study was explained and a written informed consent was taken from patients then complete examination was done including visual acuity, examination of orbital adenexa,

The below	Table represents the	structures injured in	patients with blunt trauma.

Structures involved	No. Of patients	Percentage(%)
Lid & Adnexa	40	80
Conjuctiva	21	42
Cornea	5	10
Anterior Chamber (Hyphema)	5	10
Iris/ Pupil	1	2
Lens	2	4



The below graph shows the Age-wise distribution of patients presenting with blunt ocular trauma



The above graph shows the sex distribution of ocular blunt trauma

Ocular involvement	No. Of patients
Lid laceration, eyebrow involvement	5,35
Conjuctival congestion, subconjuctival hemorrhage	21,16
Corneal edema,tear	1,4
Hyphema	5
Traumatic mydriasis,	2
Dislocation of lens	2





This is the pic showing dislocation of lens after blunt trauma (taken at M.L.B.Medical College, Jhansi)

This is the picture taken at our Emergency Dept in M.L.B.Medical College, Jhansi .Pic A) shows before suturing and B) after suturing.

# **Discussion:-**

Ocular injuries are more common in young patients than in elderly or female people. About thirty percent of eye injuries are caused by blunt objects<sup>{7,8</sup>}. In our study it was seen that the most common mode of ocular blunt injury was road traffic accident followed by occupational hazard and the most common age of presentation was seen to be >21 yrs. The most common structure involved in our study was seen to be lid and adnexal involvement. Fifty percent of the individuals in our study who had concomitant lid tears also had ecchymosis and 40% of them had lid edema. Head elevation, and cold compresses were advised as a part of treatment. Complete resolution typically takes 2 to 3 weeks as it was seen in our study.

Subconjuctival hemorrhage was seen in our 16 (32%) of patients and it is caused by rupture of small subconjuctival blood vessels. The treatment included cold compresses and reassurance and complete resolution also took approximately 1-2 weeks and it spontaneously resolves within 2 to 4 weeks.

# **Conclusion:-**

Blunt trauma forms a major part of ocular trauma. In our study majority of the patients were males 70 % and the commonest age of presentation was 21-30 years (40%). Our study showed road traffic accident to be the commonest mode of blunt ocular injury (70%). The most common structure involved in blunt trauma in our study was lid and adnexa (approximately 80%) followed by conjuctival involvement (42%).

Majority of patients here were given medical management as well as were conservatively managed too while some patients who had traumatic dislocation of lens were referred to higher centre which requires lens removal.

The importance of wearing safety goggles, face shields, and general health instruction about eye protection can prevent the future eye hazards and the complications the eye can face if not protected completely.

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