“A PROFILE OF OCULAR TRAUMA IN PATIENTS ATTENDING SHRI B.M. PATIL MEDICAL COLLEGE AND HOSPITAL, VIJAYAPURA”

By

Dr. Piyush Sao

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Under the guidance of

Dr. Vallabha K

Professor Department of ophthalmology

BLDE (DEEMED TO BE UNIVERSITY)

SHRI B.M. PATIL MEDICAL COLLEGE, HOSPITAL & RESEARCH CENTRE, VIJAYAPURA, KARNATAKA.

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ABBREVATIONS

1. A.C. -Anterior chamber
2. A.P. -Antero-posterior
3. B.C.V.A. -Best corrected visual acuity
4. C.T. -Computed Tomography
5. M.R.I. -Magnetic Resonance Imaging
6. I.O.F.B.- Intraocular foreign body
7. F.B. -Foreign body
8. IOL -Intraocular lens
9. PCIOL -Posterior chamber intraocular lens
10. S.F.I.O.L.- Scleral fixated intraocular lens
11. P.L. -Perception of light
12. P.R.- Projection of rays
13. P.V.R. -Proliferative vitreoretinopathy
14. R.A.P.D. -Relative afferent pupillary defect
15. R.D.- Retinal detachment
16. S.C.- Subconjunctival
17. U.S.G. -Ultrasound
18. B.E.T.T. -Birmingham Eye Trauma Terminology
20. VEP -Visual-Evoked Potential
21. OTS -Ocular Trauma Score
22. R.T.A.- Road Traffic Accident

ABSTRACT

INTRODUCTION: Monocular blindness is frequently caused by ocular trauma. Visual deprivation is one of the most significant deficits recorded by a human being. One can say ocular trauma is as old as human civilization. The ocular deformity is very evident in all facial injuries. Despite having a significant socio-economic impact, very little data is available on ocular trauma's magnitude & risk factors. Few such studies have been conducted in various parts of India, but none have been conducted in this region. The pattern of ocular injuries in a region depends upon the activities of the people residing in that particular area. Hence the present study is intended to assess the profile of ocular trauma in and around Vijayapura District.

OBJECTIVES: To study the profile of ocular injuries in and around the Vijayapura District.

METHODS: The study was conducted in B.L.D.E. Hospital from November 2019 to April 2021. A total of 100 patients attending casualty and outpatient departments with a history of both mechanical and non-mechanical trauma were included. All cases underwent detailed ocular examination of the anterior and posterior segments. Investigations were done wherever needed.

RESULTS: Majority (23%) of ocular trauma occurs in 20-30 years. Ocular trauma was more in males (83%) due to more males involved in driving, industrial and agricultural occupations. 83% of cases were from a rural background, and 17% were from an urban background. In 47% of cases right eye was involved, whereas in 40% of cases left eye was affected. In 13% of cases, both eyes were involved. Because of COVID -19 lockdown restrictions number of patients presenting with ocular trauma significantly decreased. Closed globe injuries (38%) were more common than open globe (22%) injuries. In mechanical injury, close globe injuries included 18% contusion and 20% lamellar laceration. 16% were penetrating injuries, 6% were rupture, and 34 % were adnexal injuries in open globe injury. There were no cases of I.O.F.B. in the present study. Majority of patients presented within 6 hours of trauma to our center. In this study, the most commonly affected structures were the eyelid and adnexa. There was a significant number of berlin's edema in this study.

CONCLUSION: Ocular trauma had a male predilection, and it was common among young adults. In this region, road traffic accidents were the most common cause of ocular trauma. This necessitates the implementation of improved road safety measures in this region.

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INTRODUCTION

Humanity has battled various eye injuries for as long as man has walked the earth's surface. Visual deprivation is one of the most significant deficits recorded by a human being. One can say ocular trauma is as old as human civilization. The ocular deformity is very evident in all facial injuries. Ocular trauma is essential in morbidity due to its high vulnerability to direct exposure and delicate tissue configuration. Knowledge of ophthalmology has improved with time, and the management of ocular trauma has also improved. Revolution in industry and agriculture has brought about improvements in well-being and raised the socio-economic standards of countries and societies. This has resulted in further adding to rising levels of trauma. The incidence of visual morbidity and young age blindness has risen. Better management strategies by ophthalmic surgeons and timely intervention can bring down visual morbidity caused by eye injuries.

Ocular trauma is an insult to the eye or its adnexa that may lead to decreased visual function. Its outcome has a vast spectrum that needs to be evaluated in detail. According to the WHO Programme for the Prevention of Blindness, 55 million eye injuries which limited activities for more than one day on an average occur each year; – 750,000 cases require hospitalization each year, including approximately 200,000 open-globe injuries. Injuries have rendered around 1.6 million people blind, 2.3 million people with limited bilateral vision, and nearly 19 million people with unilateral blindness or low vision. (1) Vats et al. reported the prevalence of ocular trauma to be 2.4% of the population in an urban city in India. 11.4% of these are blind. (2-3)

Ocular trauma is a preventable public health issue that is the leading cause of blindness in children, ophthalmic morbidity, and monocular blindness worldwide. (4) One out of twenty patients presenting to the ophthalmologist has an ocular injury. (5) Despite accounting for only 0.27 % of total body surface area and 4% of the facial area, the eye is the third most commonly injured organ after the hands and feet. (6-7)

According to studies, evidence suggests that one out of every five adults has a history of ocular trauma. (2) These rates are 12–38% in the pediatric group, making ocular trauma the most avoidable cause of childhood blindness. (4) It is common in most developing countries and leads to permanent visual impairment. (1, 6, 8, 9, 10)

Age, gender, socio-economic level, and lifestyle are all significant risk factors for ocular injury. The location of the injury is also linked to a hazardous situation. According to available data, eye injuries have a chief impact in terms of medical care, vocational rehabilitation needs, and high socio-economic expenses. (1)

It is more common in children and the elderly. (1,9) Males are disproportionately affected by traumas, according to both hospital and population-based studies. (1) Ocular injury etiologies vary in metropolitan areas. It also differs across nations, regions of the world, and demographic or socio-economic strata. Ocular injuries vary significantly in type and complexity. The etiology of ocular trauma is diverse and varies in different geographical locations. Despite causing structural and functional visual loss, ocular trauma has profound social, economic, occupational, and medico-legal consequences. The loss of vision caused by ocular trauma reduces a person's quality of life and has significant socio-economic and psychological consequences for patients and their families. Early detection and management hold the key to trauma management and prevention of further complications. (11) Despite having a significant socio-economic impact, there is scarce data on the scale and risk factors, particularly in emerging nations such as India. (9,10)

Remote trauma and difficulty acquiring an accurate history might make epidemiological investigations challenging. Prevention strategies for ocular trauma necessitate an understanding of the cause or mechanism of injury, which may allow for better resource allocation to prevent such injuries. Both patients of ocular trauma and society bear a significant, potentially preventable burden. The management is complicated, and it frequently necessitates many treatments strategies. Precise medical diagnosis and individualized therapy are necessary for every single patient in the era of precision medicine, which places greater demands on ophthalmologists. The crux of preserving visual function in individuals with ocular damage is

accurate surgery timing and the logical use of medications and surgical methods. Whether the trauma is minor or severe, in an urban or rural setting, or involving an adult or child, the patient must be medically stabilized and the eye thoroughly assessed. (12-13)

AIM AND OBJECTIVE OF THE STUDY

To study the profile of ocular injuries in and around Vijayapura District.

REVIEW OF LITERATURE:

Khun F et al. opined that eye injuries as per Birmingham classification (Birmingham Eye Trauma Terminology) B.E.T.T. are segregated into closed and open eye injuries. (9) They shelter a wide range from injuries of adnexa and lids, orbit, bones of the head and face, eyeball, and optic nerve, and can pose severe problems to the anterior and the posterior segment of the eye. The outcome of treatment may vary from complete recovery with good visual function to blindness. (10)

A study done by Anitha S Maiya in 2018 suggested that In the rural population, blunt ocular trauma is widespread in males and is primarily agriculture-related, involving various ocular structures in the same eye. Ocular problems can range from minor irritations to sight-threatening injuries. Health education emphasizing early detection and treatment of eye injuries was suggested to reduce ocular morbidity. (14)

A study done by Shailaja Karve in 2017 suggested that Ocular trauma sustained during agricultural work is a significant cause of ocular morbidity in rural India, where farming is a significant occupation. It remains a common and preventable cause of ocular morbidity. The commonest age group affected is that of young adult males. The commonest type of injuries are closed globe injuries affecting the anterior segment of the eye. The visual outcome depends upon the severity of the injury and the time taken to report to a specialty eye care center. In the rural population, ophthalmology-oriented programs need to consider ocular trauma as a priority. (10)

Ocular trauma was disproportionately frequent in males and children in a study conducted by Alem K.D. et al. More than 95% of the cases presented after 6 hours from the time of ocular damage, and treatment was started for more than 95% of them after 6 hours. The cornea was the most usually traumatized ocular structure. Ocular surgery was performed in 53.17 % of patients due to trauma, with corneal tear repair being the most common operation (51.8 %). (6)

Shazia Qayum et al. opined that out of 357 patients, 271 (76%) were below the age of 12 years; 41.1% of children with ocular trauma belonged to the age group 2-6 years. The male to female ratio was 2.9:1. Out of total patients, 242 (67.8%) presented with closed globe injury. The most

commonplace of injury, according to the study, was home (47.8%), followed by streets (17.9%) and playground (14.9%). (13)

P Shashikala et al. opined that out of a total of 306 cases of ocular trauma, predominantly distribution was in the 20-40 year age group (72.2%) and in men (75%). The workplace-related cases were 50.7% and of these, the fall of foreign bodies led the list. The visual prognosis was poorer in road traffic accidents than workplace injuries due to the higher occurrence of open globe injuries and optic neuropathy. Finally, 11% of injured cases ended up with a poor vision. Effective mass education is needed for the prevention of ocular injuries and seeking early medical help. (12,15)

A study done by Deepa John et al. found that eighty-four children presented with firework-related ocular injuries during the study period. There was male predominance in this study (4:1) with a mean age of 9.48 ± four years. The prevalence of unilateral blindness in children due to fireworks was 8% (95% confidence interval - 2–13%). Among the closed globe injury, the history of fall was present in about 35% of children, followed by trauma while playing with bat/ball (15.7%) and finger nail trauma (13.2%). Among open globe injury, trauma with needle, knife, glass, and pen were common causes. (16-17)

Satendra Singh et al. discovered that males were more affected than females in a study of 220 instances of trauma examined with a mean age of 8.74 3.93 years. Open globe injuries dominated blunt injuries. Penetrating injuries were responsible for 67.79 % of open globe injuries, with rupture being the least common (2.54 %). The most significant predictors for final visual prognosis, in descending order, were presenting visual acuity, amount of corneal tear, type of injury, zone of injury, and time between injury and treatment, according to a stepwise multiple linear regression analysis. (18)

According to Vedang Shah et al., roughly 69 % of ocular trauma patients presented within 24 hours of damage. Inability to open the eyelids, redness, and watering were the most common symptoms. The most common cause of corneal injuries was self-infliction by a child's hand (49 %). Corneal abrasion was found in 34 cases (45 %), isolated epithelial abnormalities in 30%, and infective keratitis in 25% of the cases. In 14 cases, infection was discovered (fungal filaments in 7 and gram-positive cocci in 7). Only 36 babies were followed up in the hospital regularly. All of the infants that were followed up in the hospital eventually recovered. (19)

According to a study conducted by Tanvi A et al., motor vehicle accidents accounted for 62.4 % of injuries, with others including fall from height (6.2 %), wooden stick injuries (5.6 %), fall

at home (5.4 %), fist blow (5.4 %), metal foreign body (4 %), chemical injuries (2.6 %), burns (2.4 %), stone (1.6 %), pencil (1 p (3.2 % total). Closed globe injuries accounted for the majority of ocular injuries (90%), followed by open globe injuries (5.2%) and chemical injuries (5.2%). (4.8 %). 96.4 % of the 200 participants' injuries were limited to the anterior segment, 1.4 % to the posterior segment, and 2.2 % to the anterior and posterior segments. (20)

Poonam Lavaju et al. discovered that 71.1 % had open globe injury (OGI) and 39 (28.3%) had closed globe injury (CGI). Fifty-one % were injured while playing, with the most common cause being a wooden stick (36 %). Zone I was the most common among OGI (71.7%), followed by zone II (19%) and zone III (13.7%). (9.09 %). The most common CGI was contusion (55.26 %). (21)

THE BIRMINGHAM EYE TRAUMA TERMINOLOGY (B.E.T.T.)

Like, two people speaking a foreign language, ophthalmologists cannot communicate with each other if standardized terms are not used to describe an eye injury. The terms used to convey an eye injury need to have straightforward definitions.

All definitions refer to the entire globe in this system and not just to a specific tissue. The location of the injury is specified. Whenever tissue is specified while describing an ocular injury, it refers to the location and is not a modifier of the term. (22)

"TABLE 1: BETT TERMS AND DEFINITIONS

TERM	DEFINITION	COMMENT
EYEWALL	The sclera and the cornea	The eyewall is separated into three layers posterior to the limbus. The most external tissue (sclera) should be evaluated when it comes to eyewall. This has both a clinical and a practical application.
CLOSED GLOBE INJURY	There was no full-thickness wound of the ocular wall.	Through and through, there is no break of the cornea or sclera.
OPEN GLOBE INJURY	Full-thickness wound of the eye wall	There is a breach of the cornea and the sclera through and through
CONTUSION	There is not any damage to the	Damage may occur as a result of

	eye's wall.	the object's direct energy delivery/shock wave (e.g., choroidal rupture) or as a result of changes in the globe's morphology (e.g., angle recession)
LAMELLAR LACERATION	Eye wall partial-thickness wound	The wound is "into" rather than "through" the eye wall.
RUPTURE	A huge blunt instrument caused a full-thickness wound to the eye wall.	The impact causes an immediate increase in I.O.P. because the eye is filled with incompressible fluids. The eye wall's weakest point gives way (rarely at the impact location, such as along an existing cataract wound); the true wound is generated by an inside-out mechanism. This results in a rupture, and tissue prolapse is almost always present." (23)

6. **LACERATION:** a full-thickness injury to the eye wall caused by a sharp item. An outside-in mechanism causes the wound at the impact site; tissue prolapse is prevalent, and I.O.P. rise is unavoidable.

7. **PENETRATING INJURY:** Injury that penetrates the eye wall. There is an entrance wound. If there are multiple wounds, each one has to be caused by a separate thing.

8. **I.O.F.B.:** There are one or more extraneous things present. Although technically a penetrating injury, it is classified as a separate category because to the clinical implications (management, prognosis)

9. **PERFORATING INJURY:** There is a wound on both the entrance and exit sides. The same agent was responsible for both wounds. (24)

When the assessment of the posterior tissues is problematic in clinical settings, traditional B-scan ultrasonography may be required to determine the degree of the damage. (25)

"OPEN GLOBE INJURY CLASSIFICATION

Type

A. Rupture

B. Penetrating

C. I.O.F.B.

D. Perforating

E. Mixed Grade

Visual acuity

A. 20/40

B. 20/50 to 20/100

C. 19/100 to 5/200 D.

4/200 to light perception

E. N.L.P.

Pupil

A. Positive, relative A.P.D. in the injured eye

B. Negative, relative A.P.D. in the injured eye

Zone

Cornea and limbus

Limbus to 5 mm posterior into the sclera

Posterior to 5 mm from the limbus." (26)

"CLOSED GLOBE INJURY CLASSIFICATION

Type

A. Contusion

B. Lamellar laceration

C. Superficial foreign body

D. Mixed Grade

Visual acuity

A. 20/40

B. 20/50 to 20/100

C. 19/100 to 5/200

D. 4/200 to light perception

E. N.L.P.

Pupil

A. Positive, relative A.P.D. in the injured eye

B. Negative, relative A.P.D. in the injured eye

Zone

External (limited to bulbar conjunctiva, sclera, cornea)

I. Anterior segment
II. Posterior segment (all internal structure posterior to the posterior lens capsule)." (27-28)

Almost all aspects of the system may be established at an initial examination of the eye by an ophthalmologist during primary surgery. Extra testing may be required if an I.O.F.B. or an occult scleral wound is suspected. During the workup and surgery, we should define the elements of the classification system. It is important to remember to base the findings on the B.E.T.T. system. (29)

The classification system is a simple way to communicate important information about an eye injury, and it has even been shown to carry risk stratification.

Significant eye damage causes a great deal of psychological distress to the sufferer and his or her family. The most critical concern is to understand as quickly as possible in terms of the long-term visual repercussions. It is equally crucial for the ophthalmologist to have predictive information while making triaging choices and advising patients. (30)

Ocular Trauma Score is a system that has been developed using over 2,500 cases from the U.S.E.I.R. (31) It is based on one functional characteristic, which is initial visual acuity. Along with it, five anatomical characteristics, rupture, endophthalmitis, perforating injury, retinal detachment, Afferent Pupillary Defect, determine the Ocular Trauma Score.

After the initial evaluation/initial operation, the OTS value may be accessible. OTS has consistent prognostic implications.

"TABLE 2: DETERMINATION OF OTS SCORE

Step 1: Determining the raw points		
A.INITIAL VISION	Variable	Raw point value
	NO PERCEPTION OF LIGHT	60
	LIGHT PERCEPTION/ HAND MOVEMENTS+	70
	1/200-19/200	80
	20/200-20/50	90
	>_ 20/40	100
B.ANATOMICAL CHARACTERISTICS	RUPTURE	-23
C.	ENDOPHTHALMITIS	-17
D.	PERFORATING INJURY	-14
E.	RETINAL DETACHMENT	-11

F.	AFFERENT PUPILLARY DEFECT	-10." (32)

Subtract the given anatomical characteristics from the initial vision raw points. If none of the pathologies are present, we consider the visual acquity as the OTS of the given anatomical characteristics. The scores are then classified into five groups based on the likelihood of achieving a range of visual acuities post-injury. The next step is to transform the raw points into the OTS and determine the most likely visual outcome (%).

“TABLE 3: DETERMINATION OF LIKELY VISUAL OUTCOME FROM OTS SCORE

raw point total	OTS	NO PERCEPTION OF LIGHT	LIGHT PERCEPTION/ HAND MOVEMENTS+	1/200-19/200	20/200-20/50	>20/40
0−44	1	74 %	15%	7%	3%	1%
45−65	2	27%	26%	18%	15%	15%
66−80	3	2%	11%	15%	31%	41%
81−91	4	1%	2%	3%	22%	73%
92−100	5	0	1	1	5	94.”(33)

The OTS model, like the B.E.T.T.S., provides descriptions of both open globe and closed globe eye injuries. It is straightforward to use because the six predicted variables (A to F) are rated simply. It can provide reasonable assessments of an open-globe damage's visual potential. However, because the score has a one-in-five chance of being wrong, using it to support

primary enucleation is dangerous. To make an informed selection, it is best to use the OTS as a guideline. (34)

There are several disadvantages to utilizing a more straightforward approach. It excludes severe face and ocular adnexal injuries and other injuries that may affect the visual outcome. These could be chemical, electrical, and thermal ocular damage as a result of mechanical injury. It does not consider the findings of adjunct tests such as X-rays, computed tomography, or ultrasound. B-scans, which can help with an eye exam when the posterior segment is not visible. The doctor must assess other clinical and investigative findings to refine further the prognosis suggested by the OTS. (35)

The most prominent advantage of the OTS is that it may be used as a reference point for analyzing surgical outcomes of patients who have sustained mechanical trauma. It may make beneficial recommendations for service redesign in order to achieve the best results. From the Afghanistan and Iraq wars, it became clear that improved surgical provision for ocular trauma was not improving outcomes from the most severe injuries which were shrapnel damage. Combat eye protection became mandatory, significantly reducing the prevalence and severity of eye injuries. When it comes to ocular injuries, in this case, the OTS was utilised to clearly attract policymakers' attention to the problem. and they responded. (29)

Overall, this is a helpful technique that enables physicians of diverse grades, specializations, and nationalities to communicate, enabling them to plan, manage, and monitor the full spectrum of ocular injuries induced by mechanical stress successfully. A study by Lima-Gomez V et al. suggested OTS can be used to estimate the visual prognosis of almost every injured eye during the initial evaluation in a trauma room without the evaluation of an ophthalmologist. (36)

The details of the trauma, including mechanism, circumstances, participants, relation to work safety, and witnesses, if any, should be recorded for medico-legal purposes. In the physical

exam, one should obtain the best-corrected visual acuity and a slit lamp or penlight examination along with a measurement of intraocular pressure if there is no frank perforation of the globe. The examination should be conducted carefully and bilaterally. A dilated retinal exam should be performed, if possible, but this requires pharmacologic dilation of the pupils, which may interfere with the pupillary light response for hours or days, depending on the type of dilating agent used. Examination under general anesthesia must be considered for any uncooperative patient, especially in the pediatric population. (37)

HYPHEMA

In the event of (closed as well as open) globe trauma, blood frequently collects in the A.C. Possible outcomes are I.O.P. rise, corneal blood staining, the development of anterior/posterior synechiae, cataract, and a range of other indirectly linked pathologic alterations.

The quantity of blood in the A.C. is used to grade hyphema.

"TABLE 4: GRADE OF HYPHAEMA

Grade	Hyphema Size
I	<1/3
II	1/3 – 1/2
III	½ - near total
IV	Total
Microscopic*	Circulating R.B.C.s only; no gross collection of blood" (22)

Anteroposterior globe compression occurs as a result of contusion. This also causes equatorial scleral expansion, limbal stretching, and posterior lens/iris diaphragm displacement.

There is a sudden increase in I.O.P., which might be due to tissue injury in the angle. Bleeding is most commonly caused by breaks in the:

• the primary arterial circle and ciliary body branches;

• the choroidal arteries;

• Veins of the ciliary body

• vessels on the pupillary margin or in the angle of the iris

Clot Formation and Dissolution

Bleeding is stopped by I.O.P. rise, vascular spasm, and the creation of a fibrin/platelet clot. It is possible that a pseudo capsule with strong links to surrounding tissues will form. From the A.C. to the P.C., blood can travel. No fibroblastic activity is detected at 4–7 days following injury when maximum clot integrity occurs. I.O.P. rise, vascular spasm, and the creation of a fibrin/platelet clot all aid in the cessation of bleeding. A pseudo capsule may form with robust attachments to surrounding tissues. Blood may flow from the A.C. into the P.C. Maximum clot integrity occurs 4–7 days following damage; fibroblastic activity is not evident at this point.

A.C. has fibrinolytic activity. Coagulation cascade activators convert plasmin (fibrinolysin) from plasminogen (profibrinolytic). Plasmin, in turn, degrades fibrin, resulting in clot dissolution. Trabecular meshwork outflow pathways and uveal scleral channels remove clot breakdown products, free blood cells, and inflammatory debris. Only a little amount of direct absorption happens through the iris vasculature.

Medical and supportive care should be directed at: lowering the rate of rebleeding; removing the hyphema; taking care of the accompanying tissue lesions; and minimising long-term

consequences. Surgery is commonly used to treat the I.O.P. elevation that does not respond to medical treatment and blood stains on the cornea (38-39)

ANGLE RECESSION

It is a dissociation of the ciliary muscle's longitudinal and circular fibres that is common after closed globe damage. Angle recession can develop in up to 85% of patients with traumatic hyphaema and is linked to both early and late onset glaucoma. Iris injuries jeopardise its function as an optical aperture. Iris is also a mechanical barrier between the A.C. and the posterior chamber which is also compromised. Contusion causes shear stress which affects the iris base, as well as the ciliary body and angle. Even total aniridia can occur as a result of actual iris extrusion or subsequent iris retraction may occur in open globe injuries. The five primary issues are discussed separately below. The implications of iris trauma are idiopathic mydriasis; iatrogenic iris laceration; prolapse, iridodialysis; and aniridia (38)

TRAUMATIC MYDRIASIS

Traumatic mydriasis can result as an immediate or delayed sequalae of a contusion or laceration. It can also be the result of a head trauma. Mydriasis can appear early or late, and it can be unilateral or bilateral. Pupil dilatation can be caused by a variety of factors.

- From unusual sources, sphincter rupture/laceration has been observed (water jets, water balloons. (40)
- Mechanical compression of the third nerve can occur during uncal herniation. This can cause and subsequent brain stem compromise, resulting in third cranial nerve injury. Another common cause is a reduction in brain stem blood supply.
- Even if the eye is unharmed, abnormal cranial nerve regeneration can occur after severe head trauma. The pupil does not respond to light or proximity, but rather to horizontal

gazing. Constriction of the pupil suggests misdirected regeneration of abducens nerve neurons into the oculomotor nerve's parasympathetic pathway.

- Anterior P.V.R. is made of fibrovascular membranes that connect the peripheral retina, ciliary body, and iris. Iris retraction is caused by membrane contraction and collagen deposition.
- During secondary reconstruction, it is difficult to release the iris from scar tissue. In cases of mixed anterior/posterior segment injury, avoiding iris retraction and anterior P.V.R. is significantly more effective with a comprehensive primary anterior vitrectomy. The anterior P.V.R. is made of the fibrovascular membranes that connect the peripheral retina, ciliary body, and iris. Iris retraction is caused by membrane contraction and collagen deposition.

Iris resection is indicated by necrosis and surface epithelization. Preserving improperly placed and nonviable iris tissue produces fewer difficulties. Typically, the resulting defect can be sutured. (37)

IRIDODIALYSIS

Iridodialysis is a root of iris rupture in which the peripheral area is pulled away from the ciliary spur. It is most commonly caused by a contusion that extends the iris at and from its insertion. The severity of the complaints, which are glare, monocular double vision, is determined by the size and placement of the flaw in relation to the lid fissure. (39)

ANIRIDIA

In ruptured eyes with wounds near the limbus, the iris may completely disappear. This region's structural fragility is a risk factor. Iris damage is a typical symptom of severe open and closed globe injuries. In most situations, iris injury has no significant implications other than alerting the clinician to the likelihood of other ocular components being damaged. (37)

CILIARY BODY

Normal ciliary body function is critical to the long-term health of the injured eye. The lack of normal I.O.P. may come from ciliary body dysfunction. The ultimate success or failure of the surgical or medicinal care of the injured eye frequently depends on the eye's ability to maintain a normal I.O.P. Even after successful treatment of open globe damage, which often entails the restoration of different corneal and A.C. diseases as well as a complicated retinal detachment, it is usual for the eyes to become and remain hypotonic. The ultimate success or failure of the surgical or medicinal care of the injured eye frequently depends on the eye's ability to maintain a normal I.O.P. With hypotony, phthisis generally follows, resulting in a poor functional and cosmetic outcome. Atypically high I.O.P. is occasionally the long-term result of trauma-associated inflammation. (37)

HYPOTONY

In the past, hypotony was defined statistically as an I.O.P. less than 6.5 mm Hg1; however adverse effects on the eye are only seldom observed before the I.O.P. falls and persists below 4 mm Hg. Excessive filtration secondary to wound leak leads to hypotony in the traumatized eye. Other causes could be ciliochoroidal detachment, cyclodialysis cleft, or retinal detachment.

Reduced aqueous production can also cause hypotony, a result of intraocular inflammation; anterior P.V.R.; or ciliary body ischemia or damage. In general, hypotony is caused by an increase in extra-canalicular outflow and a decrease in aqueous production. Following anterior segment surgery or ocular trauma, the ciliary body might separate from the scleral spur (particularly contusion) or as the planned outcome of glaucoma surgery. Cyclodialysis allows the A.C. and suprachoroidal area to communicate freely. Increased fluid outflow causes hypotony produced by cyclodialysis. If an eye experiences decreased aqueous production as a result of acute cyclodialysis, it is due to the cyclodialysis itself, not the cyclodialysis itself.

Any hypotonic eye should be suspected of having a cyclodialysis cleft. An eye that has recently had surgery or trauma. Increased fluid outflow causes hypotony produced by cyclodialysis. If an eye experiences decreased aqueous production as a result of acute cyclodialysis, it is due to the cyclodialysis itself, not the cyclodialysis itself.

In the context of hypotony, ciliochoroidal detachment is prevalent. However, the connection between the two is not fully understood. Previously, it was thought that suprachoroidal fluid was formed from aqueous humour and was responsible for ciliochoroidal separation. Electrophoretic protein analysis of suprachoroidal fluid, on the other hand, reveals that the fluid is derived from choroidal arteries by molecular sieving over the capillary endothelium. (37)

SYMPATHETIC OPHTHALMITIS :

Sympathetic ophthalmitis is an uncommon, bilateral, diffuse granulomatous pan-uveitis caused by surgical or incidental trauma to the uvea of one eye. The damaged eye is known as the exciting eye, and the other eye, which also develops uveitis, is known as the sympathising eye. Its incidence has decreased dramatically over the previous 30 years, with the incidence following penetrating trauma being 0.19-0.50 percent. The majority of cases occur between two weeks and two months after the incident.

The development of modest inflammation in the sympathising eye and progressive inflammation in the exciting eye precedes clinical onset. Pain, photophobia, lacrimation, and blurred vision are some of the symptoms. Ciliary flushing, mutton fat K.P.s, cells and flare in the anterior chamber, moderate to severe vitritis, optic nerve head oedema, choroidal infiltration, and Dalen-nodules Fuch's are all symptoms. (41)

The only truly effective treatment is to prevent it from occurring by enucleating the affected eye within two weeks of the incident. It only applies to blind eyes that have been severely traumatised. Enucleating the injured eye after sympathetic ophthalmia develops is

debatable. Once the diagnosis is made, substantial dosages of topical and systemic steroids are administered: 1-2 mg/kg/day of oral prednisolone, which is subsequently decreased, combined with topical steroids and cycloplegics. Immunosuppressive drugs are used in patients who do not react to steroids or for whom steroids are contraindicated. (42,43)

METHODOLOGY

STUDY DESIGN: PROSPECTIVE CROSS-SECTIONAL STUDY

SOURCE OF DATA

Patients attending casualty and outpatient departments in B.L.D.E. (D.U.) Shri. B. M. Patil Medical College, Hospital And Research Centre in Ophthalmology Department.

DURATION OF STUDY

18 Months (October 2019 To April 2021)

METHOD OF COLLECTION OF DATA:

The study was carried out in the Department of Ophthalmology of B.L.D.E. (D.U.) Shri B.M.Patil Medical College, Hospital and Research Centre, Vijayapura. Patients with a history of both mechanical and non-mechanical trauma attending the casualty and outpatient departments were considered. The following parameters were analyzed: sex, age, occupation of patients, residence, financial status, time of the inflicted injury, place and way of inflicting the injury, as well as visual acuity on admission. In addition, the type of injury was analyzed, i.e., contusion, lamellar laceration, mixed, penetrating, perforating, I.O.F.B., or rupture with all resulting complications. A detailed history was obtained regarding the trauma, its nature & circumstances.

After explaining to the patient about the study and after obtaining the patient's willful consent for the same, a standardized proforma was completed for each patient documenting the history, clinical findings, and the investigations done. Clinical examination included Visual Acuity (by Snellen's Chart), detailed Slit Lamp Examination, fundus examination by indirect ophthalmoscope.

Previous treatment history, preexisting ocular disease, and associated systemic and local findings were noted.

SAMPLE SIZE

With a 95% confidence level and margin of error of ±7.5%, the study of 92 (≈100) Ocular Trauma patients will allow the study to determine the profile of the ocular trauma attending Shri B.M.Patil Medical College and Hospital with finite population correction (N=200).

By using the formula:

$$n = \frac{z^2 p(1-p)}{d^2}$$

where

Z= z statistic at 5% level of significance

d is margin of error

p is anticipated prevalence rate (50%)

INCLUSION CRITERIA

- Mechanical ocular trauma
- Non-mechanical ocular trauma including thermal, chemical, electrical, radiational, explosive injuries
- Injuries affecting globe as well as orbit and adnexa
- Open as well as closed globe injuries

EXCLUSION CRITERIA

- Patients who were not willing to participate in the study.
- Foreign body on the ocular surface

STATISTICAL ANALYSIS

All characteristics were summarized descriptively. For continuous variables, the summary statistics of N, mean, standard deviation (S.D.) were used. For categorical data, the number and percentage were used in the data summaries, and data were analyzed by Chi-square test for association, comparison of means using t-test, ANOVA, and diagrammatic presentation.

INVESTIGATIONS:

- Posterior segment evaluation using Direct ophthalmoscopy and B-Scan (done when needed).
- Indirect Ophthalmoscopy
- Intraocular pressure measurement using N.C.T./ Applanation.
- CT SCAN Head and Orbit
- M.R.I.

(was done when required)

Investigations or interventions required in this study were routine, standardized procedures. There was no animal experiment involved in this study.

FIGURE 1: CASE NO. 5 PREOPERATIVE: LID TEAR

FIGURE 2: CASE NO. 5 POSTOPERATIVE LID TEAR SUTURING

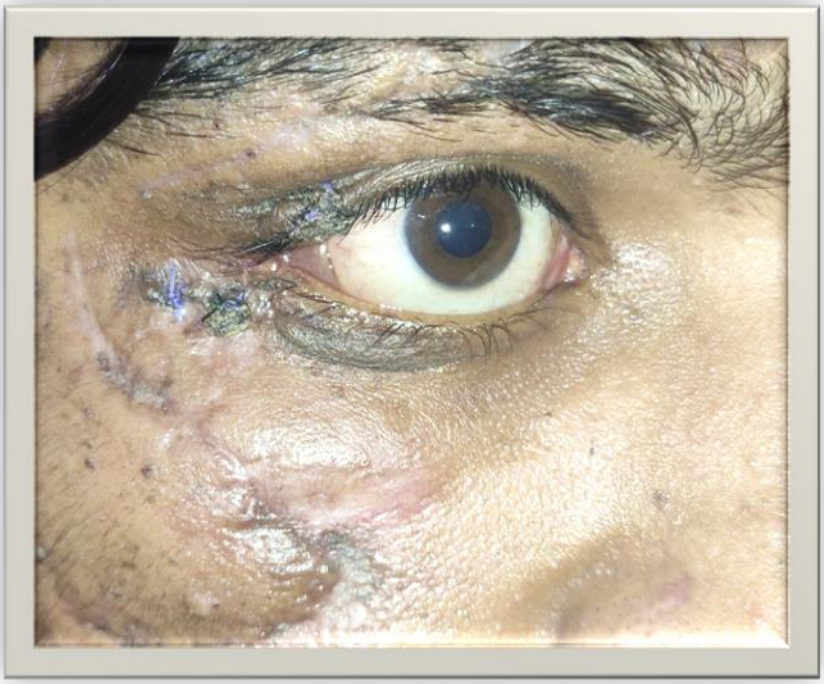


FIGURE 3:CASE NO. 89: PREOPERATIVE ZONE 3 RUPTURE WITH PISTON OF OXYGEN CYLINDER

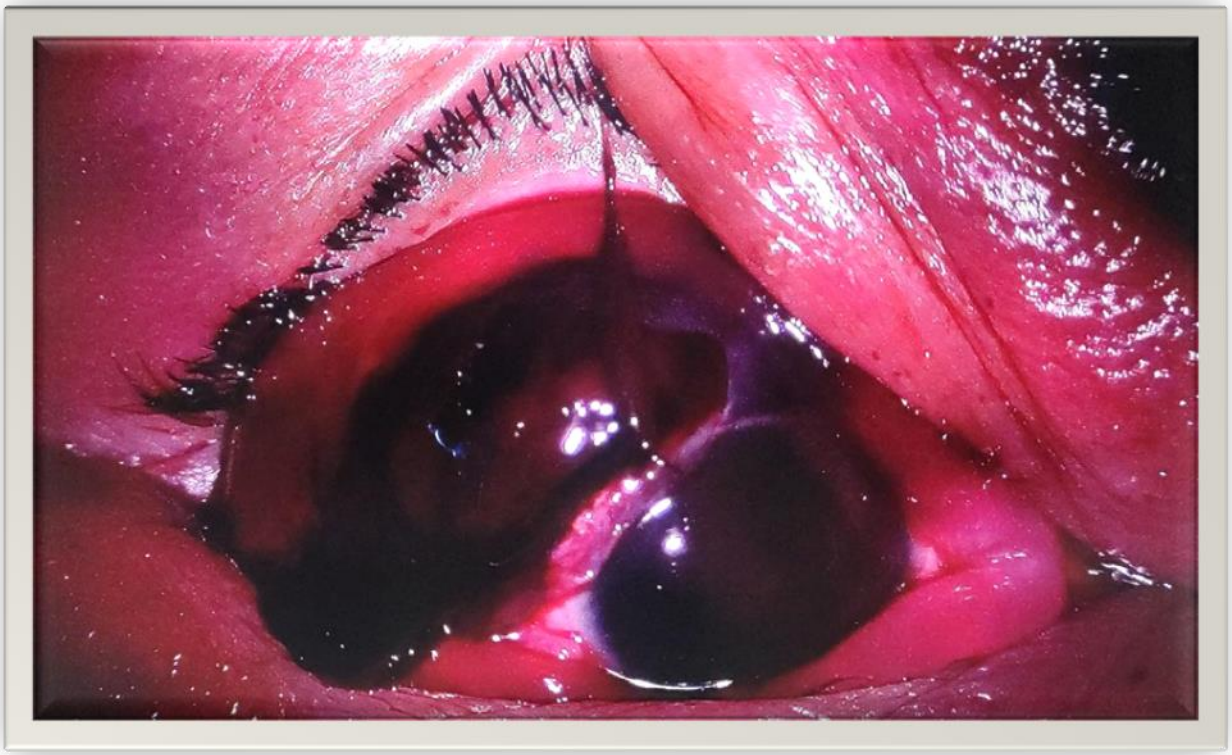


FIGURE 4: CASE NO. 89: POSTOPERATIVE SCLERAL TEAR SUTURING

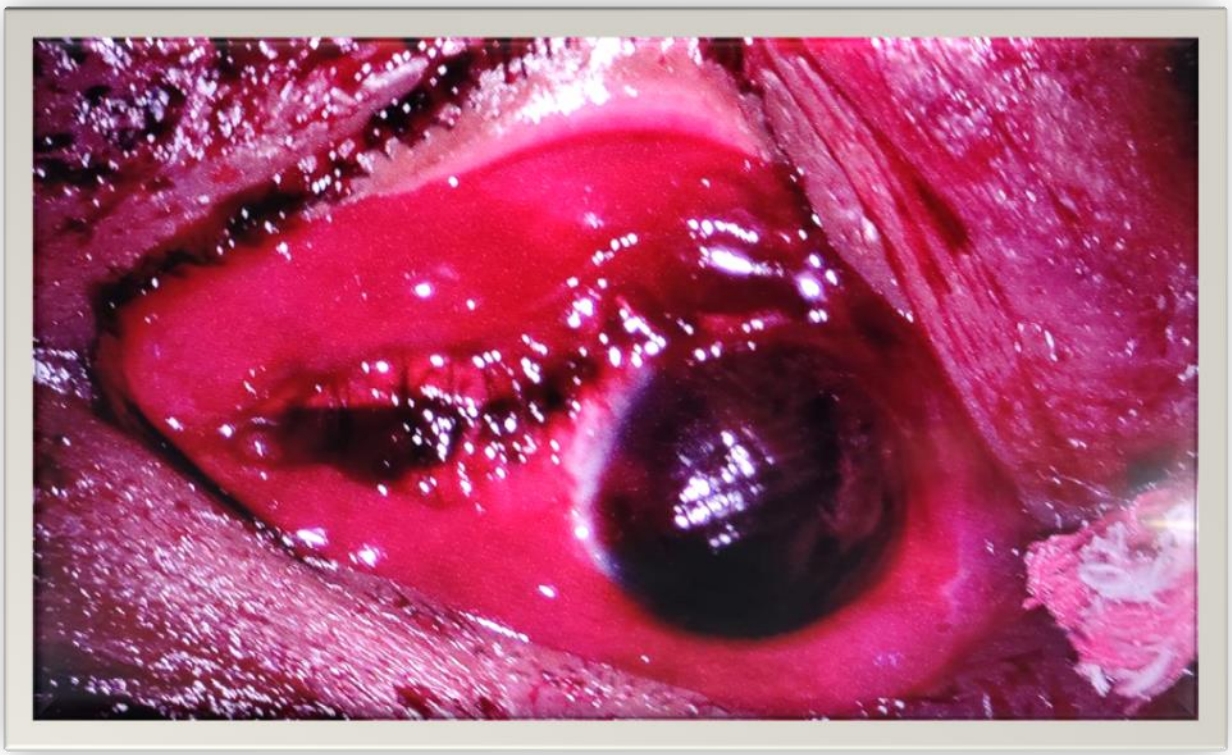


FIGURE 5: CASE NO 98: PREOPERATIVE ZONE 3 RUPTURE; ASSAULT WITH STONE

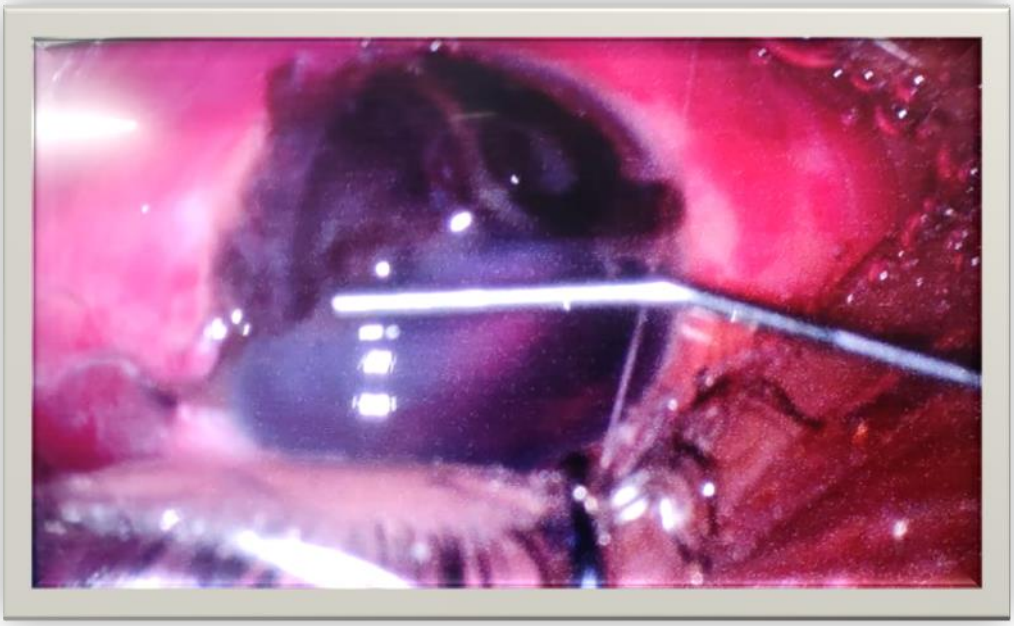


FIGURE 6: CASE NO.98: POSTERATIVE: CORNEO-SCLERAL SUTURING

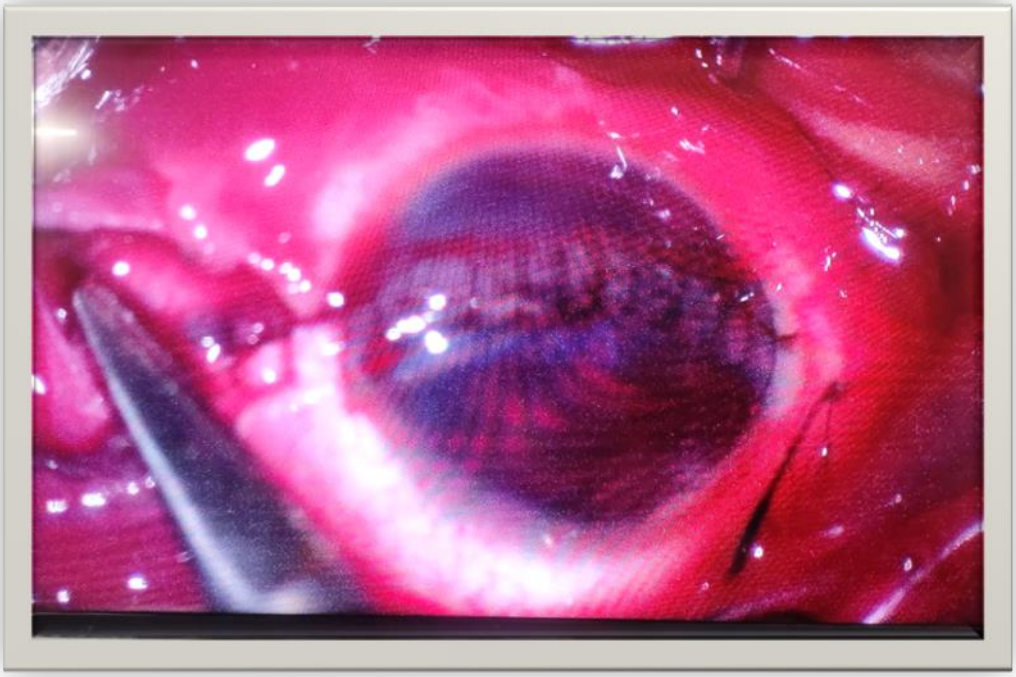


FIGURE 7: CASE NO. 98: B-SCAN SHOWING CHOROIDAL DETACHMENT + RETINAL DETACHMENT + VITREOUS HEMORRHAGE

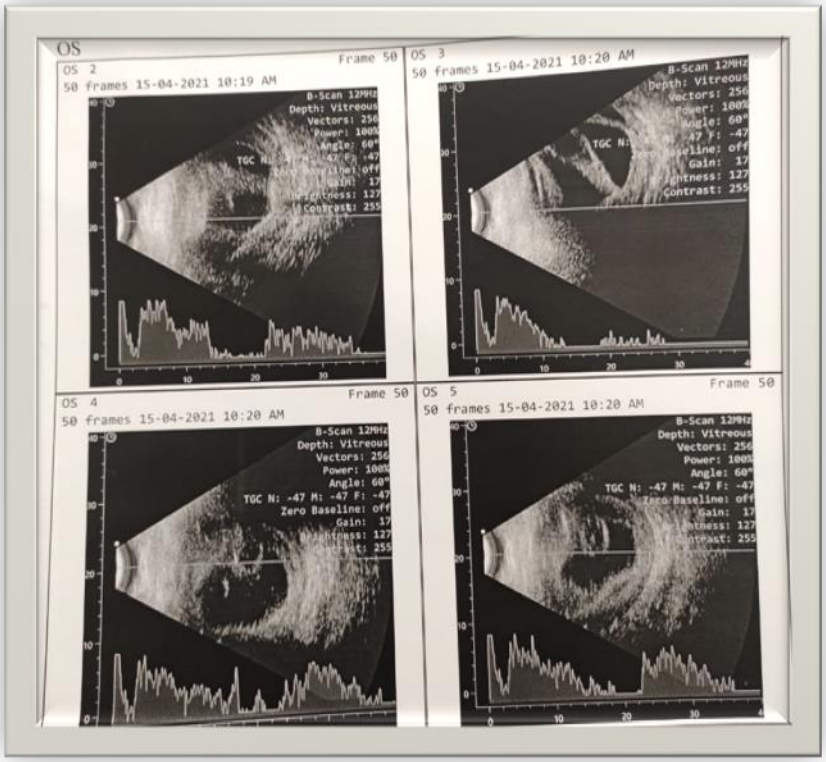


FIGURE 8: CASE NO.31: GRADE 4 CHEMICAL INJURY WITH LIME

FIGURE 9: CASE NO.32: TRAUMATIC CATARACT

FIGURE 10: CASE NO.67: GRADE 2 HYPHAEMA

OBSERVATIONS AND RESULTS

TABLE 5: DISTRIBUTION OF AGE

		FREQUENCY	PERCENT
VALID	<10	10	10.0
	10-20	12	12.0
	20-30	23	23.0
	30-40	16	16.0
	40-50	18	18.0
	50-60	9	9.0
	60-70	10	10.0
	>70	2	2.0
	TOTAL	**100**	**100.0**

CHART 1: DISTRIBUTION OF AGE

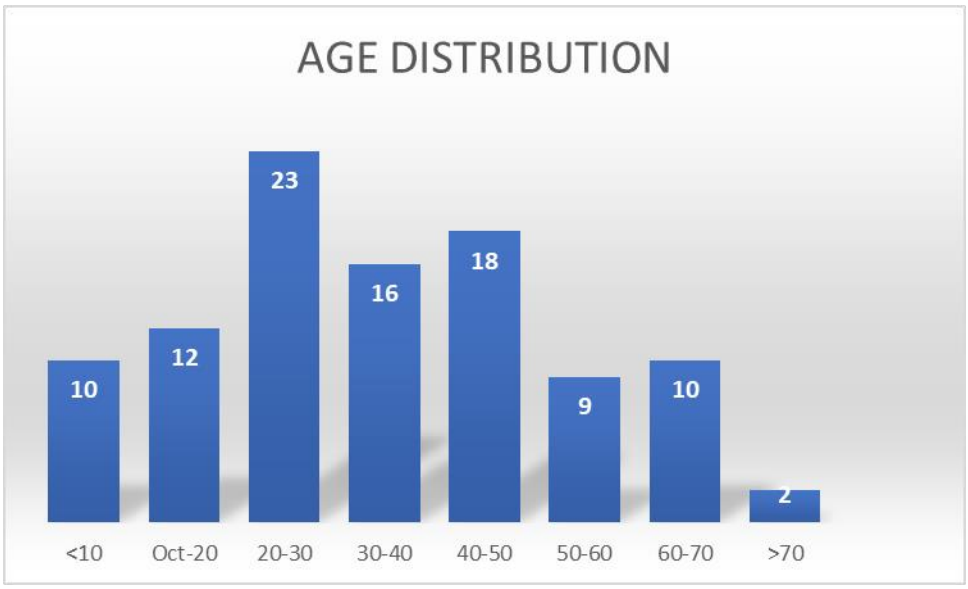


Table 1 indicates that the majority, 23% of ocular trauma, was in the age group 20-30 years, and the least number of cases, 2%, were seen over the age of 70 years. This can be attributed to the fact that people in the second decade of life are more active and hence

more vulnerable for ocular trauma. The pediatric age group (16 years and younger) constituted 16% of the cases.

Table 6: DISTRIBUTION OF SEX

	FREQUENCY	PERCENT
FEMALE	17	17.0
MALE	83	80.0
TOTAL	**100**	**100.0**

In the present study, males outnumbered females. Ocular trauma was 83% in males and 17% in females. Ocular trauma was more in males due to more males involved in driving, industrial and agricultural occupations.

CHART 2: SEX OF DISTRIBUTION

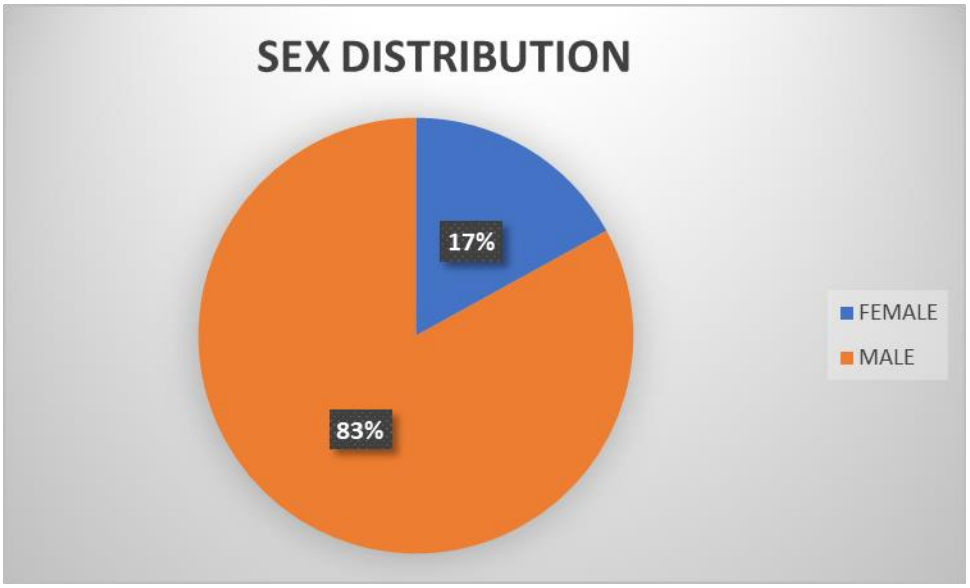
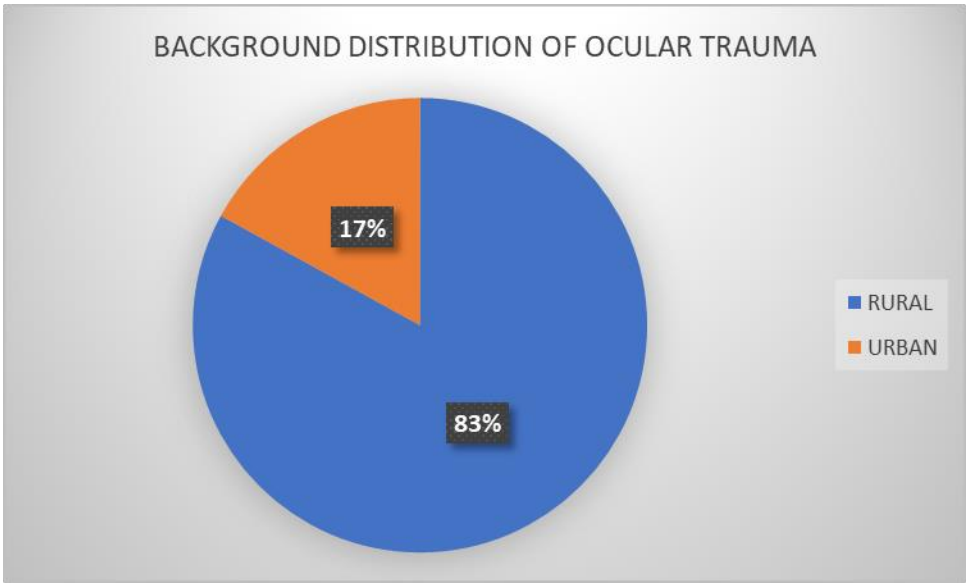


CHART 3: BACKGROUND DISTRIBUTION OF OCULAR TRAUMA



83% of cases were from a rural background, and 17% of cases were from an urban background.

TABLE 7: EYE AFFECTED

	NO. OF CASES	PERCENT
BOTH	13	13.0
LEFT	40	40.0
RIGHT	47	47.0
TOTAL	**100**	**100.0**

In 47% of cases right eye was involved, whereas 40% cases left eye was affected. In 13% cases both eyes were involved.

CHART 4: EYE AFFECTED

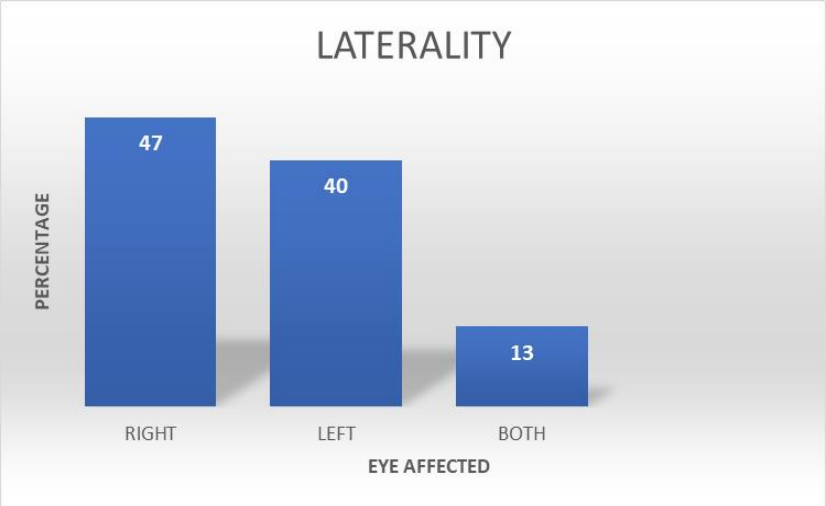


CHART 5: TREND OF OCULAR TRAUMA THROUGH THE STUDY PERIOD

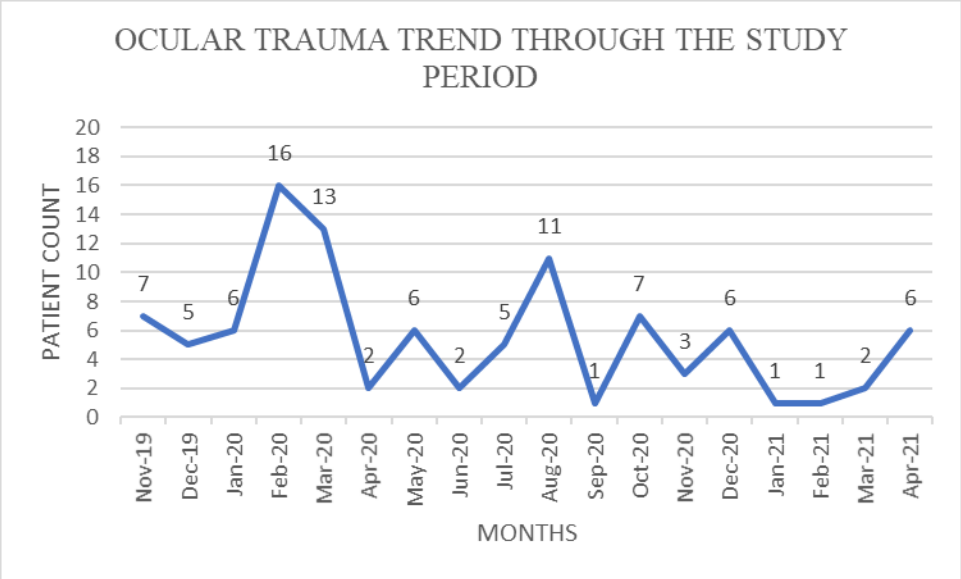
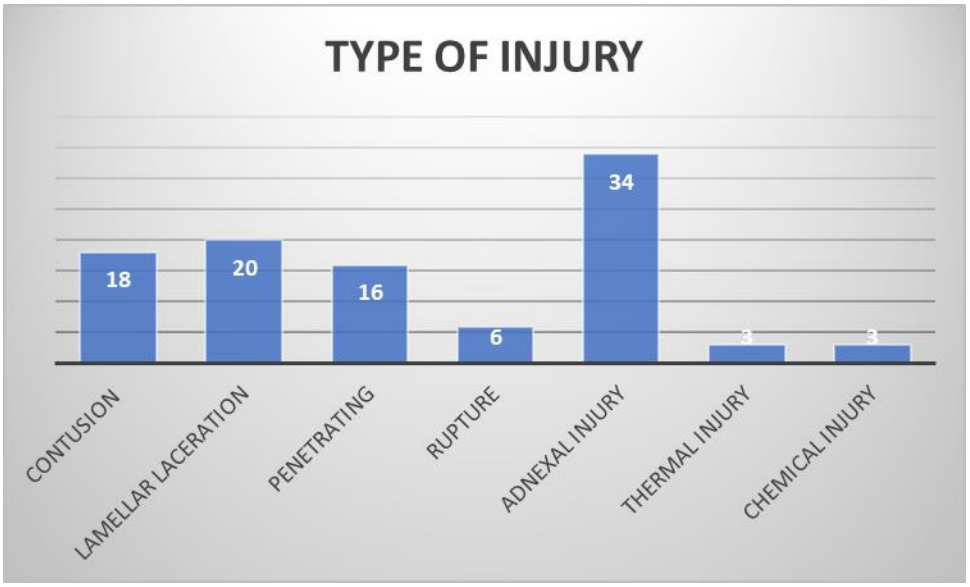


CHART 4 shows the trend of ocular trauma throughout the study period, which is from November 2019 till April 2021. There is a decrease in the total number of cases in the months of February 2020, which corresponds with the first wave of COVID-19. A similar decrease in ocular trauma is seen in the month of February 2021, consistent with the second wave of COVID -19.

CHART 6: TYPE OF INJURY



According to the ocular trauma classification, 94 % mechanical ocular trauma, 3 % chemical injury, and 3 % thermal injury. There were 38% close globe injuries, and 22% open globe injuries, and 34% were adnexal injuries. In mechanical injury, close globe injuries included 18% contusion and 20% lamellar laceration. In open globe injury, 16% were penetrating injuries, and 6% were globe rupture, rest 34 % were adnexal injury.

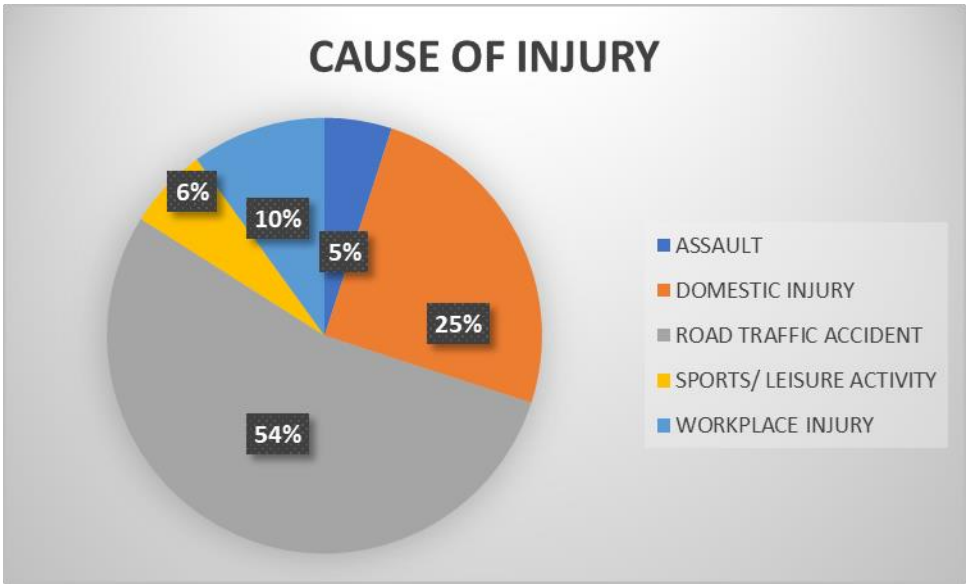
TABLE 8: ZONE OF INJURY

OPEN GLOBE INJURIES		**22%**
ZONE I	7%	
Z.O.N.E.I.I.	9%	
ZONE III	6%	
CLOSED GLOBE INJURIES		38%
ZONE I	20%	
ZONE II	2%	
ZONE III	16%	

Open and close globe injuries were further divided into three zones according to B.E.T.T. classification. Among closed globe injuries, 20% comprised zone 1 injuries, 2% injuries to zone 2, and 16% zone 3. The open-globe injury involved zone 1 in 7% of patients (corneal tear with iris prolapse) and 9% for zones 2 (corneoscleral tear), and 6% zone 3 (scleral tear extending beyond equator). One case of an open-globe injury at the workplace resulted from a projectile of oxygen piston, resulting in rupture. There was no I.O.F.B., in any case. One case of open globe injury by bull gore caused rupture zone 3 injuries. Another case of a ten-year-old child playing on his terrace suffered zone 2

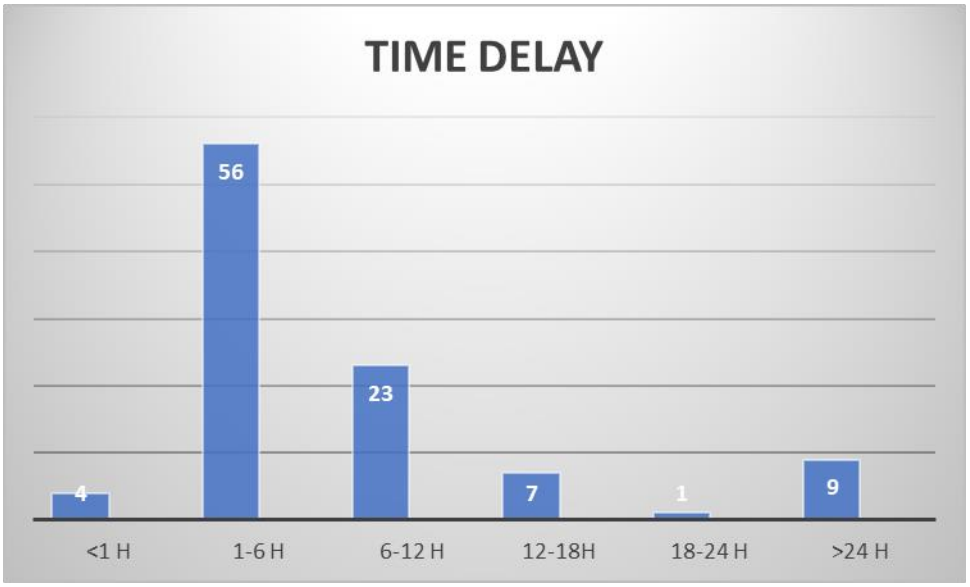
rupture as he tripped over an iron rod protruding from the beam. These cases of rupture resulted in enucleation.

CHART 7: CAUSE OF INJURY



In this study, 54% of ocular injuries were caused by a road traffic accident, 25% were domestic injuries, 6% while sports or doing leisure activities, and 5% were by assault.

CHART 8: TIME DELAY



56% of cases presented to casualty within six hours of injury. Only 9% of cases presented after 24 hours. Overall, there were no cases that presented after 48 hours of injury.

TABLE 9: OBJECTS CAUSING TRAUMA AND CORRELATION WITH TYPE OF INJURY

OBJECTS	FREQUENCY	PERCENT
ASSAULT	2	2.0
BULL HORN	1	1.0
CAUSTIC LIME	2	2.0
SODIUM	1	1.0
CRICKET BALL	4	4.0
DOG BITE	1	1.0
HAND	1	1.0
HOT WATER	2	2.0
KEROSENE	1	1.0
PISTON OF OXYGEN CYLINDER	1	1.0
ROAD TRAFFIC ACCIDENT	54	54.0
ROD	4	4.0
SELF FALL	5	5.0
STICK	6	6
STONE	1	1.0
WOOD	13	13.0
LENTIL STICK	1	1.0
TOTAL	100	100.0

54 % of Cases had ocular trauma due to road traffic accidents.13 % cases had an injury with a block of wood (i.e., while cutting wood for fire with an axe, a big block of wood hit the eye). Rupture was caused by injury with piston of oxygen cylinder (1%) , bull

gore (1%), lentil stick(1%), stone(1%), cricket ball(1%), RTA (1%). Chemical injuries were caused by Caustic Lime(1%), Sodium(1%) and Lime(1%) (used in paan). Thermal Injuries were caused by Kerosene(1%) and Hot water (2%). There were 5% cases of self fall.

TABLE 10: INVOLVEMENT OF EYELID IN OCULAR TRAUMA

EYELID INVOLVEMENT	FREQUENCY	PERCENT
1 DEGREE CHEMICAL BURN	1	1.0
1 DEGREE THERMAL BURN	2	2.0
EYELID CUT LACERATED WOUND (PARTIAL THICKNESS)	23	23
FULL THICKNESS LID TEAR	1	1.0
CANALICULAR TEAR	1	1.0
PERIORBITAL EDEMA	23	23.0
ECCHYMOSIS	34	34
NORMAL (NO INVOLVEMENT)	15	15.0
TOTAL	100	100.0

Out of 100 cases, eyelids were involved in 85 cases. 23% of cases had cut lacerated wounds, 23% had periorbital edema, 34% had ecchymosis. There was 1st-degree thermal burn in 2% cases, 1% had 1st-degree chemical burn, 1 % had full-thickness lid tear, and 1% had a canalicular tear.

TABLE 11: INVOLVEMENT OF CONJUNCTIVA

CONJUNCTIVA INVOLVEMENT	FREQUENCY	PERCENT
CHEMOSIS	30	30.0
CIRCUMCILIARY CONGESTION	15	15.0
CONGESTION	14	14.0
CONJUNCTIVAL TEAR	6	6.0
NORMAL	31	31.0
SUBCONJUNCTIVAL HEMORRHAGE	4	4.0
TOTAL	100	100.0

69% Cases out of 100 cases had conjunctival involvement. Of these, 30% had chemosis, circumciliary congestion in 15%, conjunctival tear in 6%, and subconjunctival hemorrhage in 4% of the cases.

TABLE 12: INVOLVEMENT OF CORNEA IN OCULAR TRAUMA

CORNEA	FREQUENCY	PERCENT
CLEAR	75	75.0
COMPLETE CORNEAL OPACITY	1	1.0
CORNEAL EPITHELIAL INJURY	4	4.0
CORNEAL TEAR WITH IRIS PROLAPSE	1	1.0
CORNEO- SCLERAL TEAR	11	11.0
FULL-THICKNESS CORNEAL TEAR	6	6.0
PARTIAL THICKNESS CORNEAL TEAR	2	2.0
TOTAL	100	100.0

25% Cases of 100 cases had corneal involvement. Of these, 11% had a cornea-scleral tear, 6% had a full-thickness corneal tear, 2% had a partial-thickness corneal tear, 4% had a corneal epithelial injury, and 1% had complete corneal opacity (due to chemical burn).

TABLE 13: INVOLVEMENT OF IRIS IN OCULAR TRAUMA

IRIS		FREQUENCY	PERCENT
	IRIDODIALYSIS	12	12.0
	IRIS PROLAPSE	9	9.0
	NORMAL	67	67.0
	SECLUCIO PUPILLAE	1	1.0
	SPHINCTER TEAR	11	11.0
	TOTAL	100	100.0

33% of cases had iris involvement which included 12% iridodialysis, 11% sphincter tear, 9% iris prolapse, and 1% seclusion pupillae.

TABLE 14: INVOLVEMENT OF LENS IN OCULAR TRAUMA

LENS		FREQUENCY	PERCENT
	LENS DROP IN VITREOUS	4	4.0
	LENS SUBLUXATION	3	3.0
	TRAUMATIC CATARACT	8	8.0
	SIMC	10	10.0
	TRANSPARENT	71	71.0
	PCIOL	4	4.0
	TOTAL	100	100.0

There were 8% cases of traumatic cataracts, 4% cases of lens drop in the vitreous and 3% cases of traumatic lens subluxation.

TABLE 15: INVOLVEMENT OF ANTERIOR CHAMBER IN OCULAR TRAUMA		
ANTERIOR CHAMBER	FREQUENCY	PERCENT
EXUDATES	1	1.0
HYPHAEMA	19	19.0
HYPOPYON	1	1.0
VITREOUS IN AC	2	2.0
NORMAL	77	77.0
TOTAL	100	100.0

There were 19% cases with hyphaema, 2% cases with vitreous in A.C.,1 % cases with exudates in A.C., and 1% cases with hypopyon.

TABLE 16: RELATIVE AFFERENT PUPILLARY DEFECT: PRESENT OR ABSENT		
RAPD	FREQUENCY	PERCENT
ABSENT	73	73.0
PRESENT	27	27.0
TOTAL	100	100.0

RAPD was present in 27% of cases of ocular trauma. The presence of R.A.P.D. has a direct correlation with the severity of trauma and final visual outcome.

TABLE 17: POSTERIOR SEGMENT INVOLVEMENT IN OCULAR TRAUMA		
FUNDUS FINDINGS	FREQUENCY	PERCENT
BERLIN'S EDEMA	22	22.0
CHOROIDAL RUPTURE	1	1.0
EXUDATES IN VITREOUS	1	1.0
GROSS RETINAL EDEMA WITH HEMORRHAGES	2	2.0
LENS DROP IN VITREOUS	4	4.0
VITREOUS HEMORRHAGE	14	14.0
OPTIC NERVE AVULSION + VITREOUS HEMORRHAGE + CHOROIDAL DETACHMENT	1	1.0
POSTERIOR VITREOUS DETACHMENT	4	4.0
RETINAL DETACHMENT	4	4.0
TRAUMATIC MACULAR HOLE	4	4.0
TRAUMATIC OPTIC NEUROPATHY	2	2.0
NORMAL	41	41.0
TOTAL	100	100.0

A myriad of posterior segment findings was seen in the present study. 59% of cases had posterior segment involvement, of which 22% had berlins edema, 1% had a choroidal rupture, 4 % had lens drop in vitreous, 4 % had posterior vitreous detachment. Of 100 cases, 4% had a traumatic macular hole, 2% had traumatic optic neuropathy, and 4% had a retinal detachment.

TABLE 18: CT SCAN FINDINGS IN CASES OF OCULAR TRAUMA		
CT FINDINGS:	FREQUENCY	PERCENT
FRACTURE ORBIT FLOOR AND ROOF	4	4.0
FRACTURE LAMINA PAPYRACEA, PNEUMO-ORBIT, HEMOSINUS	1	1.0
FRACTURE LATERAL WALL ORBIT	5	5.0
FRACTURE LEFT ORBIT LATERAL WALL ROOF AND FLOOR	1	1.0
FRACTURE MEDIAL WALL OF ORBIT	1	1.0
FRACTURE ROOF AND LATERAL WALL	1	1.0
FRACTURE OF LEFT MEDIAL AND LATERAL WALL OF ORBIT	1	1.0
FRACTURE RIGHT ORBIT FLOOR + OPTIC NERVE INJURY	1	1.0
FRACTURE ROOF AND LATERAL WALL + OPTIC NERVE AVULSION	1	1.0
LEFT MEDIAL AND LATERAL WALL AND FLOOR OF ORBIT FRACTURE + PNEUMO-ORBIT	1	1.0
SOFT TISSUE SWELLING	10	10.0
PNEUMORBIT	1	1.0
NORMAL	54	54.0
TOTAL	100	100.0

CT-SCAN was performed in all cases where clinically indicated. 46% of cases with ocular trauma had orbital involvement on CT-SCAN. 5% cases had fracture of lateral wall of the orbit, 4 % cases had a combined fracture of floor and roof of the orbit, 10 % cases had soft tissue swelling.

TABLE 19: VISUAL ACQUITY AT PRESENTATION IN OCULAR TRAUMA

VISUAL ACQUITY	FREQUENCY	PERCENT
6/6 P	5	5.0
6/9P	3	3.0
6/60P	3	3.0
CF>3MTR	51	51.0
CF 2MTR	2	2.0
CF1 MTR	4	4.0
HM +	14	14.0
PL POSITIVE	11	6.0
PL NEGATIVE	6	6.0
TOTAL	100	100.0

Visual acuity was recorded on presentation for all the cases in this study; of these, 51% of cases had vision C.F.> 3MTR, 14% had a vision of HM+, 6% had perception of light, and 6 % had no perception of light. Only 5 % had 6/6p vision, and 3% had 6/9p.

TABLE 20: GRADE OF OCULAR INJURY ACCORDING TO OCULAR TRAUMA SCORE

		FREQUENCY	PERCENT
	1	42	42.0
	2	14	14.0
	3	12	12.0
	4	26	26.0
	5	6	6.0
	TOTAL	100	100.0

The majority of the cases were grade 1 injuries (42%). Grade 2 injuries were (14%). 12% were Grade 3 injuries, of which. Grade 4 injury constituted 26% of cases. There were 6% cases of grade 5 injury.

CHART 9: RAW POINTS OF OCULAR TRAUMA SCORE

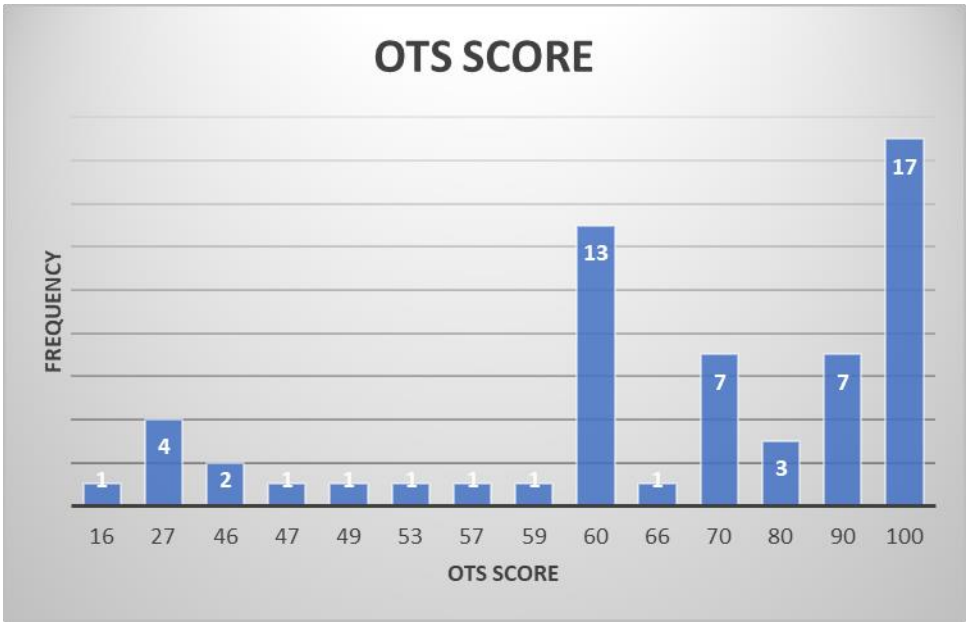


TABLE 21: OTS SCORE AND LIKELIHOOD OF VISUAL AQUITY AT 6 MONTHS

SUM OF RAW POINTS	OTS CATEGORY	NO. OF CASES (IN PRESENT STUDY)	NO PERCEPTION OF LIGHT	LIGHT PERCEPTION/ HAND MOVEMENTS+	1/200-19/200	20/200-20/50	>20/40
0–44	1	43	74 %	15%	7%	3%	1%
45–65	2	20	27%	26%	18%	15%	15%
66–80	3	11	2%	11%	15%	31%	41%
81–91	4	7	1%	2%	3%	22%	73%
92–100	5	17	0%	1%	1%	5%	94%

Calculating the OTS score at the time of presentation can be a great tool in patient management. The OTS's most notable benefit is its usage as a reference point for analyzing surgical outcomes of patients who have suffered mechanical trauma. In this

study, 43 cases had an OTS of 1, which is associated with a 90% predicted outcome of between NPL and P.L. vision (i.e., 73% for no light perception plus 17% for perception of light) and only a 3% chance of vision better than 6/60.

TABLE 22: TREATMENT MODALITY IN CASES OF OCULAR TRAUMA

TREATMENT	FREQUENCY	PERCENT
AC WASH	1	1.0
ANTI RABIES VACCINATION	1	1.0
EYE WASH+BCL	2	2.0
VITRECTOMY	1	1.0
ENUCLEATION	3	3.0
INTRAVITREAL ANTIBIOTICS	1	1.0
LID TEAR SUTURING	25	25.0
CORNEO SCLERAL TEAR SUTURING	9	9.0
CORNEO TEAR SUTURING + IRIS REPOSITION	1	1.0
SCLERAL TEAR SUTURING + IRIS ABSCISSION	1	1.0
LENS EXTRACTION + PCIOL IMPLANTATION	2	2.0
LENS EXTRACTION +VITRECTOMY+ RETINOPEXY + SILICON OIL	2	2.0
CORNEAL TEAR SUTURING + IRIS ABSCISSION + VITRECTOMY +LENS EXTRACTION + SFIOL IMPLATATION	6	6.0
CORNEAL TEAR SUTURING + LENS EXTRACTION + ANTERIOR VITRECTOMY + PCIOL IMPLANTATION	3	3.0
TOPICAL + OBSERVATION (MEDICAL	42	42.0

MANAGEMENT)		
TOTAL	100	100.0

Management of these diverse cases varied profoundly. The greatest number of cases were managed conservatively with medical treatment, i.e., 42%, lid tear suturing was done for 25% cases, corneoscleral tear suturing was done for 20% cases. Eye wash with bandage contact lens application was done for 2% of cases with chemical injury, anterior chamber wash was given for 1 (1%) case, and a case of a dog bite was treated with anti-rabies vaccination. 3% of cases underwent enucleation, 1 % had vitrectomy, and 1% was given intravitreal antibiotics.

Lens extraction with vitrectomy, retinopexy, and silicon oil infusion was done for 2 % cases of retinal detachment. Corneal tear suturing with iris abscission, vitrectomy, lens extraction and S.F.I.O.L. implantation was done for 6 % cases.

DISCUSSION

Worldwide there are about 1.6 million blind and 19 million unilateral visual loss from eye injuries.36 23.5% of the world's blind population is confined to India.36

In their report, Wong et al. estimated that the cumulative lifetime prevalence of ocular trauma was nearly20%, implying that one in every five people suffers an eye injury at some point in their lives. (44)

According to Desai et al., 1996, the 1-year cumulative incidence of ocular trauma requiring hospitalization is 8.14 per 100 000 population. (45)

AGE

In this study, the majority of ocular trauma occurred between the ages of 20 and 30 years, with only 2% of cases occurring after the age of 70. This is due to the fact that people in their second decade of life are more active and thus more vulnerable to ocular trauma. In Ibadan, Nigeria, Oluyemi F et al. discovered the highest incidence of around 31.9 % 20-29 years of age, followed by 31.1 % among the age group 0-10 years. (46)

This contrasts a study by Wang W et al., who found that the rates of ocular trauma were higher in patients aged 41 to 50 years and were more common in middle-aged males. (47)

SEX

Males were more likely to sustain traumatic injuries (83%) than females, which was consistent with the findings of most other studies. (47-51) The male predominance could be explained by the fact that males are more frequently exposed to outdoor work than females, making them more susceptible to injury.

LATERALITY

47% of cases right eye, 40% cases left eye, and 13% cases both eyes were involved. Comparable to other studies, much of the ocular trauma was unilateral and did not result in bilateral blindness. (51,52)

BACKGROUND

The majority of the study population (83 %) came from a rural background, which might be attributed to illiteracy and ignorance, as well as exposure to the profession without preventative measures. This is consistent with the findings of McCarty et al. (74 %). (48)

TYPE OF GLOBE INJURY

Like other studies, close globe injuries (38%) were more common than open globe (22%) injuries. (21,52-55)

In a study by Xiao JH et al., 13.88% and 18.30% with merely orbital or ocular adnexa injury respectively cannot be classified in B.E.T.T. classification. (37) Similarly, in the present study, we account for 34 % of adnexal injuries, which cannot be classified in the B.E.T.T. classification. For such cases, a newer classification system such as one described by Shukla A et al. should be considered. (52)

TYPE OF INJURY

In mechanical injury, close globe injuries included 18% contusion and 20% lamellar laceration. In open globe injury, 16% were penetrating injuries, and 6% were rupture, rest 34 % were adnexal injury. There were no cases of I.O.F.B. in the present study. In a study conducted by Alem K.D. there was 38.55% contusion, 9.18% lamellar laceration, 33.89% penetrating injury, 2.07% rupture, IOFB 4.01%, 7.12% perforating injuries. (6) similar results were seen in a study by Syal E et al., which is elaborated in the table. (53)

TYPE OF INJURY		PRESENT STUDY	ALEM KD et al. (6)	JUDO STUDY (56)	SYAL E et al. (57)
MECHANICAL	OPEN GLOBE INJURY	22%	47.09 %	22.7%	26%
	• RUPTURE	6%	2.07%	4.6%	1%
	• LACERATION		45.02 %		
	✓ PENETRATING	16%	33.89 %	15.1%	23%
	✓ I.O.F.B.	-	4.01%	1%	2%
	✓ PERFORATING	-	7.12%	2%	-
	CLOSE GLOBE INJURY	38%	47.74 %	45.4%	60.5%
	• CONTUSION	18%	38.55 %	10.9%	46%
	• LAMELLAR LACERATION	20%	9.18%	34.5%	1.5%

	ADNEXAL	34%	4.79%	30.6%	8%
CHEMICAL		3%	0.39%		
THERMAL		3%	-		

TIME DELAY

56% of cases presented to casualty within six hours of injury. Only 9% of cases presented after 24 hours. These findings are inconsistent with a study by Verma N et al., where most patients came 4-5 days after trauma. (48) Patients presenting early and promptly in this region may signify better awareness for ocular trauma in the population. This is also helped by the fact that our hospital is the primary referral center in this region. Similar to a study by Puri S et al. where 69% of cases were reported within 24 hours of injury. (58) In a study by Emem et al., 18.6% of the trauma cases reported within 24 hrs of injury, 39.1% within one week, 22.2% reported between one week and one month, 13.2% after one month, 4% did not recall when they had the injury. (59)

CAUSE OF INJURY

In the present study, 54% of ocular injuries were caused by road traffic accidents, followed by 25% domestic injuries, 6% while playing sports or doing leisure activities, and 5% by assault. A study by Maiya AS showed agricultural injuries as the most common cause (46 patients; 48.4%). Following that, 14 patients were involved in automobile accidents. (14.7%), sports, playing, and recreational activities in 14 patients(14.7%), and accidental falls in 13 patients (13.7%). (14) Study by Kushwaha RN et al. concluded that R.T.A. was the commonest (64.3%) cause of trauma. (60)

AGENT

In the present study, 13 % of cases had an injury with a block of wood (i.e., while cutting wood for fire with an axe, a big block of wood would hit the eye). Unlike other studies where Injury with a metallic object was the most common cause. (57,61-63) Study of JUDO showed wood was the commonest material accounting for 68 (40.9%), followed by metal, 30(18.1). (56)

PATTERN OF OCULAR TRAUMA

	PATTERN OF OCULAR TRAUMA	PRESENT STUDY N(%)	ALEM KD ET AL (6)	PURI S ET AL (58)
EYELID	LID TEAR	25%	12.55%	12.8%
	PERIORBITAL EDEMA	23%		
	ECCHYMOSIS	34%		9%
CONJUNCTIVA	CHEMOSIS	30%		

	CONGESTION	29%		
	CONJUNCTIVAL TEAR	6%		13.9%
	SUB CONJUNCTIVAL HEMORRHAGE	4%	7.12%	16.5%
CORNEA	CORNEAL TEAR	20%	39.33%	9%
	SCLERAL TEAR			5.8%
IRIS	IRIDODIALYSIS	12%	20.70%	
	SPHINCTER TEAR	11%		
	IRIS PROLAPSE	9%		
LENS	TRAUMATIC CATARACT	8%	24.45%	10.1%
	LENS DROP IN VITREOUS	4%		
	LENS DISLOCATION	3%		8.5%
AC	HYPHAEMA	19%	18.37%	13.3%
RAPD	PRESENT	27%		
POSTERIOR SEGMENT	BERLIN'S EDEMA	22%		
	CHOROIDAL RUPTURE	1%		1%
	EXUDATES IN VITREOUS	1%		
	GROSS RETINAL EDEMA WITH HEMORRHAGES	2%		2.1%
	LENS DROP IN VITREOUS	4%		
	VITREOUS HEMORRHAGE	14%	3.62%	4.8%
	OPTIC NERVE AVULSION + VITREOUS HEMORRHAGE + CHOROIDAL DETACHMENT	1%		
	POSTERIOR VITREOUS DETACHMENT	4%		
	RETINAL DETACHMENT	4%	1.03%	1%
	TRAUMATIC MACULAR HOLE	4%		
	TRAUMATIC OPTIC NEUROPATHY	2%		3.7%

In our study, the cornea was affected in 25% of patients. In a study by Alem et al., 39.33% of patients had a corneal tear. (6) Cornea was the most affected part of the eye (63.2 %) according to the JUDO study, which was also true in Menelik II Hospital studies. (56,62-63)

8% of patients in our study showed early signs of traumatic cataracts. They were treated with cataract surgery and intraocular lens implantation where ever possible. Three patients underwent lens extraction with anterior vitrectomy for lens dislocation into the anterior chamber. Four patients with lens drop in the vitreous underwent lens extraction and scleral fixated intraocular lens implantation.

According to a blunt trauma study, hyphema is a common complication of blunt eye trauma in approximately 50% of patients. (64) In our study, 19 patients (19 %) had hyphema, with five patients having total hyphema. Bed rest, pressure bandage and topical steroids, cycloplegics, and antiglaucoma therapy helped the hyphema resolve.

14 % of patients had vitreous hemorrhage in our study, which was detected on a B-scan and treated conservatively. Nontraumatic causes account for most of vitreous

hemorrhage (diabetic retinopathy, sickle cell disease, posterior vitreous detachment, retinal vein occlusion, leukemia), yet trauma accounts for 12–31 % (in various cases) studies) and is the most common cause of vitreous hemorrhage in younger patients. (56,65)

Berlin's edema, also known as "Commotio retina," is best described as a transient, well-defined greyish-white opacification of the retina following blunt ocular trauma. We observed twenty-two cases of commotio retinae that were treated conservatively. According to studies, this injury occurs in 9% to 14% of blowout fractures. (66)

VISION

51% of cases had vision Counting finger more than 3 meters, 14% had Hand Movements, 6% had perception of light, and 6 % had no perception of light. Only 5 % had 6/6p vision and 3% had 6/9p. In a study by W Wang et al., Light perception/ hand movement accounted for the highest proportion in initial VA (64.1%). (47)

TREATMENT

In this study, 42% of cases were managed conservatively with medical treatment; lid tear suturing was done for 25% of cases, corneoscleral tear suturing was done for 20% of cases. In a study by Nadeem S et al. (43.4%) needed conservative management, the simple corneal repair was required in 9 (10.8%) cases, with another 9 (10.8%) cases requiring a corneoscleral repair with iris repositioning, 8 (9.6%) patients treated by a corneal repair with iris repositioning. (67) These results are also consistent with a study by Alem K.D. et al. where surgery was performed in 53.17% (411) patients. Corneal tear repair was performed in 51.8% of patients, and it was the most often performed procedure, trailed by lens extraction/ lens fragment washout (21.41%). (6)

CONCLUSION

Ocular trauma had male predilection and was common in young adults. The most common cause of eye injuries was automobile accidents. This necessitates the implementation of improved road safety measures in this region. Closed globe injuries (38%) were more common than open globe (22%) injuries. In mechanical injury, close globe injuries included 18% contusion and 20% lamellar laceration. In open globe injury, 16% were penetrating injuries, and 6% were rupture, rest 34 % were adnexal injury. There were no cases of I.O.F.B. in the present study. Majority of patients presented within 6 hours of trauma to our center. In this study, the most commonly affected structures were the eyelid and adnexa. There was a significant number of berlin's edema in this study. The use of B.E.T.T. classification of ocular trauma at the time of presentation helps to categorize ocular injuries. With regular use of ocular trauma, score ophthalmologists can effectively communicate to the patient the visual prognosis. Ocular trauma is a common cause of ocular morbidity and vision loss. Appropriate preventive measures should be implemented in potentially dangerous locations.

SUMMARY

"A PROFILE OF OCULAR TRAUMA IN PATIENTS ATTENDING SHRI B.M. PATIL MEDICAL COLLEGE AND HOSPITAL, VIJAYAPURA" was carried out from October 2019 to April 2021 in the Department of Ophthalmology at B.L.D.E (Deemed To Be University) Shri. B. M. Patil Medical College and Hospital, Vijayapur.

This prospective cross-sectional study included patients with a history of both mechanical and non- mechanical trauma attending the casualty and outpatient departments. Sex, age, occupation of patients, residence, financial status, time of the inflicted injury, place and way of inflicting the injury, visual acuity on admission were noted. In addition, the type of injury was analyzed, i.e., contusion, lamellar laceration, mixed, penetrating, perforating, I.O.F.B. or rupture. A detailed history was obtained regarding the trauma, its nature & circumstances. Study of 92 (≈100) Ocular Trauma patients allowed the study to determine profile of the ocular trauma attending Shri B.M.Patil Medical College and Hospital.

Observations made during the study period were recorded, tabulated, and analyzed. They were as follows:

- Majority (23%) of ocular trauma occurs in the age group 20-30 years.
- Ocular trauma was more in males (83%) due to more males involved in driving, industrial and agricultural occupations.
- 83% of cases were from a rural background, and 17% were from an urban background.
- In 47% of cases right eye was involved, whereas in 40% of cases, the left eye was affected. In 13% of cases, both eyes were involved.
- Because of COVID -19 lockdown restrictions number of patients presenting with ocular trauma significantly decreased.
- There were 94 % mechanical ocular trauma, 3 % chemical injury, and 3 % thermal injury.
- There were 38% close globe injuries, 22% open globe injuries, and 34% adnexal injuries.
- This included 18% contusion and 20% lamellar laceration.
- In open globe injury, 16% were penetrating injuries, and 6% were globe rupture

- Among closed globe injuries, 20% comprised zone 1 injuries, 2% injuries to zone 2, and 16% zone 3.
- The open-globe injury involved zone 1 in 7% of patients (corneal tear with iris prolapse) and 9% for zones 2 (corneoscleral tear), and 6% zone 3 (scleral tear extending beyond equator).
- 54% of ocular injuries were caused by road traffic accident, 25% were domestic injuries, 6% while sports or doing leisure activities, and 5% were by assault. 13 % of cases had an injury with a block of wood (i.e., while cutting wood for fire with an axe a big block of wood hit the eye).
- 56% cases presented to casualty within six hours of injury.
- Eyelid and adnexa were the most commonly affected ocular structure.
- 59% cases had posterior segment involvement of which 22% had berlins edema.
- 46% cases with ocular trauma had orbital involvement on CT-SCAN.
- 51% cases had vision C.F.> 3MTR, 14% had vision of HM+, 6% had perception of light and 6 % had no perception of light.
- 42% cases were managed conservatively; lid tear suturing was done for 25% cases, corneo-scleral tear suturing was done for 20% of cases.

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ANNEXURES

I. INSTITUTIONAL ETHICAL COMMITTEE CLEARANCE CERTIFICATE

IEC/131/19
22/11/2019

B.L.D.E. (DEEMED TO BE UNIVERSITY)
(Declared vide notification No. F.9-37/2007-U.3 (A) Dated. 29-2-2008 of the MHRD, Government of India under Section 3 of the UGC Act, 1956)
The Constituent College
SHRI. B. M. PATIL MEDICAL COLLEGE, HOSPITAL AND RESEARCH CENTRE

INSTITUTIONAL ETHICAL CLEARANCE CERTIFICATE

The ethical committee of this college met on 13-11-2019 at 3-15 pm to scrutinize the synopsis of Postgraduate students of this college from Ethical Clearance point of view. After scrutiny the following original/corrected and revised version synopsis of the Thesis has been accorded Ethical Clearance

Title: A Profile of ocular trauma in patients attending Shri.B.M.Patil Medical College & Hospital Vijayapur.

Name of PG student: Dr. Piyush Sao ,Department of Ophthalmology

Name of Guide/Co-investigator: Dr.Vallabha. K, Professor Department of Ophthalmology

DR RAGHVENDRA KULKARNI
CHAIRMAN
Institutional Ethical Committee
BLDEU's Shri B.M. Patil
Medical College,BIJAPUR-586103

Following documents were placed before Ethical Committee for Scrutinization:

1. Copy of Synopsis / Research project
2. Copy of informed consent form
3. Any other relevant documents.

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B.L.D.E.(Deemed to be University)
SHRI B.M.PATIL MEDICAL COLLEGE,VIJAYAPUR-586103
INSTITUTIONAL ETHICAL COMMITTEE

Date: 13-11-2019

1. Name of UG/PG Students/Researcher: Dr. Piyush Sao
2. Department : Ophthalmology
3. Title : A Profile of ocular trauma in patients attending Shri.B.M.Patil Medical College & Hospital Vijayapur.
4. Guide/Co-Guide/Principle Researcher: Dr.Vallabha. K, Professor
5. Date of Admission (PG Only) :

Observation : There are no ethical issues.

I.E.C. Remarks : Ethical Clearance accorded/be Chairman after corrected revised version is submitted by stipulated time.
1. Any alternation in Synopsis protocol should be intimated to E.C. in writing for review & approval.
2. Any adverse effects to subject of the study should be intimated in writing to E.C.
3. If study is stopped or an included patient is out of study inform E.C. the same with reason.

Signature of the Committee Members :

1. Dr Raghavendra Kulkarni, Chairman
2. Dr Tejaswini Vallabha
3. Dr Akram Naikawadi
4. Dr P.B.Jaju
5. Dr Chandrashekhar Bhuyyar
6. Dr Pranesh Jahagirdar
7. Dr Manjunatha Aithala
8. Dr Satish Patil
9. Dr Mohammed Shannawaz

II. SAMPLE INFORMED CONSENT FORM:

TITLE OF THE PROJECT	:	**A PROFILE OF OCULAR TRAUMA IN PATIENTS ATTENDING SHRI B.M. PATIL MEDICAL COLLEGE AND HOSPITAL, VIJAYAPURA**
PG GUIDE	:	**DR. VALLABHA.K.** DOMS, M.S. (OPHTHALMOLOGY) PROFESSOR DEPARTMENT OF OPHTHALMOLOGY
PRINCIPAL INVESTIGATOR	:	**DR. PIYUSHI SAO** DEPARTMENT OF OPHTHALMOLOGY

RISK AND DISCOMFORTS:

I understand that I may experience some pain and discomforts during the examination or during my treatment. This is mainly the result of my condition and the procedures of this study are not expected to exaggerate these feelings which are associated with the usual course of treatment.

BENEFITS:

I understand that my participation in the study will help to find and document the profile of ocular trauma in Vijayapura and will help in formulating preventive measures for the same.

CONFIDENTIALITY:

I understand that the medical information produced by this study will become a part of hospital records and will be subject to the confidentiality. Information of sensitive personal nature will not be part of the medical record, but will be stored in the investigations research file.

If the data are used for publication in the medical literature or for teaching purpose, no name will be used and other identifiers such as photographs will be used only with special written permission. I understand that I may see the photograph before giving the permission.

REQUEST FOR MORE INFORMATION:

I understand that I may ask more questions about the study to **Dr. VALLABHA. K** in the Department of Ophthalmology who will be available to answer my questions or concerns. I understand that I will be informed of any significant new findings discovered during the course of the study, which might influence my continued participation. A copy of this consent form will be given to me to keep for careful reading.

REFUSAL FOR WITHDRAWAL OF PARTICIPATION:

I understand that my participation is voluntary and that I may refuse to participate or may withdraw consent and discontinue participation in the study at any time without prejudice. I also understand that **Dr. PIYUSHI SAO** may terminate my participation in the study after she has explained the reasons for doing so.

INJURY STATEMENT:

I understand that in the unlikely event of injury to me resulting directly from my participation in this study, if such injury were reported promptly, the appropriate treatment would be available to me. But , no further compensation would be provided by the hospital. I understand that by my agreements to participate in this study and not waiving any of my legal rights.

I have explained to _____the purpose of the research, the procedures required and the possible risks to the best of my ability.

_____ _____

Dr. PIYUSHI SAO Date
(Investigator)

STUDY SUBJECT CONSENT STATEMENT:

I confirm that Dr. PIYUSHI SAO has explained to me the purpose of research, the study procedure, that I will undergo and the possible discomforts as well as benefits that I may experience in my own language. I have been explained all the above in detail in my own language and I understand the same. Therefore, I agree to give consent to participate as a subject in this research project.

_____ _____

(Participant) Date

_____ _____

(Witness to signature) Date

III. PROFORMA FOR CASE TAKING

DEPARTMENT OF OPHTHALMOLOGY

B.L.D.E U'S S.H.R.I. B.M.PATIL MEDICAL COLLEGE HOSPITAL &RESEARCH CENTRE, VIJAYAPURA-586103

Case No : OPD/IPD No: Date :

Name: Age: Sex:

Occupation: Address :

Economic status:

Time of Injury:

Time of Presentation:

Place of injury:

Cause for Injury:

Type of Injury: MECHANICAL ☐ THERMAL ☐ RADIATIONAL ☐

CHEMICAL ☐ ELECTRICAL ☐ OTHERS ☐

Agent Causing Injury:

Chief complains:

History of presenting illness: Patient was apparently alright _____earlier then

H/o diminution of vision	Yes/ No
H/o pain	Yes/ No
H/o redness	Yes/No
H/o watering	Yes/No
H/o photophobia	Yes/No
H/o foreign body sensation	Yes/No

Other complaints:

Past history:

Personal history:

Treatment history:

GENERAL PHYSICAL EXAMINATION

Pallor:
Icterus: B.P.:
Cyanosis: PR:
Clubbing:
Edema:

OCULAR EXAMINATION

	RE	**LE**
EXTERNAL APPEARANCE		
OCULAR MOTILITY		
EYELIDS		
CONJUNCTIVA		
CORNEA		
A/C		
IRIS		
PUPIL		
LENS		
DISTANT VISION		
NEAR VISION		
TENSION (By AT/NCT)		

FUNDUS:-
Media-
Disc-
Blood vessel-
Background-
Macula-

OCULAR TRAUMA SCORE:

1. INITIAL VISION	RAW POINTS
No perception of light	60
PL + / HM +	70
1/200-19/200	80
6/60- 6/18 20/200-20/50	90
> 6/12 >20/40	100
2. RUPTURE	-23
3. ENOPHTHALMITIS	-17
4. PERFORATING INJURY	-14
5. RETINAL DETACHMENT	-11
6. AFFERENT PUPILLARY DEFECT	-10

DIAGNOSIS:-

TREATMENT GIVEN:

IV. **MASTER CHART**

	Eye	Site	CLOSE	ZONE	GRADE	INJURY TYPE	Time Ca	cause	agent	RURAL/URBA	RTA PLACE	place	TYPE OF INJU	eyelid	conjuctiva	cornea	iris (sphincter tear)	LENS	Anterial Chambe	pupil (rapid +)	fundus	CT FINDING	vision	treatment
2	left	CLOSE	I		3	LAMELLAR LAC	3 month	DOMESTIC INJU	WOOD	RURAL		HOME	bagewar	mechanical	ECTROPION	CIRCUMCILIARY	PARTIAL THICKNESS CORNE	NORMAL	LENS DROP IN VITREOU	NORMAL	ABSENT	LENS IN VITREOUS + VITREOUS HEMORRH	NORMAL	cfc 3mtr	LENS EXTRACTION + SFIOL SFIOL+ VIT
3	RIGHT	ADNEXAL		1	ADNEXAL		09:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	KORAV	mechanical	CLV	NORMAL	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	SOFT TISSUE EDEMA	cfc 3mtr	LID TEAR SUTURING	LID SUT
4	left	ADNEXAL		1	ADNEXAL		00:05	ROAD TRAFFIC	ROAD TRAFF	URBAN		URBAN	NJAYAI	mechanical	PERIORBITAL EDEMA + ECC	NORMAL	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	FRACTURE LEFT LATEF	cfc 3mtr	topical + observation	
5	RIGHT	CLOSE	I	4	LAMELLAR LAC		00:00	ROAD TRAFFIC	ROAD TRAFF	URBAN		URBAN	NJAYAI	mechanical	CLV + PERIORBITAL EDEMA	CHEMOSIS	clear		sphincter tear	TRANSPARENT	NORMAL	PRESENT	GROSS RETINAL EDEMA WITH HEMORRH	NORMAL	PL POSITIVE	LID TEAR SUTURING	
6	both	ADNEXAL		1	ADNEXAL		03:30	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	bagewar	mechanical	CLV + PERIORBITAL EDEMA	CHEMOSIS	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	FRACTURE MEDIAL WA	cfc 3mtr	LID TEAR SUTURING	
7	left	ADNEXAL		1	ADNEXAL		05:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	MUDIWA	mechanical	PERIORBITAL EDEMA + ECC	CHEMOSIS	clear		NORMAL	SMC	NORMAL	ABSENT	NORMAL	FRACTURE LEFT ORBIT	cfc 3mtr	topical + observation	
8	left	ADNEXAL		1	ADNEXAL		04:00	SPORTS/LEISU	ROD	RURAL		HOME	MAKHA	mechanical	PERIORBITAL EDEMA	CHEMOSIS	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	NORMAL	6/9P	topical + observation	
9	RIGHT	OPEN	III	5	PENETRATING		02:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	BAGALI	mechanical	PERIORBITAL EDEMA	CHEMOSIS	CORNEO-SCLERAL TEAR	sphincter tear	TRAUMATIC CATARAC	HYPHAEMA	PRESENT	NORMAL	FRACTURE ROOF AND	PL MEGATIVE	enucleation	EN
10	RIGHT	ADNEXAL		1	ADNEXAL		08:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	BAGALI	mechanical	PERIORBITAL EDEMA + ECC	CHEMOSIS	clear		A	TRANSPARENT	NORMAL	ABSENT	NORMAL	FRACTURE RIGHT ORBI	6/9P	topical + observation	MED
11	RIGHT	CLOSE	I	3	LAMELLAR LAC		05:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	bagewar	mechanical	PERIORBITAL EDEMA + ECC	CHEMOSIS	CORNEAL EPITHILIAL INJURY	sphincter tear	TRANSPARENT	HYPHAEMA	ABSENT	GROSS RETINAL EDEMA WITH HEMORRH	FRACTURE ROOF AND	1/60P	topical + observation	
12	RIGHT	ADNEXAL		1	ADNEXAL		02:00	DOMESTIC INJU	SELF FALL	RURAL		HOME	NJAYAI	mechanical	CLV	CHEMOSIS	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	NOT DONE	6/9P	LID TEAR SUTURING	
13	left	OPEN	I	4	PENETRATING		02:45	ASSAULT	ROD	RURAL		HOME	bagewar	mechanical	NORMAL	CHEMOSIS	FULL THICKNESS CORNEAL	sphincter tear	LENS DROP IN VITREOU	HYPHAEMA	PRESENT	VITREOUS HEMORRHAGE	NOT DONE	PL POSITIVE	CORNEAL TEAR SUTURING + PRS ABSCESS
14	RIGHT	ADNEXAL		1	ADNEXAL		01:00	DOMESTIC INJU	WOOD	URBAN		HOME	NJAYAI	mechanical	NORMAL	CONJUCTIVAL TI	clear		TRANSPARENT	NORMAL	ABSENT	NORMAL	NOT DONE	6/9P	topical + observation	
15	left	OPEN	II	5	RUPTURE		02:30	DOMESTIC INJU	ROD	RURAL		HOME	home	mechanical	NORMAL	CHEMOSIS	CORNEO-SCLERAL TEAR	NORMAL	TRAUMATIC CATARAC	HYPHAEMA	PRESENT	OPTIC NERVE AVULSION + VITREOUS HEM	NOT DONE	PL MEGATIVE	enucleation	
16	both	C		1	C		00:20	SPORTS/LEISU	sodium	URBAN		SCHOOL	NJAYAI	chemical	1DEGREE CHEMICAL BURN	CIRCUMCILIARY	CORNEAL EPITHILIAL INJURY	NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	NOT DONE	6/6 P	EYE WASH PATCHING	EW
17	left	ADNEXAL		2	ADNEXAL		#####	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	GUDOH	mechanical	CLV	CHEMOSIS	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	NOT DONE	cfc 3mtr	LID TEAR SUTURING	
18	RIGHT	ADNEXAL		1	ADNEXAL		02:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	DEVARI	mechanical	CLV	CHEMOSIS	clear		SMC	NORMAL	ABSENT	NORMAL	NOT DONE	cfc 3mtr	LID TEAR SUTURING	LID+
19	left	CLOSE	I	4	LAMELLAR LAC		07:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	MDI	mechanical	PERIORBITAL EDEMA + ECC	CHEMOSIS	clear		iridodialysis	SMC	NORMAL	PRESENT	VITREOUS HEMORRHAGE	fracture left orbit wall	hm +	topical + observation	
20	left	OPEN	II	4	PENETRATING		11:00	WORKPLACE IN	WOOD	RURAL		FIELD	RAICHI	mechanical	PERIORBITAL EDEMA	CHEMOSIS	CORNEO-SCLERAL TEAR	iris prolapse	TRAUMATIC CATARAC	NORMAL	PRESENT	VITREOUS HEMORRHAGE	NOT DONE	CF-CF	CORNEAL TEAR SUTURING + PRS ABSCESS	
21	RIGHT	OPEN	I	4	PENETRATING		06:00	WORKPLACE IN	WOOD	RURAL		FIELD	SOLAPI	mechanical	PERIORBITAL EDEMA	CHEMOSIS	CORNEAL TEAR	iris prolapse	TRAUMATIC CATARAC	VITREOUS IN AI	PRESENT	POSTERIOR VITREOUS DETACHMENT	NOT DONE	hm +	LENS EXTRACTION + SFIOL IMPLANTATION	
22	both	ADNEXAL		1	ADNEXAL		12:00	WORKPLACE IN	SELF FALL	RURAL		FIELD	BABLEI	mechanical	NORMAL	CLEAR	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	NOT DONE	6/6P	topical + observation	
23	left	CLOSE	II	2	CONTUSION		03:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	kambogi	mechanical	CLV + CANALICULAR TEAR	CIRCUMCILIARY	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	NOT DONE	cfc 3mtr	LID TEAR SUTURING	
24	RIGHT	CLOSE	I	4	LAMELLAR LAC		04:00	DOMESTIC INJU	HAND	URBAN		HOME	NJAYAI	mechanical	NORMAL	CIRCUMCILIARY	clear		PCIOL	EXUDATES	PRESENT	EXUDATES	NOT DONE	PL POSITIVE	INTRAVITREAL ANTIBIOTI	WA
25	RIGHT	ADNEXAL		1	ADNEXAL		03:00	ROAD TRAFFIC	ROAD TRAFF	URBAN		URBAN	NJAYAI	mechanical	CLV	CIRCUMCILIARY	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	NOT DONE	cfc 3mtr	LID TEAR SUTURING	
26	RIGHT	ADNEXAL		1	ADNEXAL		02:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	MDI	mechanical	CLV	CONGESTION	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	NOT DONE	cfc 3mtr	LID TEAR SUTURING	
27	both	T		1	T		16:00	DOMESTIC INJU	HOT WATER	URBAN		HOME	TALIKOT	THERMAL	1degree thermal burn	NORMAL	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	NOT DONE	cfc 3mtr	topical + observation	
28	both	ADNEXAL		1	ADNEXAL		05:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	MDI	mechanical	PERIORBITAL EDEMA + ECC	NORMAL	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	fracture left orbit floor + roc	cfc 3mtr	topical + observation	
29	both	ADNEXAL		1	ADNEXAL		03:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	MDI	mechanical	periorbital edema	CHEMOSIS	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	left orbit floor fracture + rig	cfc 3mtr	topical + observation	
30	RIGHT	ADNEXAL		1	ADNEXAL		05:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	ARVI	mechanical	CLV	CHEMOSIS	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	NOT DONE	cfc 3mtr	LID TEAR SUTURING	
31	left	ADNEXAL		1	ADNEXAL		15:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	MDI	mechanical	PERIORBITAL EDEMA + ECC	CHEMOSIS	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	left medial and lateral walls	cfc 3mtr	topical + observation	
32	RIGHT	OPEN	I	4	PENETRATING		05:00	WORKPLACE IN	WOOD	RURAL		FIELD	SINDAG	mechanical	NORMAL	CIRCUMCILIARY	PARTIAL THICKNESS CORNE	SECLUCIO PUPIL	TRAUMATIC CATARAC	VITREOUS IN AI	PRESENT	NORMAL	NOT DONE	hm +	CORNEAL TEAR SUTURING + LENS EXTRA	
33	RIGHT	OPEN	I	4	PENETRATING		06:00	WORKPLACE IN	WOOD	RURAL		FIELD	SINDAG	mechanical	PERIORBITAL EDEMA	CIRCUMCILIARY	FULL THICKNESS CORNEAL	PRS PROLAPSE	TRAUMATIC CATARAC	NORMAL	PRESENT	TRAUMATIC OPTIC NEUROPATHY	NOT DONE	hm +	CORNEAL TEAR SUTURING + PRS ABSCESS	
34	RIGHT	ADNEXAL		1	ADNEXAL		04:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	DHARW	mechanical	periorbital edema + ecchymosis SCH		clear		SMC	NORMAL	ABSENT	NORMAL	left lateral wall of orbit + frac	cfc 3mtr	LID TEAR SUTURING	
35	left	CLOSE	I	4	LAMELLAR LAC		08:00	WORKPLACE IN	WOOD	RURAL		FIELD	DEVARI	mechanical	PERIORBITAL EDEMA	CIRCUMCILIARY	CORNEAL EPITHILIAL INJURY	iridodialysis	LENS SUBLUXATION		PRESENT	TRAUMATIC OPTIC NEUROPATHY	NOT DONE	hm +	LENS EXTRACTION	
36	left	ADNEXAL		1	ADNEXAL		03:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	DHARW	mechanical	CLV + PERIORBITAL EDEMA	CHEMOSIS	clear		NORMAL	PCIOL	NORMAL	ABSENT	NORMAL	PNEUMORBIT	cfc 3mtr	LID TEAR SUTURING	
37	left	CLOSE	III	3	CONTUSION		03:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	HONAVA	mechanical	CLV + PERIORBITAL EDEMA	CHEMOSIS	clear		NORMAL	PCIOL	NORMAL	ABSENT	BERLINS EDEMA	SOFT TISSUE SWELLING CF 2MTR		LID TEAR SUTURING	
38	RIGHT	CLOSE	III	2	CONTUSION		01:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	SINDAG	mechanical	PERIORBITAL EDEMA + ECC	CONGESTION	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLINS EDEMA	fracture roof of left orbit	cfc 3mtr	topical + observation	
39	left	CLOSE	I	3	LAMELLAR LAC		16:00	DOMESTIC INJU	SELF FALL	URBAN		HOME	NJAYAI	mechanical	PERIORBITAL EDEMA + ECC	CHEMOSIS	clear		SMC	TRANSPARENT	NORMAL	ABSENT	BERLINS EDEMA	left lateral wall of orbit + frac	6/60P	topical + observation	
40	RIGHT	CLOSE	I	4	LAMELLAR LAC	1 YEAR	DOMESTIC INJU	WOOD		RURAL		HOME	MDI	mechanical	NORMAL	NORMAL	clear		TRAUMATIC CATARAC	NORMAL	PRESENT	POSTERIOR VITREOUS DETACHMENT	left lateral wall of orbit + frac	hm +	LENS EXTRACTION + PCIOL IMPLANTATIC	
41	both	CLOSE	I	3	LAMELLAR LAC		02:00	DOMESTIC INJU	SELF FALL	RURAL		home	BABLEI	mechanical	PERIORBITAL EDEMA + ECC	CHEMOSIS	clear		PCIOL	NORMAL	ABSENT	POSTERIOR VITREOUS DETACHMENT	left lateral wall of orbit + frac	6/60P	topical + observation	
42	left	OPEN	III	4	PENETRATING	1 YEAR	SPORTS/LEISU	CRICKET BAL		RURAL		SCHOOL	SINDAG	mechanical	PERIORBITAL EDEMA	CONGESTION	CORNEO-SCLERAL TEAR	NORMAL	TRANSPARENT	NORMAL	ABSENT	TRAUMATIC MACULAR HOLE	left lateral wall of orbit + frac	hm +	CORNEO SCLERAL TEAR SUTURING	
43	left	OPEN	I	4	PENETRATING	3 month	DOMESTIC INJU	WOOD		RURAL		HOME	ROHAR	mechanical	PERIORBITAL EDEMA	CONGESTION	FULL THICKNESS CORNEAL	NORMAL	SMC	HYPOPYON	PRESENT	RETINAL DETACHMENT	left lateral wall of orbit + frac	hm +	topical + observation	
44	left	CLOSE	I	4	LAMELLAR LAC	6 HRS	ROAD TRAFFIC	ROAD TRAFF		RURAL		RURAL HIGH	SINDAG	mechanical	PERIORBITAL EDEMA	CHEMOSIS	clear		LENS SUBLUXATION	NORMAL	PRESENT	LENS DROP IN VITREOUS	left lateral wall of orbit + frac	hm +	LENS EXTRACTION + SFIOL IMPLANTATION	
45	left	CLOSE	I	4	LAMELLAR LAC	6 HRS	ROAD TRAFFIC	ROAD TRAFF		RURAL		RURAL HIGH	MDI	mechanical	PERIORBITAL EDEMA	NORMAL	clear		LENS DROP IN VITREOU	NORMAL	PRESENT	RETINAL DETACHMENT	left lateral wall of orbit + frac	hm +	lens extraction + retinopexy + silicon oil	
46	RIGHT	CLOSE	I	4	LAMELLAR LAC	9 HRS	WORKPLACE IN	WOOD		RURAL		field	DHARW	mechanical	NORMAL	NORMAL	clear		LENS SUBLUXATION	NORMAL	PRESENT	LENS DROP IN VITREOUS	left lateral wall of orbit + frac	hm +	LENS EXTRACTION + SFIOL IMPLANTATION	
47	left	CLOSE	I	2	LAMELLAR LAC		04:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	ATHAR	mechanical	PERIORBITAL EDEMA	CHEMOSIS	clear		TRANSPARENT	NORMAL	PRESENT	TRAUMATIC MACULAR HOLE	left lateral wall of orbit + frac	cfc 3mtr	topical + observation	
48	RIGHT	CLOSE	I	4	LAMELLAR LAC		05:00	SPORTS/LEISU	CRICKET BAL			HOME	SINDAG	mechanical	PERIORBITAL EDEMA	NORMAL	clear		NORMAL	LENS DROP IN VITREOU	NORMAL	PRESENT	RETINAL DETACHMENT	left lateral wall of orbit + frac	hm +	lens extraction + retinopexy + silicon oil	
49	left	CLOSE	III	1	CONTUSION		04:30	ROAD TRAFFIC	ROAD TRAFF	RURAL		RURAL HIGH	KHAGALI	mechanical	PERIORBITAL EDEMA	CHEMOSIS	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLINS EDEMA	SOFT TISSUE SWELLING	cfc 3mtr	topical + observation	
50	left	OPEN	III	5	RUPTURE		04:00	DOMESTIC INJU	BULL HORN	RURAL		HOME	MDI	mechanical	NORMAL	CORNEO-SCLERAL TEAR	NORMAL	TRAUMATIC CATARAC	NORMAL	PRESENT	VITREOUS HEMORRHAGE	left lateral wall of orbit + frac	PL MEGATIVE	enucleation	
51	RIGHT	CLOSE	I	1	LAMELLAR LAC		01:00	ROAD TRAFFIC	ROAD TRAFF	URBAN		URBAN	NJAYAI	mechanical	PERIORBITAL EDEMA + ECC	CHEMOSIS	clear		NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLINS EDEMA	FRACTURE FLOOR AND	cfc 3mtr	topical + observation	

52	left	CLOSE	I	1	LAMELLAR LA(	11:00	ROAD TRAFFIC	ROAD TRAFF	URBAN	URBAN	VIJAYAI	mechanical	PERIORBITAL EDEMA + ECC	NORMAL	clear	NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLIN'S EDEMA	SOFT TISSUE SWELLING	CF > 3MTR	topical + observation
53	RIGHT	CLOSE	I	1	LAMELLAR LA(	02:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	ALAME	mechanical	CLW + PERIORBITAL EDEMA	CONGESTION	clear	NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLIN'S EDEMA	FRACTURE LATERAL W	cf> 3mtr	topical + observation
54	RIGHT	CLOSE	III	1	CONTUSION	03:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	ALAME	mechanical	PERIORBITAL EDEMA	NORMAL	clear	NORMAL	SIMC	NORMAL	ABSENT	BERLIN'S EDEMA	SOFT TISSUE SWELLING	cf> 3mtr	topical + observation
55	both	T		2	T	02:30	DOMESTIC INJU	KEROSENE	RURAL	HOME	SINDAG	THERMAL	PERIORBITAL EDEMA	NORMAL	clear	NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLIN'S EDEMA	left lateral wall of orbit frac	cf> 3mtr	topical + observation
56	both	CLOSE	III	2	CONTUSION	04:30	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	DEVARI	mechanical	PERIORBITAL EDEMA + ECC	NORMAL	clear	NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLIN'S EDEMA	SOFT TISSUE SWELLING	cf> 3mtr	topical + observation
57	RIGHT	CLOSE	III	1	CONTUSION	03:45	DOMESTIC INJU	DOG BITE	RURAL	HOME	TALIKO'	mechanical	CLW	NORMAL	clear	NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLIN'S EDEMA	left lateral wall of orbit frac	cf> 3mtr	ANTI RABIES
58	RIGHT	CLOSE	III	1	CONTUSION	09:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	HONAW	mechanical	PERIORBITAL EDEMA + ECC	NORMAL	clear	NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLIN'S EDEMA	SOFT TISSUE SWELLING	cf> 3mtr	topical + observation
59	left	CLOSE	I	4	LAMELLAR LA(	09:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	INDI	mechanical	NORMAL	NORMAL	clear	NORMAL	TRANSPARENT	NORMAL	ABSENT	VITREOUS HEMORRHAGE	left lateral wall of orbit frac	HM+	topical + observation
60	RIGHT	CLOSE	I	1	LAMELLAR LA(	02:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	MUDDE	mechanical	CLW + PERIORBITAL EDEMA	NORMAL	clear	NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLIN'S EDEMA	left lateral wall of orbit frac	cf> 3mtr	LID TEAR SUTURING
61	both	CLOSE	I	4	LAMELLAR LA(	09:00	ROAD TRAFFIC	ROAD TRAFF	RURAL		HALEGI	mechanical	CLW + PERIORBITAL EDEMA	NORMAL	clear	NORMAL	TRANSPARENT	NORMAL	PRESENT	LENS DROP IN VITREOUS + VITREOUS HEM	FRACTURE OF LEFT ME	PL POSITIVE	topical + observation
62	left	CLOSE	III	1	CONTUSION	04:40	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	INDI	mechanical	CLW + PERIORBITAL EDEMA	CHEMOSIS	clear	NORMAL	SIMC	NORMAL	ABSENT	BERLIN'S EDEMA	left lateral wall of orbit frac	cf> 3mtr	LID TEAR SUTURING
63	left	CLOSE	III	1	CONTUSION	06:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	KEBARI	mechanical	CLW + PERIORBITAL EDEMA	NORMAL	clear	NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLIN'S EDEMA	left lateral wall of orbit frac	cf> 3mtr	LID TEAR SUTURING
64	both	CLOSE	III	1	CONTUSION	03:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	SINDAG	mechanical	PERIORBITAL EDEMA + ECC	NORMAL	clear	NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLIN'S EDEMA	SOFT TISSUE SWELLING	cf> 3mtr	topical + observation
65	RIGHT	CLOSE	III	1	CONTUSION	06:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	bagewac	mechanical	CLW + PERIORBITAL EDEMA	CONGESTION	clear	NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLIN'S EDEMA	SOFT TISSUE SWELLING	cf> 3mtr	topical + observation
66	RIGHT	ADNEXAL		1	ADNEXAL	03:00	ROAD TRAFFIC	ROAD TRAFF	URBAN	URBAN	VIJAYAI	mechanical	CLW	NORMAL	clear	NORMAL	TRANSPARENT	Normal	ABSENT	NORMAL	NOT DONE	cf> 3mtr	LID TEAR SUTURING
67	left	CLOSE	II	4	CONTUSION	02:00	SPORTS/ LEISU	CRICKET BAL	URBAN	home	VIJAYAI	mechanical	NORMAL	CONGESTION	clear	iridodialysis	TRANSPARENT	HYPHAEMA	ABSENT	NORMAL	NOT DONE	hm +	AC WASH
68	RIGHT	OPEN	II	3	PENETRATING	02:00	DOMESTIC INJU	WOOD	RURAL	home	kambagi	mechanical	NORMAL	CHEMOSIS	CORNEO- SCLERAL TEAR	iridodialysis	TRANSPARENT	HYPHAEMA	ABSENT	TRAUMATIC MACULAR HOLE	NOT DONE	6 36	CORNEO SCLERAL TEAR SUTURING
69	RIGHT	ADNEXAL		1	ADNEXAL	07:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	TIKOTA	mechanical	CLW + PERIORBITAL EDEMA	CHEMOSIS	clear	NORMAL	TRANSPARENT	Normal	ABSENT	NORMAL	NOT DONE	cf> 3mtr	topical + observation
70	RIGHT	CLOSE	III	3	CONTUSION	05:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	HONAW	mechanical	CLW + PERIORBITAL EDEMA	CHEMOSIS	clear	NORMAL	SIMC	Normal	ABSENT	POSTERIOR VITREOUS DETACHMENT	NOT DONE	cf 2 mtr	LID TEAR SUTURING
71	left	CLOSE	III	4	CONTUSION	03:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	DEVARI	mechanical	PERIORBITAL EDEMA	CHEMOSIS	clear	sphinter tear	TRANSPARENT	Normal	ABSENT	VITREOUS HEMORRHAGE	NOT DONE	PL POSITIVE	vitrectomy
72	RIGHT	ADNEXAL		1	ADNEXAL	01:00	ROAD TRAFFIC	ROAD TRAFF	URBAN	URBAN	VIJAYAI	mechanical	CLW	NORMAL	clear	NORMAL	TRANSPARENT	Normal	ABSENT	Normal	NOT DONE	cf> 3mtr	LID TEAR SUTURING
73	left	ADNEXAL		1	ADNEXAL	06:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	BABLES	mechanical	CLW	NORMAL	clear	NORMAL	TRANSPARENT	Normal	ABSENT	Normal	NOT DONE	cf> 3mtr	LID TEAR SUTURING
74	left	OPEN	II	4	PENETRATING	03:00	DOMESTIC INJU	WOOD	RURAL	home	INDI	mechanical	PERIORBITAL EDEMA	congestion	CORNEO- SCLERAL TEAR	iris prolapse	TRAUMATIC CATARAC	SHALLOW	PRESENT	VITREOUS HEMORRHAGE	NOT DONE	PL POSITIVE	IRIS ABSCISSION + CORNEAL TEAR S
75	RIGHT	ADNEXAL		1	ADNEXAL	05:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	JALAKI	mechanical	CLW	CIRCUMCILIARY	clear	NORMAL	TRANSPARENT	Normal	ABSENT	Normal	NOT DONE	CF> 3 MTR	LID TEAR SUTURING
76	RIGHT	ADNEXAL		1	ADNEXAL	07:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	INDI	mechanical	CLW + PERIORBITAL EDEMA	NORMAL	CLEAR	NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	NOT DONE	CF> 3 MTR	LID TEAR SUTURING
77	RIGHT	ADNEXAL		1	ADNEXAL	#####	ROAD TRAFFIC	ROAD TRAFF	URBAN	URBAN HIGH	VIJAYAI	mechanical	CLW + PERIORBITAL EDEMA	CONGESTION	CLEAR	NORMAL	TRANSPARENT	NORMAL	ABSENT	NORMAL	NOT DONE	CF> 3 MTR	LID TEAR SUTURING
78	RIGHT	OPEN	I	3	PENETRATING	04:00	ROAD TRAFFIC	ROAD TRAFF	URBAN	URBAN HIGH	VIJAYAI	mechanical	CLW	CIRCUMCILIARY	FULL THICKNESS CORNEAL	iris prolapse	TRANSPARENT	HYPHAEMA	PRESENT	VITREOUS HEMORRHAGE	NOT DONE	6 60	CORNEO SCLERAL TEAR SUTURING
79	RIGHT	ADNEXAL		1	ADNEXAL	02:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	YATNAI	mechanical	CLW	CONGESTION	CLEAR	NORMAL	TRANSPARENT	Normal	ABSENT	NORMAL	NOT DONE	CF> 3 MTR	LID TEAR SUTURING
80	left	OPEN	II	3	PENETRATING	06:00	DOMESTIC INJU	WOOD	RURAL	home	BAGEW	mechanical	NORMAL	CIRCUMCILIARY	CORNEO- SCLERAL TEAR	iridodialysis	TRANSPARENT	HYPHAEMA	ABSENT	TRAUMATIC MACULAR HOLE	NOT DONE	CF-CF	CORNEO SCLERAL TEAR SUTURING
81	RIGHT	ADNEXAL		1	ADNEXAL	04:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	BALAG.	mechanical	PERIORBITAL OEDEMA	NORMAL	clear	NORMAL	TRANSPARENT	Normal	ABSENT	NORMAL	NOT DONE	CF> 3 MTR	topical + observation
82	both	ADNEXAL		1	ADNEXAL	05:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	KASSNI	mechanical	PERIORBITAL OEDEMA + EC	CONGESTION	clear	NORMAL	TRANSPARENT	Normal	ABSENT	NORMAL	FRACTURE OF LEFT B/L	CF> 3 MTR	topical + observation
83	RIGHT	ADNEXAL		2	ADNEXAL	08:00	ROAD TRAFFIC	ROAD TRAFF	RURAL	RURAL HIGH	DEVARI	mechanical	CLW	NORMAL	clear	NORMAL	TRANSPARENT	Normal	ABSENT	NORMAL	NORMAL	CF> 3 MTR	LID TEAR SUTURING
84	RIGHT	ADNEXAL		1	ADNEXAL	04:00	ASSAULT	ASSAULT	RURAL	home	CHADC	mechanical	PERIORBITAL OEDEMA	SCH	clear	NORMAL	TRANSPARENT	Normal	ABSENT	NORMAL	FRACTURE RIGHT LATE	CF> 3 MTR	topical + observation
85	left	ADNEXAL		2	ADNEXAL	12:00	ASSAULT	ASSAULT	RURAL	farm	yatnal	mechanical	PERIORBITAL OEDEMA + EC	HEMORHAGIC C	clear	NORMAL	TRANSPARENT	Normal	ABSENT	NORMAL	NORMAL	CF> 3 MTR	topical + observation
86	left	ADNEXAL		1	ADNEXAL	14:00	DOMESTIC INJU	STEEL PIPE	RURAL	HOME	MANJA	mechanical	CLW	NORMAL	clear	NORMAL	TRANSPARENT	Normal	ABSENT	NORMAL	NORMAL	CF> 3 MTR	LID TEAR SUTURING
87	RIGHT	C		3	C	02:00	DOMESTIC INJU	CAUSTIC LIM	RURAL	HOME	MATBH	chemical	PERIORBITAL OEDEMA	CIRCUMCILIARY	EPITHELIAL CORNEAL INJUR	NORMAL	TRANSPARENT	Normal	ABSENT	NORMAL	NORMAL	CF 1 MTR	topical + observation
88	left	T		1	T	13:00	DOMESTIC INJU	HOT WATER	RURAL	home	VIJAYAI	THERMAL	1 degree thermal burn	NORMAL	clear	NORMAL	TRANSPARENT	HYPHAEMA	ABSENT	NORMAL	NOT DONE	cf> 3mtr	regular dressing
89	RIGHT	OPEN	III	4	RUPTURE	00:15	WORKPLACE IN	PISTON OF O	URBAN	HOSPITAL	VIJAYAI	mechanical	CLW + PERIORBITAL EDEMA	CHEMOSIS	CORNEO- SCLERAL TEAR	iris prolapse	TRANSPARENT	HYPHAEMA	PRESENT	VITREOUS HEMORRHAGE	SOFT TISSUE SWELLING	PL +	SCLERAL TEAR SUTURING + IRIS ABS
90	both	CLOSE	III	1	CONTUSION	12:00	ASSAULT	BAMBOO STI	RURAL	home	INDI	mechanical	PERIORBITAL OEDEMA + EC	SCH	CLEAR	NORMAL	TRANSPARENT	Normal	ABSENT	BERLINS EDEMA	NORMAL	cf> 3mtr	topical + observation
91	RIGHT	C		4	C	06:00	DOMESTIC INJU	LIME	RURAL	HOME	bagewac	chemical	PERIORBITAL EDEMA	CONGESTION	COMPLETE CORNEAL OPAC	NOT SEEN	TRANSPARENT	NOT SEEN	NOT SEEN	NOT SEEN	NORMAL	PL +	WASH+ BCL
92	left	CLOSE	III	1	CONTUSION	04:00	DOMESTIC INJU	SELF FALL	RURAL	HOME	DEVARI	mechanical	PERIORBITAL EDEMA	SUB CONJUNCTI	clear	NORMAL	TRANSPARENT	NORMAL	ABSENT	BERLINS EDEMA	FRACTURE LAMINA PA	6/6P	topical + observation
93	left	CLOSE	III	1	CONTUSION	01:00	SPORTS/ LEISU	CRICKET BAL	RURAL	HOME	HONAW	mechanical	NORMAL	CONGESTION	clear	iridodialysis	TRANSPARENT	HYPHAEMA	ABSENT	CHOROIDAL RUPTURE	NORMAL	6/6P	topical + observation
94	RIGHT	OPEN	II	3	PENETRATING	08:00	DOMESTIC INJU	BAMBOO STI	RURAL	home	kambagi	mechanical	CLW + PERIORBITAL EDEMA	CIRCUMCILIARY	CORNEO- SCLERAL TEAR	iridodialysis	TRANSPARENT	HYPHAEMA	PRESENT	VITREOUS HEMORRHAGE	NORMAL	CF 1 MTR	CORNEO SCLERAL TEAR SUTURING
95	left	OPEN	II	4	PENETRATING	04:00	DOMESTIC INJU	BAMBOO STI	RURAL	HOME	INDI	mechanical	CLW + PERIORBITAL EDEMA	CONJUCTIVAL TI	CORNEO- SCLERAL TEAR	iridodialysis	TRANSPARENT	HYPHAEMA	PRESENT	VITREOUS HEMORRHAGE	NORMAL	PL +	CORNEO SCLERAL TEAR SUTURING
96	RIGHT	OPEN	II	4	PENETRATING	05:00	DOMESTIC INJU	BAMBOO STI	RURAL	HOME	INDI	mechanical	CLW + PERIORBITAL EDEMA	CONJUCTIVAL TI	CORNEO- SCLERAL TEAR	iridodialysis	TRANSPARENT	HYPHAEMA	PRESENT	VITREOUS HEMORRHAGE	NORMAL	PL +	CORNEO SCLERAL TEAR SUTURING
97	RIGHT	OPEN	II	4	PENETRATING	06:00	DOMESTIC INJU	BAMBOO STI	RURAL	HOME	INDI	mechanical	CLW + PERIORBITAL EDEMA	CONJUCTIVAL TI	CORNEO- SCLERAL TEAR	iridodialysis	TRANSPARENT	HYPHAEMA	PRESENT	VITREOUS HEMORRHAGE	NORMAL	PL +	CORNEO SCLERAL TEAR SUTURING
98	left	OPEN	III	5	RUPTURE	07:00	ASSAULT	STONE	RURAL	HOME	RAJNAI	mechanical	CLW + PERIORBITAL EDEMA	CONJUCTIVAL TI	CORNEO- SCLERAL TEAR	iridodialysis	TRANSPARENT	HYPHAEMA	PRESENT	vitreous hemorrhage+ RETINAL DETACHME	NORMAL	PL NEG	CORNEO SCLERAL TEAR SUTURING
99	left	OPEN	III	5	RUPTURE	02:00	WORKPLACE IN	LENTIL STICK	RURAL	farm	CHIKKA	mechanical	PERIORBITAL EDEMA	CONJUCTIVAL TI	CORNEO- SCLERAL TEAR	iridodialysis	TRANSPARENT	HYPHAEMA	PRESENT	VITREOUS HEMORRHAGE	NORMAL	PL NEG	CORNEO SCLERAL TEAR SUTURING
100	left	OPEN	I	3	PENETRATING	03:00	WORKPLACE IN	STICK	RURAL	farm	KARAN	mechanical	CLW + PERIORBITAL EDEMA	CONGESTION	CORNEAL TEAR WITH IRIS PF	iris prolapse	TRANSPARENT	HYPHAEMA 1+	ABSENT	BERLINS EDEMA	NORMAL	CF1MTR	CORNEO TEAR SUTURING + IRIS RE
101	RIGHT	ADNEXAL		1	ADNEXAL	03:00	ROAD TRAFFIC	ROAD TRAFF	URBAN	URBAN	VIJAYAI	mechanical	CLW	NORMAL	clear	NORMAL	TRANSPARENT	Normal	ABSENT	NORMAL	NORMAL	cf> 3mtr	topical + observation