Pattern of ocular trauma in tertiary care hospital in Khammam

Dr priyanka satti

3rd year Post graduate

Mamatha medical college,Khammam.

INTRODUCTION

- Trauma to the eye and its surrounding structures remains a leading cause of visual morbidity and blindness. Many ocular traumas are an avoidable cause of blindness and visual impairment.
- Worldwide there are approximately 6 million people blind from eye injuries, 2.3 million bilaterally visually impaired and 19 million with unilateral visual loss; these facts make ocular trauma the most common cause of unilateral blindness.
- According to estimates by WHO, about 55 million eye injuries restricting activities for more than one day occur each year, 750,000 cases requiring hospitalization which includes 200,000 open globe injuries.

PURPOSE

- To assess the pattern, presentation , risk factors and visual outcome of ocular trauma among patients at Mamata General Hospital, Khammam. It will serve as the basis for designing and implementing preventive measures .

METHODS

A two years retrospective study was conducted which included 120 patients of ocular trauma in Department of Ophthalmology, Mamata Medical College and Hospital, Khammam from June 2019 to june 2021.

Operational definitions were according to World Health Organization (WHO) and Birmingham Eye Trauma Terminology System (BETTS).

Blindness: Visual acuity <3/60

Eye Wall: Cornea and Sclera

Closed Globe Injury

- Contusions
- Lamellar laceration

Open Globe Injury: full thickness wound of the eye wall

- Laceration
- Penetrating
- Perforating
- Intra- ocular foreign body
- Rupture
- Adenexal injuries

During the initial examination, we also evaluated the ocular trauma score (OTS)5of each and every injured eye using the Ocular Trauma Scoring system, developed by Kuhn et al., since it provides prognostic information regarding the final visual outcome post-eye injury. It is a scoring system that takes into account six variables . Higher OTS scores tend to indicate a better visual prognosis.

Table 1: The ocular trauma score.

Variables	RAW POINTS
Initial vision	
NPL/enucleation/evisceration	60
LP/HM	70
1/60-5/60	80
6/60-6/15	90
6/12	100
Rupture	-23
Endophthalmitis	-17
Perforating injury	-14
Retinal detachment	-11
RAPD	-10

- With the final score, each eye evaluated was placed within an OTS category:

  Category 1:0-44 points

  Category 2:45-65 points

  Category 3:66-80 points

  Category 4:81-91 points

  Category 5:92-100 points.

Table 2:Age group and sex dristribution of ocular trauma patients

AGE(yrs)	MALE	FEMALE	TOTAL(%)
<5	4	3	7(5.83)
5-14	8	7	15(121.5)
15-24	16	10	26(21.66)
25-34	19	9	28(23.33)
35-44	15	7	22(18.33)
45-54	10	3	13(10.83)
55-64	2	0	2(1.66)
>65	5	2	7(5.83)
total	79(65.83%)	41(34.16%)	120(100)

RESULTS

It was found that the ocular trauma accounted for 120 patients in the time period from june 2019 to june 2021.

In our study 92 (76.66%) presented within 2 days, 24 (20%) presented in 2-7 days while 4 (3.33%) after 7 days of injury. Right eye was involved in 53 (44.16%) patients, left eye was involved in 62 (51.66%) patients. 5 patients had bilateral injury.

Table 3: Cause of the injury and sex distribution of ocular trauma cases

Cause of injury	male(%)	Female(%)	Total(%)
Road Traffic Accidents	38(31.66)	16(13.33)	54(45)
Occupation related	23(19.16)	16(13.33)	39(32.5)
Sports , play, recreation	16(13.33)	8(6.66)	24(20)
Domestic Accidents	1 (0.8)	1 (0.8)	2(1.6)
Violence Related	1 (0.8)	0	1(0.8)
Total	79 (65.83)	41(34.16)	120(100)

Table 4: Clinical findings on presentation

Clinical Findings	Number	Percentage
Subconjunctival Haemorrhage	5	4.16
Corneal / Corneo- Scleral/ Scleral Laceration	16	13.33
Hyphaema	5	4.16
Conjunctival Laceration	4	3.33
Corneal Epithelial Defects	1	0.83
Traumatic Iridocyclitis	5	4.16
Cataract/ Subluxated/ Dislocated Lens	15	12.5
Lid / Canalicular Laceration	24	20
Angle Recession Glaucoma	5	4.16
Vitreous Haemorrhage	8	6.66
Retained IOFB	7	5.83
Retinal Detachment	3	2.5
Macular Hole / Scar	5	4.16
Iridodialysis	4	3.33
Endophthalmitis	3	2.5
Traumatic Optic Atrophy	10	8.33

Table 5: Type of injury and final visual outcome.

Type of Injury	Final Visual Outcome, V/A					Total No. (%)
	6/6 – 6/18 (%)	< 6/18 – 3/60 (%)	<3/60 – NPL (%)	Not Documented (%)	Not Co-operative (%)	
CLOSED GLOBE						
Lamellar Laceration	5(4.16)	0	0	3(2.5)	2(1.66)	10(8.33)
Contusion	13(10.83)	1 (0.83)	3 (2.5)	9 (7.5)	2 (1.66)	28(23.33)
OPEN GLOBE						
Penetrating	9(7.5)	12 (10)	25 (20.83)	2 (1.66)	2 (1.66)	50 (41.66)
Perforating	0	0	1 (0.83)	0	0	1 (0.83)
IOFB	3(2.5)	1 (0.83)	1 (0.83)	0	2 (1.66)	7 (5.83)
Rupture	0	0	0	0	0	0
Adenexal	24(20)	0	0	0	0	24 (20)
Total	54(45)	14(11.66)	30 (25)	14 (11.66)	8 (6.66)	120 (100)

Table 6: Non–surgical and surgical management in eye injury cases

Management	Number of Cases	Percentage (%)
Non- Surgical	41	34.16
Surgical	79	65.83
Ocular Wall Repair	16	13.33
Lens Extraction	15	12.5
Posterior Vitrectomy	15	12.5
A. C Wash	5	4.16
Scleral Buckle	3	2.5
Keratoplasty	5	4.16
Enucleation	5	4.16
Glaucoma Surgery	2	1.66
Canalicular Anastomosis	6	5
Orbital Fracture Repair	7	5.83
Total 41	120	100

DISCUSSION

- The magnitude of ocular trauma was found to be 1.2% out of total ocular patients seen in the outpatient department. This figure is significantly lower as compared to a study done at JUDO, south west Ethiopia,12 where it was found to be 6.9%. It was found in this study that 63.8% patients were below 30 years of age with mean age of 25.5 (SD±15.6) years and male to female ratio of 3.2:1.
- In our study we found 74 (61.66%) patients were below 30 years with mean age of 28.8(SD±17.1) years with male to female ratio was 1.5:1.
- In the JUDO study 31.6 % patients presented within 48 hours whereas 28.6% arrived one week or later. According to our study, 88 (73.3%) presented within 2 days, 17(14.16%) presented in 2-7 days while 15(12.5%) after 7 days of injury.
- Our study did not show significant association between involvements of either eye. Right eye was involved in 53(44.16%) patients, left eye was involved in 62(51.66%) patients. 5 patients had bilateral injury.

- The slight predominance of the left eye injuries may be explained by the fact that most people are right handed and the left eye of the victim is the one which is more vulnerable to an attack from a right handed person.

- Among the causes of injury, road traffic accidents accounted for maximum number of cases, i.e., 54 (45%), followed by occupation related 39(32.5%), followed by sports, playing and recreational activities which accounted for 24 (20%).

- Study of JUDO showed commonest causes of injury were violence related 37.2% of the documented causes.

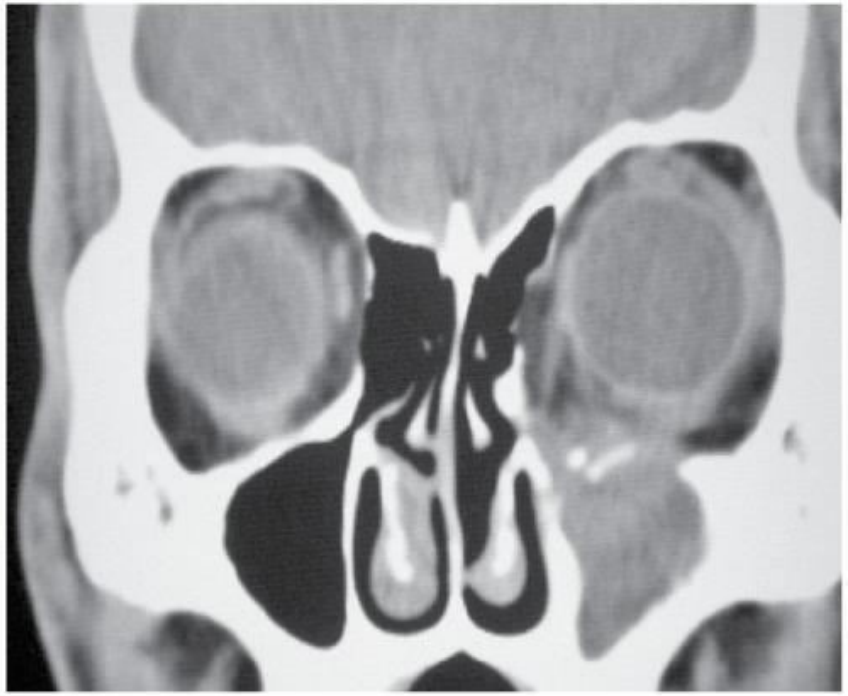
- In this study open globe injuries were found to be more common accounting for 58(48.33%) patients than closed globe injuries which accounted for 38(31.66%) patients, as according to studies conducted worldwide.

- But study at JUDO showed closed globe injuries (45.4%) were encountered more than open globe injuries (22.7%).

Figure 1: Corneo-scieral tear with iris prolapse.

Figure 2: Corneo-scleral tear repair done with A.C reformation

Figure 3 is C T scan showing left orbital floor fracture with herniation of tissue into the maxillary sinus



CONCLUSION:

- This study also has shown that road traffic accidents are the commonest causes of ocular injuries followed by occupational accidents & recreational activities ,where as domestic accidents are commonest causes of ocular injuries in children.

- However it was found that delay in presentation was common and significant association was found between delay in presentation ,presence of infections and complications which may have a detrimental visual outcome.

- Thus it is recommended preventive measures advocated by heath workers to emphasize the importance of early health seeking behaviour and follow up of patients with ocular trauma.

- Simple safety procedures like wearing seat belts in driving, protective goggles in welding, supervising children while playing, etc. should be advocated using mass media.

REFERENCES

1.Omolase CO, Omolade EO, Ogunleye OT, Omolase BO, Jhemedu CO, Adeosun OA. Pattern of ocular injuries in Owo, Nigeria. J. Ophthalmic Vis Res 2011; 6(2): 114-118

2.Kuhn F. Epidemiology of ocular trauma. In: Kuhn F, Morris R, Mester V, Witherspoon D. Ocular Traumatology. Springer- Verlag Berlin Heidelberg. 2005: 47-77.

3.Kuhn F, Maisiak R, Mann L. The ocular trauma score (OTS). Ophthalmol Clin North Am 2002; 15: 163–165.

4.Issac DL, Ghanem VC, Nascimento MA. Prognostic factors in open globe injuries. Ophthalmologica. 2003;217:431–5.

5.Asaminew T, Gelaw Y, Alemseged F. A 2-year review of ocular trauma in JIMMA University Specialized Hospital. Ethiop J Health Sciences 2009; 19:67-76.

6.Gyasi ME, Amoaku WMK, Adjuik MA. Hospitalized Ocular Injuries. Ghana Medical Journal 2007;41(4): 171-75.

7.Woo JH, Sundar G. Eye injuries in Singapore – Don't risk it. Do more. A prospective study. Ann Acad Med Singapore 2006;35:706-718.