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OCULAR MANIFESTATIONS IN ROAD TRAFFIC ACCIDENT PATIENTS-A STUDY DONE AT A TERTIARY HOSPITAL IN ANDHRAPRADESH.

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ABSTRACT **Aim :** Road traffic accidents are the most common cause of polytrauma.This study aimed to evaluate the frequency of different types of ocular injuries in road traffic accidents. **Methods:** This was a cross sectional, hospitalbased study done during a period of 4 months from April 2nd 2022 to July 26th 2022 done at a tertiary Hospital in Andhrapradesh. A total of 79 patients who met with ocular injury were evaluated in this study. Demographic data and other details were obtained and analyzed. **Results:** Of patients 79, male - 65, female – 14, most of the patients who sustained injuries were between 20 to 40 years (65%, 52/79). Right eye injury was more frequent (60%, 47 patients). The visual acuity immediately after the trauma ranged between 6/6 to perception of light (PL). Most common form of injury was Lid abrasions constituting 86% (68/79) followed by lid edema and ecchymosis constituting 79% (63/79).**Conclusion:** Immediate medical attention and appropriate ophthalmic surgical or nonsurgical conservative management will aid in quick visual rehabilitation of the patient.

KEYWORDS : ocular trauma, road traffic accidents

INTRODUCTION

Road traffic accidents are common now a day. Trauma to eye can cause severe and permanent visual impairment owing to its delicate and complex architecture.Motor vehicular crashes are one of the leading cause of ocular trauma in United States and form an unique risk factor for the same.Ocular trauma due to road trafic accidents resulting in visual loss may cause economic burden to the patient and to the society on the whole. Ocular trauma may involve the eye lids, lacrimal canaliculi, orbital wall, peri orbital structures, conjunctiva, cornea, sclera, extra ocular muscles. In some instances there may be prolapse of uveal tissue, vitreous hemorrhage, choroidal hemorrhage, globe rupture. This paper analyzes the spectrum of ocular injuries seen in road traffic accidents in a tertiary care hospital and assesses the visual outcome by providing appropriate medical and surgical treatment.

This study was performed to evaluate the frequency of different types of ocular injuries in road traffic accidents and assess the visual outcome along with the age and gender distribution of the study group.
MATERIAL AND METHODS This is a cross sectional,hospital based study done during a period of 4 months from April 2nd 2022 to July 26th 2022 done at NRI institute of medical sciences, sangivalasa, Visakhapatnam, Andhra Pradesh.

Inclusive criteria

1) Patients between 1 to 60 years of age.
2) Patients who sustained ocular injuries during the road traffic accidents.

Exclusive criteria

1) Patients who sustained ocular injuries due to domestic trauma.
2) Patients who sustained ocular injuries due to assault.
3) Patients who sustained ocular chemical injuries.

A total of 79 patients who sustained ocular injuries due to road traffic accidents (also fulfilled the inclusion and exclusion criteria) and attended the causalty department & ophthalmology outpatient department of Medical college hospital during the study period were included in this study. Demographic data and details were obtained and analyzed. Bed side vision was recorded. Thorough slit lamp evaluation of anterior segment and fundus examination were done in patients who are cooperative for examination. X ray of orbit (AP and Lateral view) and computerized tomography (CT) scan were done in all suspected cases of orbital rim fractures and peri orbital trauma.The results were analyzed and conclusions were drawn.

STATISTICALANALYSIS

Microsoft office 2007 excel sheet was used to tabulate data.Mean, ratio and percentages of the variables were calculated and the results were analyzed.

OBSERVATIONS AND RESULTS

Age and gender distribution

In the study of 79 patients (male -65: female -14), the youngest patient was 14 years and eldest patient was 54 year old; the details are shown in Table-1. Most of the patients who sustained injuries were between 20 to 40 years (65%, 52/79).

Age group	Number(percentage)n=79
10-20	5(6.32%)
20-30	26(32.91%)
30-40	26(32.91%)
40-50	14(17.72%)
50-60	8(10.12%)

Laterality

Right eye injury was more frequent (60%, 47 patients) than left eye (40%, 32 patients). Two patients had bilateral eye injury.

Consciousness

All patients except one were conscious and coherent when they were brought to casualty. This patient presented with altered sensorium.

Visual acuity (VA)

The visual acuity immediately after the trauma ranged between 6/6 (on Snellen chart) to perception of light (PL). The details are shown in Table-2.

Visual acuity	Number of patients(percentage)n=79
6/6-6/9	9(11.39%)
>6/9-6/18	9(11.39%)
>6/18-6/36	22(27.84%)
>6/36-6/60	26(32.91%)
HM	8(10.12%)
PL+	5(6.32%)

Type of injury

Most common form of injury was Lid abrasions constituting 86% (68/79), followed by lid edema and ecchymosis constituting 79% (63/79). The frequencies of different types of injury are shown in Table-3. Extra ocular muscles were involved in 5 patients (6.32%);lid laceration in 32 patients(40.50%). 6 patients had fracture of orbital structures details are shown in table 3. Two patients had blunt injury resulting in dislocation of lens and hyphema in 4 patients. Vision was profoundly decreased in one person due to traumatic optic neuropathy exhibiting Relative Afferent Papillary Defect (RAPD) sign.

Type of injury	Number of patients(n=79)
Lid laceration	32(40.50%)
Lid abrasions	68(86.07%)
Lid edema and ecchymosis	63(79.74%)
Subconjunctival hemorrhage	24(30.37%)

EOM paralysis	5(6.32%)
Orbital fractures	6(7.59%)
Corneal abrasion	1(1.26%)
Hyphema	4(5.06%)
Lens dislocation	2(2.53%)
Traumatic optic neuropathy	2(2.53%)

Management

Visual acuity was assessed and detailed examination of anterior segment and posterior segments was done with torch light and slit lamp biomicroscopy. The severity of injury was assessed. Vision improved with conservative treatment without any surgical procedure in ecchymosis, subconjunctival hemorrhages and periorbital trauma. Lid tears were repaired under local anesthesia. X ray of orbit (AP and Lateral view) was taken to rule out any muscle entrapment in patients with fractures of orbital walls. Hyphaema was treated by non surgical medical management. Lens was removed in lens dislocation patients and secondary IOL implantation was planned. Vision was not recovered in a patient who presented with PL vision where optic nerve was damaged.

DISCUSSION

Road traffic accidents are of common occurrence in day to day life causing mild to severe human injury including ocular injuries.[2]Ocular trauma following RTA can result in wide spectrum of tissue lesions ranging from superficial injury to vision threatening complications.[4]Our study found that majority of patients were in the age group of 20-40 years with males being affected more as compared to females. Our findings are consistent with studies conducted by Dubey S et al[4] andCillino S et al.[5] Most of RTA cases causing ocular trauma were due to two wheelers which is consistent with the study conducted by Dubey Set al.[4] Right eye was affected in majority of the cases as compared to left eye which is consistent with the studies conducted by Shtewi M EI et al[2] and Sujatha M. A R et al.[6] Most common ocular lesion following RTA in our study was lid abrasions followed by lidedema and periorbital ecchymosis which is consistent with the study conducted by Dubey S et al.[4]Anterior segment manifestations were more common than posterior segment manifestations in our study which is consistent with the study conducted by Reddy DC et al.[1]Majority of patients (50%) in our study had visual acuity of 6/9-6/36, 6.32% patients had visual acuity of PL+ whereas 7.5% patients had visual acuity of 6/6 at the time of presentation. Our findings are consistent with the study conducted by Shtewi M EI et al[2].

CONCLUSION:

Our study concluded that majority of patients with road traffic accidents presenting with ocular trauma were males with two wheeler accidents being the most common mode of vehicular accidents. Anterior segment complications were more common than posterior segment complications in our study. Ocular injuries due to RTA result in a spectrum of damage to intra-ocular structures and adnexa, therefore raising public awareness about safe driving and use of protective wear can decrease the incidence and severity of ocular trauma.

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