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Original research article

A Retrospective Evaluation of the Clinical Profile of Ocular Injuries following RTA

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Abstract

Aim: Clinical profile of ocular injuries following road traffic accidents.

Materials and methods: A retrospective study was conducted in the Department of Ophthalmology, Nalanda Medical College and Hospital, Patna, Bihar, India. Visual acuity at the time of presentation was recorded using Snellen's chart. Pupillary reaction, presence or absence of RAPD was noted. Patients who required surgical intervention were admitted and surgery performed after obtaining informed consent. Visual acuity was recorded after the surgery. All these data were tabulated and analysed.

Results: Ecchymosis was the commonest type of ocular injury which was seen in 49% of the patients. Out of 24% patients who had posterior segment involvement, 27% patients had vitreous haemorrhage. Traumatic optic nerve injury was seen in 16 patients. Eyelid ecchymosis was seen in 49% of patients making it the most common ocular presentation. Lid tear was seen in 28% of cases whereas 5% had lid tear with tissue loss. 2% showed canalicular tear. Orbital fractures were seen in 10% of the cases. 20% had extraocular injuries. Majority of the patients were managed conservatively. Only 36% patients required surgical intervention. Lid repair, canalicular tear repair, corneal tear repair, scleral tear repair, cataract surgery, intravitreal antibiotics, retinal detachment surgery were the various surgical procedures performed. In case of traumatic optic neuropathy intravenous methyl prednisolone was given. Visual acuity was assessed after the surgery. 48% show ed improvement in visual acuity, 36% had no change whereas 16% showed deterioration in visual acuity in the immediate postoperative period. 5% of the patients were totally blind.

Conclusion: It is a preventable public health problem. Henceforth ocular injuries as and when they occur have to be tackled efficiently and methodically.

Keywords: RTA, ocular, injuries

Introduction

Ocular trauma is a major cause of preventable blindness & visual impairment. Ocular trauma once described as the neglected disorder[1] has recently been highlighted as a major cause of visual morbidity and considered as important public health hazard with enormous economic and social consequences.[2] Road traffic accidents are common occurrences every day. It is a major public health problem. Owing to increase in number of vehicles and various other reasons, RTA are on a rise leading to mild to severe injury including injuries to eye. Ocular trauma may involve lids and adnexa, cornea, sclera, lens, retina, optic nerve and orbital walls. Ocular injuries are divided into open globe and closed globe injuries, however, there may be an overlap in their classification based on the causative agent or inflicting object involved. An open globe injury (an injury penetrating into the globe) involves a full thickness wound of the corneoscleral wall which may result from penetrating or blunt eye trauma. Open globe injuries include lacerations which are further divided into penetrating injuries, perforating injuries and intraocular foreign bodies. Closed globe injuries are commonly due to blunt trauma whereby the corneoscleral wall of the globe remains intact (a partial thickness corneal wound) however, intraocular damage may be present. They are divided into burns, blunt trauma/contusions and lamellar lacerations.[3]

Materials and methods

A retrospective study was conducted in the Department of Ophthalmology, Nalanda Medical College and Hospital, Patna, Bihar, India for 12 months

Methodology

The technique, risks, benefits, results and associated complications of the procedure were discussed with all patients. Patients of all ages, sex, irrespective of their socioeconomic status were included in the study. Those who were unstable, non-co-operative and ocular injuries other than RTA were excluded from the study. Patient details like name, age, sex, place of injury, type of vehicle, whether or not the patient was under the influence of alcohol, time of presentation to the hospital since the injury were noted. Visual acuity at the time of presentation was recorded using Snellen's chart. Pupillary reaction, presence or absence of RAPD was noted. Thorough evaluation of the patients with slit lamp examination, fundus examination with indirect ophthalmoscope with 20D lens was done wherever possible In case of media opacity B scan ultrasound was done. Patients with suspected intraocular foreign body and orbital wall fractures underwent CT scan. Patients who required surgical intervention were admitted and surgery performed after obtaining informed consent. Visual acuity was recorded after the surgery. All these data were tabulated and analysed.

Results

130 eyes of 100 patients had ocular injuries following road traffic accident. Out of them 90(90%) were male and 10(10%) were female. Right eye alone was involved on 50% and left eye in 41% of the cases. 9% of the patients had both eye involvements. 40% of the RTAs happened among 20-30 years age group. Youngest patient was 3 year old and oldest patient was 78year old. 60% patients presented to the OPD within 24 hours of the injury Majority of the patients were riding two wheeler (78%) and 2% were pillion. 5% were driving three wheeler and 8% were driving four wheeler at the time of accident. Whereas 7% who sustained injuries were pedestrians. 90% suffered closed globe injury whereas 10% had open globe injury.
Ecchymosis was the commonest type of ocular injury which was seen in 49% of the patients. Out of 24% patients who had posterior segment involvement, 27% patients had vitreous haemorrhage. Traumatic optic nerve injury was seen in 16 patients.

Eyelid ecchymosis was seen in 49% of patients making it the most common ocular presentation. Lid tear was seen in 28% of cases whereas 5% had lid tear with tissue loss. 2% showed canalicular tear. Orbital fractures were seen in 10% of the cases. 20% had extraocular injuries.

Majority of the patients were managed conservatively. Only 36% patients required surgical intervention. Lid repair, canalicular tear repair, corneal tear repair, scleral tear repair, cataract surgery, intravitreal antibiotics, retinal detachment surgery were the various surgical procedures performed. In case of traumatic optic neuropathy intravenous methyl prednisolone was given. Visual acuity was assessed after the surgery. 48% show ed improvement in visual acuity, 36% had no change whereas 16% showed deterioration in visual acuity in the immediate postoperative period. 5% of the patients were totally blind.

Table 1: Showing distribution of various anterior segment findings

Type of ocular trauma	**Number**	**Percentage**
Sub conjunctival haemorrhage	47	47
Chemosis	12	12
Epithelial defect	3	3
Corneal tear	5	5
Hyphema	4	4
Traumatic mydriasis	8	8
Iris prolapse	5	5
Lens dislocation	3	3
Traumatic cataract	3	3
Vitreous in AC	2	2
Scleral tear	8	8

Discussion

Ocular trauma is a major cause of visual morbidity. One out of every twenty patients seen by an ophthalmologist is a case of ocular trauma.[2] Road traffic accidents resulting in ocular trauma is the major cause of avoidable blindness. Our study shows the profile of ocular injuries following road traffic accidents in patients attending regional institute of ophthalmology in south India. The study shows increased incidence of road traffic accidents in males. This may be explained by their increased outdoor activities, rash driving and alcohol abuse. Right eye was more frequently involved in this study which was similar to Alam J et al.[3] The peak age of RTA was found to be 21-30 years which was similar to other studies. Only 12% patients gave the history of alcohol consumption during the time of accident which is considered a risk factor impacting road traffic injuries.[4] Around 77% of the patients were riding two wheeler similar to study reported by Puzari et al[5] 61% of the patients reported to the hospital within 24 hours of accident. Ignorance of health facilities available, poverty, late referral, distance, illiteracy could be the reasons for late presentation. According to Das et al significant delay in seeking medical care is reported in developing countries including India.[6] Majority of the patient had good vision (<6\18). Ecchymosis and SCH were the most common presentation. In general anterior segment injuries were more common than posterior segment injury and severity of diminution of vision was seen in posterior segment injury. Even after intervention 5% had no perception of light. The frequency of different type of ocular injuries found in our study showed similarities with other studies.[5-10]

Conclusion

It is a preventable public health problem. Henceforth ocular injuries as and when they occur have to be tackled efficiently and methodically. If the final visual acuity has to be improved, better first aid facilities, referral service, trained ophthalmologist who can access and manage ocular injuries on an emergency basis, well equipped facility, visual rehabilitation, follow up services are of paramount importance. On the other hand unsafe roads, distracted driving, exhaustion, alcohol intoxication are some of the reasons leading to road traffic accidents.

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