
ORIGINAL ARTICLE

Clinical study of ocular manifestations of blunt trauma in patients attending tertiary health care centre

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ABSTRACT

To study the clinical profile of ocular manifestations of blunt trauma in patients attending tertiary health care center. The study included 100 patients of blunt injury. Cases included those with trivial external injury to gross visual loss. 100 patients with blunt injury to the eye were studied. This Study had patients of age ranging from 18 to 75 years. 29% were in the age group 31-40 years and 20% in the age group 21-30 years. In this study, the majority of the patients were males 75%, and the commonest age of presentation was 31-40 years (29%). This study showed road traffic accidents to be the commonest mode of blunt ocular injury (61%).

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INTRODUCTION

Eye trauma is one of the leading causes of vision loss around the world. The annual incidence approaches 2 million instances, with about 40000 persons suffering from serious irreversible vision impairment . Injury can occur anywhere, from the workplace to recreational/agricultural/rural settings. Children at play, young men at work, in factories and construction sites, roadside falls, high-speed travel and Road Traffic Accidents, sports injuries, falls upon projecting blunt objects, and major blunt injuries in rural settings such as agriculture-based injuries are all causes of major blunt injuries. The majority of those affected are young persons, with a male to female ratio of roughly 9:1. Safety glasses in the workplace and education are two elements that can help lower the occurrence of blunt trauma, and ophthalmologists can help educate the public. The eye is cushioned within the orbital bone cavity [1-3]. To aim of the study of ocular manifestations of blunt trauma in patients attending tertiary health care center.

MATERIAL AND METHODS

A cross-sectional prospective study of all patients presenting to the ophthalmology outpatient department and casualty with blunt ocular trauma between December 2018 to December 2020 at Sree Balaji Medical College and Hospital. The study included 100 patients of blunt injury. Cases included those with trivial external injury to gross visual loss.

A detailed history was taken to know the mode of injury and the duration between injury and presentation. The examination started with visual acuity testing with Snellen's chart, anterior segment examination done with slit-lamp bio microscopy. Intraocular pressure recording done after ruling out globe rupture with the help of a Schiotz tonometer/applanation tonometer. Gonioscopy was done in appropriate cases. The posterior segment examination was done with direct and indirect ophthalmoscope. Field charting was carried out in relevant cases.

Patient data consisting of name, age, sex, mode of injury, extent of the injury, management and outcome noted and analyzed. The purpose and details of the study protocol was explained to each subject and written informed consent was obtained. Ocular symptoms were noted using the questionnaire.

All subjects were subjected to a complete ocular examination including:

Posterior segment examination by 90D and, Indirect ophthalmoscopy. x-ray, CT scan, and B scan if necessary.

INCLUSION CRITERIA:

- Patients of age groups above 18 years with blunt trauma to the eye.

EXCLUSION CRITERIA:

- Patients who have penetrating eye injuries
- Patients who have chemical injuries to the eye.

An investigation like an x-ray orbit, CT scan, ultrasound B scan was done in needed cases.

Weekly follow up for the first one month was done. Following monthly follow up for the next 6 months.

RESULT

100 patients with blunt injury to the eye were studied. This Study had patients of age ranging from 18 to 75 years. 29% were in the age group 31-40 years and 20% in the age group 21-30 years. This Study had patients of age ranging from 18 to 75 years. 29% were in the age group 31-40 years and 20% in the age group 21-30 years (Table- 1). 61% of the blunt trauma was RTA based and 10% were due to stick followed by fist (9%), ball (8%) and stone (7%) (Table -2).

Table1:Distribution of Study Participants According To Age.

| Age Group(years) | Percentage(%) |
|------------------|---------------|
| 18 - 20 | 14 |
| 21 - 30 | 20 |
| 31 - 40 | 29 |
| 41 - 50 | 16 |
| 51 - 60 | 8 |
| 61 - 70 | 9 |
| >70 | 4 |

Table 2: Cause Of Blunt Trauma:

| Causes | Percent(%) |
|------------------|------------|
| Cricket ball | 8.0 |
| Fall | 1.0 |
| Fingernail | 1.0 |
| Fist | 9.0 |
| Knob | 1.0 |
| RTA | 61.0 |
| Stick | 10.0 |
| Stone | 7.0 |
| Vegetable matter | 2.0 |

31% had periorbital oedema, 15% had orbital fracture and 30% had ecchymosis (Table 3).

Table 3: Distribution according to periorbital lesions.

| Periorbital lesions | Frequency |
|---------------------|-----------|
| Ecchymosis | 30 |
| Oedema | 31 |
| Emphysema | 1 |
| Fracture | 15 |
| Nil | 23 |

9 (60%) of the fractures were in orbital floor followed by 3 (20%) fractures in the lateral wall (Table 4).

Table 4: distribution according to the fractures in periorbital region.

| Fractures in periorbital region | Frequency |
|---------------------------------|-----------|
| Lateral wall | 3 |
| Medial wall | 1 |
| Floor | 9 |
| Roof | 2 |

41% had edematous lids, 15% had abrasion and 7% had laceration (Table 5).

Table 5: Distribution according findings on lids.

| Lids | Frequency |
|------------|-----------|
| Oedema | 41 |
| laceration | 7 |
| Abrasion | 15 |
| Nil | 37 |

5% had either retinal oedema or berlin's oedema and 4% had macular oedema (Table 6).

Table 6: Distribution according findings on retina.

| Retina | Frequency |
|--------------------|-----------|
| Berlin's oedema | 5 |
| Macular oedema | 4 |
| Macular hemorrhage | 1 |
| Optic neuropathy | 2 |
| Retinal detachment | 2 |
| Nil | 86 |

DISCUSSION

The age of the participants in this study, which included 100 people, ranged from 18 to 75 years old. The age group 31 to 40 years old had the highest rate of ocular injuries (29 percent), followed by the age group 21 to 30 years old (20 percent). The majority of the instances included people under the age of 40, i.e. young and middle-aged adults. Young adults have been found to be more prone to injury. This could be owing to young adults' increased exposure to the risk of blunt injuries, as well as their lack of understanding of injuries. According to Jain BS, Sony SR3, the highest rate of ocular injuries was reported in the age bracket of 16 to 30 years (63%) and in children under 16 years (23.2%), which is likely due to parents leaving their children to play unsupervised. There was pain, erythema, and lacrimation. were common symptoms, which were followed by a loss of vision. The majority of patients who had been in a car accident or were assaulted had minor injuries elsewhere on their bodies. Almost every patient had at least one lesion in the anterior segment, implying that anterior segment involvement (100%) was more common than posterior segment involvement (17 instances) (17 percent). In a study of 5671 patients with ocular injuries, Macewan [4] discovered that 98.3 percent of the injuries damaged only periorbital or superficial ocular structures. Compared to 52 eyes out of 212 in a study by 44 and 79 eyes with lens or pupillary abnormalities in a study by Canavon and Archer [5], 8 eyes exhibited lenticular involvement in the form of subluxation, dislocation, lenticular opacities, with or without anterior capsule rupture. In this study, 2 cases had dislocation of lens in the AC (case No.5,28), 3 cases of lens subluxation without lenticular opacity and 3 cases had lenticular opacity (Rosette).

CONCLUSION

In this study, the majority of the patients were males 75%, and the commonest age of presentation was 31-40 years (29%). This study showed road traffic accidents to be the commonest mode of blunt ocular injury (61%). The most commonly involved eye structures were conjunctiva (94%) and lid and adnexa (94%). In this study anterior segment involvement is more common in blunt trauma than posterior segment involvement. Most of the patients were managed as needed and some of them were referred to higher centres.

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