Volume : 5 | Issue : 2 | February 2016 • ISSN No 2277 - 8179

Research Paper

Clinical Study of Ocular Trauma at Government Medical College and Hospital.

Medical Science

KEYWORDS : Blindness, ocular trauma, eye protection, health education. Ocular morbidity

Dr DM Darade — Assistant professor Ophthalmology, Government Medical College and Hospital, Aurangabad, Maharashtra.

Dr VS Nandedkar — professor Ophthalmology, Government Medical College and Hospital, Aurangabad, Maharashtra.

ABSTRACT

Aim: Our case series was aimed to study the demographic profile of ocular trauma, its complications and visual outcome after surgical intervention.

Materials and methods: The retrospective case series study was conducted from August 2011 to July 2013 at a tertiary centre. The study was done on 46 patients attending outpatient department and casualty of Government Medical College and Hospital. Ocular evaluation including visual acuity, anterior and posterior segment findings, intra-ocular pressure and gonioscopy, X-ray orbit, B-scan and CT scan were done. All routine investigations were carried out.

Results: The mean age of presentation was 23.60 years. Male to female ratio was 2.06:1. Majority of the cases (36.95%)suffered ocular trauma at work place. 76.08% cases suffered open globe injuries,23.91% suffered close globe injuries. At presentation 56.52% cases had only perception of light and projection of rays. 21.73% cases were presented with no perception of light. After surgical intervention 13.04% improved best corrected visual acuity to ≥6/60, 58.69% improved BCVA to ≤6/60, 21.73% cases were not improved beyond perception of light.

Discussion: Ocular trauma is important cause of ocular morbidity and blindness. Marked prepondence is seen in males due to outdoor activities and in children due to aggressiveness.

Conclusion: Ocular trauma is a vision threatening problem. So the target group at risk should be provided with effective eye care. Eye health education is important to reduce the magnitude of blindness

Introduction

Ocular trauma is a worldwide cause of visual morbidity, a significant proportion of which occurs in the workplace and includes a spectrum of simple ocular surface foreign bodies, corneal abrasions to devastating perforating injuries causing blindness [1,2] The role of ocular injuries leading to blindness has been a subject of immense important. It will remain so because of the rapid industrialization and mechanical injuries [3] Despite anatomical and physiological natural protection afforded to the eye, injuries of the eye leading to blindness are quite common [4] .The ocular trauma is being preventable is of social and medical concern [5] the ocular trauma remains an important cause of avoidable blindness and mono ocular visual morbidity [6] Ocular trauma is the cause of blindness or partial loss of vision in more than half a million people worldwide. It is regarded as the most important cause of monocular blindness in the USA [7,8] About one quarter of all serious eye injuries are related to activities in the workplace. According to a Finnish report, eye injuries account for 12% of all work related injuries [9] Unfortunately work-related ocular injuries have not received enough attention in India. In a rapidly industrializing country like India, occupational eye injury is particularly common as the hazards of the workplace are not yet appreciated by workers or their supervisors [10]

Our case series was aimed to study the demographic profile of ocular trauma, its complications and visual outcome after surgical intervention.

Materials and methods

The retrospective case series study was conducted from August 2011 to July 2013 at a tertiary centre. The study was done on 46 patients attending outpatient department and casualty of Government Medical College. After admission in the eye ward, detailed ocular evaluation was performed. Anterior segment examination was done using slit lamp and posterior segment was examined with indirect Ophthalmoscope, intra-ocular pressure was noted. X-ray orbit was done in all patients to rule out intraocular foreign body, B-scan and CT scan were done. All routine investigations were carried out .written and informed consent was taken from the patients and parents in case of children. Ethical review board of medical college approved this study. Patients under 15 were operated under general anesthesia and rest under local peribulbar anesthesia.

Results

The mean age of presentation was 23.60 years. The youngest was 5 years and eldest was 44 years old. (table1) Males outnumbered the females with Male to female ratio 2.06:1(table2) The cases who suffered trauma at work place were 36.95% (17) ,19.56% (9 cases) suffered domestic trauma,10.86% (5) were from road traffic accident and 32.60 % cases suffered trauma in other places.(table3)

23.91% cases suffered closed globe injuries and 76.08% suffered open globe injuries according to ocular trauma classification group (table 4) At presentation 56.52 % (26) patients had only Perception of light and projection of rays,21.73% (10) cases had vision of ≤6/60 to 3/60. Unfortunately 21.73% (10) patients were presented with no perception of light.(table 5) All patients were managed surgically.(table 6).After Management of ocular trauma by surgical intervention variety of complications were noted (table 7). 13.04% (06) cases were improved best corrected visual acuity to ≥ 6/60 , 58.69% (27) were improved best corrected visual acuity to ≤6/60 , 6.52% (3) cases were improved best corrected visual acuity to ≤3/60 to finger counting close to face vision ,while 21.73% patients were not improved beyond perception of light.(table 8)

Table1 Age wise distribution of cases

Age in years	No (%)
1-20	23(50)
21-30	06(13.04
31-40	05(10.86)
41-50	12(26.08)

Table 2 Male to female ratio

Gender	No (%)
Male	31(67.39)
Female	15(32.60)

Volume : 5 | Issue : 2 | February 2016 • ISSN No 2277 - 8179

Table3 Place of ocular trauma

Place of trauma	No (%)
Work place	17(36.95)
Domestic	09(19.56)
Road traffic accident	05(10.86)
Other	15(32.60)
Assault	0(0)

Table4 Types of trauma

Type of trauma	No %)
Open globe injury Corneal penetration only Corneo-scleral penetration Corneo-scleral perforation	 23(50) 05(10.86) 07(15.21)
B . closed globe injury Hyphaema Vitreous haemorrhage Retinal detachment	 05(10.86) 03(6.52) 03(6.25)
c. Chemical injury	0(0)

Table 5 Pre-operative visual acuity

Pre-operative visual acuity	No (%)
≥6/60	O(0)
<6/60 to 3/60	10(21.73)
PLPR	26(56.52)
No PL	10(21.73)

PL= perception of light , PR= projection of rays

Table 6 Types of surgery

Name of surgery	No (%)
Corneal suturing	22(47.82)
Corneal suturing with cataract surgery with IOL implantation	01(02.17)
Corneo-scleral suturing	05(10.86)
Anterior chamber wash	05(10.86)
Evisceration	07(15.21)
Vitrectomy	06(13.04)

Table 7 Complications after surgery

Name of complication	No (%)
Adherent leucoma	10(21.73)
Irregular anterior chamber	15(32.60)
Irregular pupil	33(71.73)
Traumatic cataract	38(82.60)
Secondary glaucoma	04(8.89)
Retinal detachment	03(6.5)
Endophthalmitis	0(0)

Table 8 Post-operative visual outcome

Visual acuity	No (%)
6/18 to 6/60	06(13.04)
<6/60 to 3/60	27(58.69)
<3/60 to FCCF	03(6.52)
No PL	10(21.73)

FCCF= finger counting close to face, PL=perception of light

DISCUSSION

Ocular trauma is an important cause of blindness and ocular morbidity. The common age for ocular trauma in this study was found to be below 30 years (63.04%) Murthy GVS et al ocular injuries are the most common cause of acquired uniocular blindness in children [16]. A marked prepondence of ocular injuries is seen in 6 to10 years age group because children in this group are immature and aggressive In a prospective study by Shukla and Verma [3] involving 400 patients who showed that the commonest age group of people involved was in the third decade. A study done in Baluchistan by Qureshi [11] showed age group involvement (21-30 years).

Males were 67.39% in present study. Eye injuries remain a significant risk to worker health, especially among men in jobs requiring intensive manual labor. Many hospital and population based studies indicate a large preponderance (70-85%) of injuries affecting males [12,13]

Out Of 46 cases, 17 cases (36.95%) were work place-related injuries in present study. Similar cases of work place injury were found ranged from 31% to 39% as per other studies [6,14,15]

Closed globe injuries were 23.91% and open globe injuries were 76.08% in our study. Careful management of traumatic wound is important in globe injuries. By surgical intervention 13.04% patients were improved best corrected visual acuity to ≥6/60,58.69% were improved best corrected visual acuity to <6/60 to 3/60.These cases were not improved because of post-operative complications varying from leucoma,traumatic cataract,irregular anterior chamber and secondary glaucoma. Out of remaining 21.73% cases 15.21% were badly injured with uveal tissue prolase through the perforation, they were having no perception of light hence eviscerated. 6.5% cases had no perception of light due to retinal detachment. Visual acuity had improved to significant level in some of the patients by surgical management, unfortunately28.26% were left blind.

To conclude ocular trauma is a vision threatening problem. It adds to the social, emotional, and psychological impact on the overall development of an individual. So the targeting group most at risk should be provided with effective eye protection, should develop safety cultures, and should be given health education regarding eye protection to reduce the eye injuries and thus decrease the magnitude of the blindness.

REFERENCE

1.Desai P, MacEwen CJ, Baines P, Minassian DC. Incidence of cases of ocular trauma admitted to hospital and incidence of blinding outcome. Br J Ophthalmol 1996;80:592-6. | [PUBMED] | | 2.Ngo CS, Leo SW. Industrial accident-related ocular emergencies in a tertiary hospital in Singapore. Singapore Med J 2008;49:280-5. | [PUBMED] | | | 3 Shukla IM, Verma RN. A clinical study of ocular injuries. Indian J Ophthalmol 1979;27:33-6. | [PUBMED] | | 4. Duke Elder S.S., of Ophthalmology 6, 5, 33 Henry Kimpton London 1972, Syste | | 5 .P Shashikala, Mohammed Sadiqulla, D Shivakumar, K H Prakash Indian J Occup Environ Med 2013 May;17(2):66-70 | | 6.Thompson GJ, Mollan SP. Occupational eye injuries: A continuing problem. Occup Med 2009;59:123-5. | | 7.Kahn HA, Moorhead HB. Statistics on blindness in the model reporting area-1969-1970, US Department of Health, Education and Welfare publication Bethesda: National Institute of Health, National Eye Institute; 1973:73-27. | | 8.National Society to Prevent Blindness: Vision problems in the United States: Data Analysis. New York: National Society to Prevent Blindness. 1980. | | 9. Saari KM, Parvi V. Occupational eye injuries in Finland. Acta Ophthalmol Suppl. 1984;161:17-28. | [PUBMED] | | 10. Thylefors B. Ocular trauma. In: Thylefors B. editor. Strategies for the Prevention of Blindness in National Programmes - A Primary Health Care Approach. Geneva: World Health Organisation; 1997;74-80. | [PUBMED] | | 11.Qureshi MB. Ocular injury pattern in Turbat, Baluchistan, and Pakistan. Community Eye Health J 1997;10:57-8. | | 12.Schein OD, Hibberd PL, Shingleton BJ, Kunzweiler T, Frambach DA, Seddon JM, et al. The spectrum and burden of ocular injury. Ophthalmology 1988;95:300-5. | | 13.Katz J, Tielsch JM. Lifetime prevalence of ocular injuries from the baltimore eye survey. Arch Ophthalmol 1993;111:1564-8. | [PUBMED] | | 14.Jovanovic M, Stefanovic I. Mechanical injuries of the eye: Incidence, structure and possiblilities for prevention. Br J Ophthalmol 2010;67:983-90. | 15. Murthy GVS Indian J of Ophthalmology 2008:56;313-6 | 16.Mukherjee B Indian J of Ophthalmology 2010:58;531-3 | |