



ORIGINAL RESEARCH PAPER

Ophthalmology

VARIOUS TYPES OF OCULAR EMERGENCIES COMING TO TERTIARY CARE CENTER IN WESTERN REGION OF GUJARAT, BHUJ, KACHCHH

KEY WORDS:

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INTRODUCTION

Ocular trauma, once described as a neglected disorder, has recently been highlighted as one of the major etiologies of monocular and non congenital visual impairment and blindness in all part of the world. Ocular trauma is one of the main cause of ocular morbidity. Globally 55 million eye injuries occur per year, out of that 1.6 million with blindness.. Most of the clinico-epidemiological studies on ocular trauma has been carried out in developed countries. As the prevailing conditions in our country are different from that in developed countries, western model, therefore, cannot be applied in our country.

The National Society for the prevention of blindness estimates that up to 90% of all eye injuries are preventable, especially in the pediatric age group. Epidemiological studies in our environment are necessary to determine the causes of ocular trauma so that strategies to prevent or reduce their occurrence are implemented.³ This study is conducted to identify the etiology and nature of ocular trauma affecting our population, including the groups at risk, visual outcome and the need for hospitalization or surgery in our setting.

Study was conducted in tertiary care center G.K General hospital Bhuj ,Kachchh of western part of Gujarat.

The goals of this study were to describe clinical features of ocular trauma, and to make recommendations for public health and clinical strategies for the prevention, management, and research of ocular trauma in the future.

METHODS AND MATERIALS

This is a prospective hospital based observational study of 148 patients during a period of one year was included from 1 june 2019 to 30 may 2020. Consecutive subject who were referred to the eye unit with eye injury or directly in the emergency department were included in the study once written consent was obtained. Data were collected on patient's age, gender, affected eye, etiology of trauma, place of trauma, socio-economic status, associated periocular injuries, visual acuity, fundus examination, intraocular pressure (IOP) at presentation, imaging studies done, primary or secondary surgical intervention and hospital admission. Any substance abuse was also included. Those who were presented with periocular chemosis only was treated with oral analgesic and anti-inflammatory drugs. Chemical injury cases were first managed with normal saline irrigation followed by topical antibiotic, cycloplegic, steroid drops and antibiotic ointment. All of them were continued topical cycloplegic, antibiotic and steroid drops for 7 days. Corneal and conjunctival lacerations were treated with suturing in the OT after being admitted. Corneal abrasions were treated with antibiotic patching for 24 hour followed by topical antibiotic and lubricating drops for 7 days. Those who presented with berlin's edema, hemorrhage were treated

with systemic steroid along with topical steroid and cycloplegic drops followed by retina specialist consultation.

All corneal perforation, globe injury and lid laceration cases were admitted followed by surgical repair. Those who had severe penetrating eye injury, globe rupture. Those who had traumatic anterior dislocation of lens and had cataract were underwent small incision cataract surgery under peribulbar anesthesia followed by PMMA lens insertion. All of them were followed after 7 days, 1 month, 3 months, after 6 months, after 1 year. Best corrected visual acuity (BCVA), Non-contact tonometry for intraocular pressure, and fundus examination were done in the follow up. Cases of primary intervention also were included in the follow up.

Inclusion Criteria

Patients presenting to the ophthalmology outpatient department or referred to our department or attended in the emergency department, GAIMS, Bhuj, Gujarat, with history and signs of ocular trauma were included in the study.

Exclusion Criteria

1. Patient in whom assessment was difficult due to severe head injury with reduced level of consciousness and cooperation.
2. History of any past ocular pathology, which impairs best-corrected visual acuity (BCVA).

RESULT

Total 148 patients came in emergency who were included in study. 104(70%) were male and 44(30%) females .closed globe injury more common in adult open globe injury were common in children. Lid Tear was most common ophthalmic emergency found. Total 70(47.29%) lid tear found.49 were male and 21 female. most common age group was 20-40 .Most common cause was RTA and 2nd most common cause was assault. Black eye (traumatic lid edema) was 2nd most common ophthalmic emergency. Total 35(23.64%) patients were found. out of that 23 male and 12 female. most common cause was Road Traffic accident.

8(5.4%) patient were came with corneal tear. Most common age group was 10 -20 .most common cause was stick injury while playing as most of the patients were school children. 5(3.37%) patient came with scleral tear .out of 3 were school children. most common source of injury was metallic sharp objects.

Total conjunctival tear were 5(3.37%).Out of 3 were found in children. Mc cause was injury with sharp objects.4 (2.70%) patients came with chemical injury. All patients were of acid injury. Most common cause was accidental.

Traumatic cataract. Total number of traumatic cataract were 4(2.70%).3 were children. Most common cause is blunt trauma.

Total number of patients of traumatic Retinal detachment was 5(3.37%).Most common type of RD is Rhegmatogenous.

Berlin's edema (commotio retinae) a common condition caused by blunt injury to the eye. It is characterized by decreased vision in the injured eye a few hours after the injury. Totally reversible. Total number of patients were 5(3.37%).Most common cause was blunt trauma .In case of Traumatic corneal Ulcer Breech in corneal epithelium was present. Total number 2(1.3%).All were due to wooden stick injury.

In Sealed corneal tear no surgical management required in such cases.Total number were 5(3.37%).

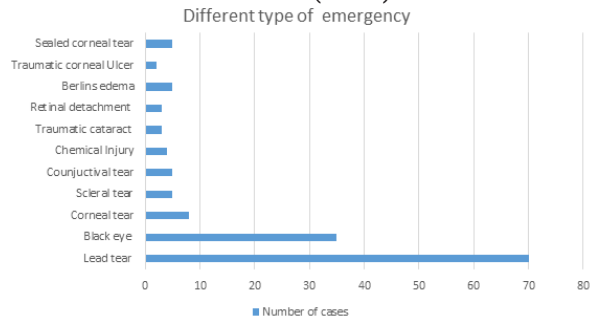


Figure 1 – Number Of Cases Of Various Ocular Emergencies
PERCENTAGE OF CASES PER AGE GROUP

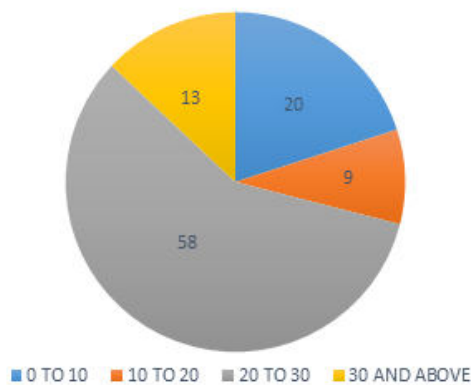


Figure 2- Percentage Ocular Emergencies In Various Age Group

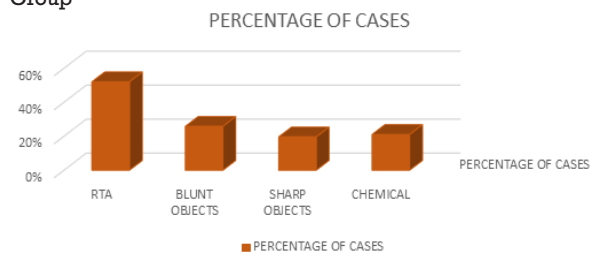


Figure 3- Percentage Of Cases In Various Causes



Figure 4 - Some images of different type of ocular emergent

DISCUSSION

There is a geographical variation in the cause of ocular injury which is age and gender specific.⁴ Studies from different regions demonstrate variations in the characteristics, incidence and prevalence of ocular trauma. The variations emphasize the influence of different methods of data collection, socioeconomic factors and industrialization of a population on the epidemiology of eye trauma.⁸ In this study, We have taken data from emergency department coming to GAIMS, GKGH, Bhuj.. The present study demonstrates that males were more susceptible to eye injury than females, irrespective of their age which was similar to earlier studies.¹⁰ The highest incidence of ocular trauma occurred in the 21–30 year age group. Blunt injuries were the most frequent type of injury occurred in my study. Most common cause was Road traffic accidents. This was different from an earlier study where 50% of ocular injuries were open globe and 29.8% were from blunt trauma in hospitalized adults with ocular injuries.¹¹ There was a high association between blunt trauma and the need for hospitalization in our study. The domestic setting produced all types of trauma, but blunt and penetrating injuries were the most frequent types of injuries occurring in the home. This correlation was also seen in studies by Desai et al and Khatry et al.⁹ In the paediatric age group, our study reports agreed with the literature that the majority of injuries occurred at home and could be avoided with supervision. These important trends highlight the need for prevention strategies to increase public awareness and re-emphasize the use of protective eye wear within the high-risk groups in the population while engaging in common domestic activities which can likely cause eye injury.¹² Penetrating injuries are also a significant public health problem, frequently caused by sharp objects, metal fragments, and pieces of wood and glass fragments. In other studies, metallic and sharp objects were found more frequently the cause of eye injuries in males, while females showed a higher risk of blunt trauma. Ocular injury, visual impairment and blindness associated with facial fractures leads to severe impact on the family, their economic status as well as on the economic status on the nation.¹⁴ Awareness of the causes of ocular trauma and implementation of preventative strategies can help in the reduction of serious ocular trauma. Trauma registries have a purpose in collecting essential public health information which can be analysed and the results can be used in the planning and policy-making and thus ultimately reducing morbidity. A reduction in ocular trauma will reduce permanent visual impairment and thus will leads to a significant reduction in the burden on the health services.

CONCLUSION

Ocular injury, visual impairment and blindness associated with trauma leads to severe impact on the family, their economic status as well as on the economic status of the nation. Hence safety measures are very important in preventing trauma related morbidity.

REFERENCES

1. Wong TY, Klein BE, Klein R. The prevalence and 5-year incidence of ocular trauma. *The Beaver Dam Eye Study*. *Ophthalmology*, 2000; 107:2196-202.
2. Négrel AD, Thylenors B. The global impact of eye injuries. *Ophthalmic Epidemiol*, 1998; 5:143-69.
3. Dandona L, Dandona R, Srinivas M, John RK, McCarty CA, Rao GN. Ocular

- trauma in an urban population in Southern India: The Andhra Pradesh Eye Disease Study. *Clin Exp Ophthalmol*, 2000; 28:350-6.
4. Koo L, Kapadia MK, Singh RP, Sheridan R, Hatton MP. Gender differences in etiology and outcome of open globe injuries. *J Trauma*, 2005; 59:175-8.
 5. Mowatt L, McDonald A, Ferron-Boothe D. Hospitalization trends in adult ocular trauma at the University Hospital of the West Indies. *West Indian Med J*, 2012; 61:605-9.
 6. Wong TY, Tielsch JM. A population-based study on the incidence of severe ocular trauma in Singapore. *Am J Ophthalmol*, 1999; 128:345-51.
 7. Krishnaiah S, Nirmalan PK, Shamanna BR, Srinivas M, Rao GN, Thomas R. Ocular trauma in a rural population of southern India: the Andhra Pradesh Eye Disease Study. *Ophthalmology*, 2006; 113:1159-64.
 8. Abbott J, Shah P. The epidemiology and aetiology of paediatric ocular trauma. *Surv Ophthalmol*, 2013; 58:476-85.
 9. Khattry SK, Lewis AE, Schein OD, Thapa MD, Pradhan EK, Katz J. The epidemiology of ocular trauma in rural Nepal. *Br J Ophthalmol*, 2004; 88: 456-60.
 10. Gordon KD. The incidence of eye injuries in Canada. *Can J Ophthalmol*, 2012; 47:351-3.
 11. Dannenberg AL, Parver LM, Brechner RJ, Khoo L. Penetrating eye injuries in the work place. The National Eye Trauma System Registry. *Arch Ophthalmol*, 1992; 110:843-8.
 12. Downes SM, Hambleton IR, Chuang EL, Lois N, Serjeant GR, Bird AC. Incidence and natural history of proliferative sickle cell retinopathy: observations from a cohort study. *Ophthalmology*, 2005; 112:1869-75.
 13. Nirmalan PK, Katz J, Tielsch JM, Robin AL, Thulasiraj RD, Krishnadas R, et al. Ocular trauma in a rural south Indian population: the Aravind Comprehensive Eye Survey. *Ophthalmology*, 2004; 111:1778-81.
 14. Magarakis M, Mundinger GS, Kelamis JA, Dorafshar AH, Bojovic B, Rodriguez ED. Ocular injury, visual impairment, and blindness associated with facial fractures: a systematic literature review. *Plast Reconstr Surg*, 2012; 129:227-33.
 15. Nwomeh BC, Lowell W, Kable R, Haley K, Ameh E A. History and development of trauma registry: lessons from developed to developing countries. *World J Emerg Surg*, 2006; 110:843-8.