

Socio-Demographic Profile, Etiology and Visual Outcome of Traumatic Cataract in North–West Rajasthan

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Purpose: To study the socio-demographic profile, etiology and visual outcome of traumatic cataract in North-west Rajasthan.

Material and Method: This cross-sectional study was done on 50 patients who presented in department of ophthalmology from January 2016 to May 2017. Relevant clinical history, demographic data and visual acuity at time of presentation and post-operatively after two month were recorded. All data were compiled and managed on SSPS.

Abstract

Results: Among 50 patients, majority of patients were young adult between age 21-30 yr, male representation greater than female. Wooden stick trauma constituted the major fraction (n=22, 44%). Most of patients had penetrating injury (n=36, 72%) and poor visual acuity at presentation.

Conclusion: Males face increased risk of trauma due to engagement in outdoor activities. Penetrating injuries are associated with poor visual outcome post-operatively because of association of other complication like corneal opacity, scarring and irregular astigmatism.

Delhi J Ophthalmol 2019;30;36-38; Doi <http://dx.doi.org/10.7869/djo.476>

Keywords: Traumatic cataract, Penetrating injury, Wooden stick

Introduction

Ocular injuries are common in all age groups. It may be from blunt trauma like a cricket ball, hand or penetrating injury from a pen, pencil, wire or wooden stick. Traumatic cataract is the most common complication. Other complications like corneal perforation with or without iris prolapse, total hyphema, lens subluxation with or without posterior capsular rupture, iridodialysis, uveitis, vitreous haemorrhage, macular edema, and retinal detachment may occur.

The lens may show the presence of Vossius ring, concussion cataract, discrete subepithelial opacities, early and late rosette cataract after blunt and penetrating injury.¹ Everyone in their day-to-day activities are prone to trauma specially children, and young adults who are engaged in sports, occupational activities like stone chipping, glass industry, and those working in fields. Farmers are very prone to get inadvertent ocular trauma by vegetative matter while working in the fields.

Following an ocular injury, cataract is the most common complication and is a major cause of morbidity.² Males are more susceptible to ocular trauma. The incidence of ocular injuries have been studied from time to time and from different geographic locations in both rural as well as urban setting.^{3,4,5}

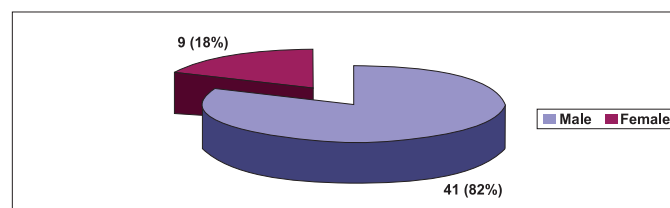
Materials and Methods

This is prospective hospital based study conducted on 50 patients with traumatic cataract following penetrating and blunt ocular trauma, who had attended the outpatient department of ophthalmology at Sardar Patel Medical College, Bikaner during January 2016 to May 2017. Informed consent was obtained from all the patients and parents

in case of children. All traumatic cataract patients were operated by a single surgeon by a single procedure (Small incision cataract surgery) in the same institution. Socio-demographic data (Age, sex, occupation, residence) and nature of injury, object by which trauma had been taken place were noted. The injury was classified as open or closed globe depending on whether the ocular coats had perforated or not. Visual acuity was noted at the time of presentation. Visual acuity was assessed by Snellen chart. B-scan and X-ray were performed according to the type and severity of injury to rule out intraocular foreign body and for posterior segment evaluation. All patients were followed up for two months and visual acuity was noted. All data was compiled and evaluated.

Table 1: Distribution according to age group

| Age group (year) | Number of cases | Percentage (%) |
|------------------|-----------------|----------------|
| 0 - 10 | 11 | 22 |
| 10 - 20 | 8 | 16 |
| 21 - 30 | 15 | 32 |
| 31 - 40 | 9 | 18 |
| 41 - 50 | 4 | 8 |
| < 50 | 3 | 6 |



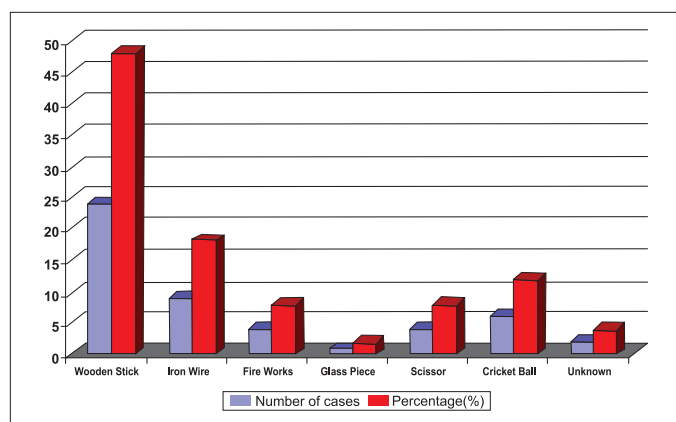
Graph 1: Distribution according to gender.

Results

The majority of traumatic cataract patients were young adults (21-30 years) - 15 (32%), followed by children (0-10 years) - 11 (22%) and the frequency decreased with subsequent increase in age and were rare in the elderly (Table 1). In our study 41 (82%) were male compared to only 9 (18%) females (Graph 1). This closely resembles to the data found by Shah et al.⁶ The likely reason could be because of the involvement of male counterparts more in outdoor work. Farmers or agricultural workers were most likely to get injured and comprised 22 (44%) followed by children 12 (24%) [Table 2]. We found that most of these agricultural workers were

Table 2: Distribution according to occupation

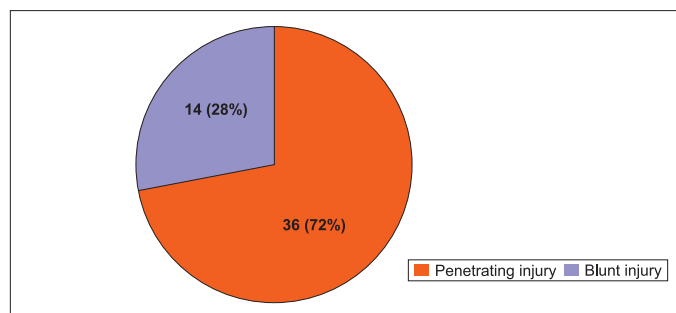
| Occupation | Number of cases | Percentage (%) |
|---------------------------|-----------------|----------------|
| Farmer/agriculture worker | 22 | 44 |
| Industrial Worker | 9 | 18 |
| Children (while playing) | 12 | 24 |
| House wife | 4 | 8 |
| Others | 3 | 6 |



Graph 2: Configuration of cases according to object by which trauma has been occurred.

Table 3: Visual acuity at time of presentation

| Visual acuity at presentation | Number of cases | Percentage (%) |
|-------------------------------|-----------------|----------------|
| >6/60 to 6/60 | 6 | 12 |
| <6/60 to HM-CTF | 24 | 48 |
| Pl and PR | 17 | 34 |
| PLABSENT | 3 | 6 |



Graph 3: Type of Injury

young and had suffered penetrating ocular injury while working in the fields or outdoors activities. Most common trauma was due to wooden stick 24 (48%) (Graph 2) because majority of patients belongs to rural area. Majority of the patients had poor visual acuity at presentation (Table 3) 28 (56%) had 3/60 to <6/60.6/60. It is due to large proportion of penetrating injury (Graph 3) 36 (72%). Though the visual acuity of majority at initial presentation was poor, the postoperative visual outcome (Table 4) was good if not associated with complications like corneal opacity, lens subluxation, vitreous hemorrhage, retinal detachment, etc.

Table 4: Visual Acuity at 2 Months

| Visual acuity | Pre-operative | Percentage (%) | Postoperative at 2 Months | Percentage (%) |
|---------------|---------------|----------------|---------------------------|----------------|
| PL | 8 | 16 | 2 | 4 |
| 1/60 - <3/60 | 11 | 22 | 8 | 16 |
| 3/60 - <6/60 | 28 | 56 | 17 | 34 |
| 6/60 - 6/24 | 3 | 6 | 12 | 24 |
| >6/18 | 0 | 0 | 11 | 22 |

Discussion

Trauma is most common cause of unilateral blindness. It remains a significant cause of visual impairment and physical disability among both adults and children. Sethi et al reported in their study that most of the patients affected were young.⁷ In our study also young adults and children were affected the most with decreased prevalence in the elderly. Male preponderance was found. It is due to involvement of males in sports, outdoor activities and occupational work more than females. In our study, the young adults engaged in agricultural work were more likely injured while working in the fields or outdoors. Srivastava et al⁸ also found that males were comparatively more affected and wooden stick was the most commonest agent for injury to the eyes. On comparing our study with different studies regarding incidence of penetrating and blunt injury, our study is same with Singh et al, Renuka Srinivasan, David Benezera; i.e. penetrating injury has higher incidence. In our study majority of patients had poor visual outcome less than 6/60 postoperatively at two months. It is due to penetrating injury and postoperatively associated corneal opacity.

Limitation

The main limitation of this study was the small sample size and the conduct of the study in a single tertiary healthcare centre, which though gives a fair idea about the local socio-demographic conditions, but cannot be generalized and long term follow-up was not done.

Conclusion

Penetrating injuries are associated with poor visual outcome postoperatively. Ocular traumatic injury followed by the subsequent development of traumatic cataract though common, can be prevented by wearing protective eye gears and careful use of sharp objects.

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Cite This Article as: Joshi R, Goyal RK, Kochar A. Socio-Demographic Profile, Etiology and Visual Outcome of Traumatic Cataract in North-West Rajasthan.

Acknowledgments: Nil

Conflict of interest: None declared

Source of Funding: None

Date of Submission: 23 May 2018

Date of Acceptance: 28 May 2019

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