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Original Research Article

To study the prevalence and incidence & correlate of traumatic cataract in various age groups in ocular injury

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Abstract:
Background & Method: The aim of this study is to study the prevalence and incidence & correlate of traumatic cataract in various age groups in ocular injury. A total number of 124 cases of traumatic cataract of various age group and etiologies were included. Age of patients varied from 0-60 years. Type of injury was categorized as blunt, penetrating and perorating by various objects including wooden stick, gulli, thorn, fire cracker, stone, metallic rod, wire, nail, glass piece, metal chips and sheets.

Result: Predilection of left eye involvement by trauma .93 out of 124 cases i .e.75% had traumatic cataract in left eye. While remaining 31 [25%] had involvement of right eye. The mode of injury was analyzaed out of 52 (41.93%) cases of blunt trauma 28 were caused by wooden stick7 were with gulli (wooden) and 3 cases injured with metalic rod. 4 were caused by fire cracker 5 cases injured with fist. 66 cases (53.22%) had penetrating injury with wooden stick(18) glass piece(13), thorn (5) iron wire (21) and with tin sheet (9). 6 cases (4.83%) had perforating injury withI iron chip IOFB.

Conclusion: A total number of 124 cases of traumatic cataract of various age group and etiologies were included. Age of patients varied from 0-60 years. Type of injury was categorized as blunt, penetrating and perorating by various objects including wooden stick, gulli, thorn, fire cracker, stone, metallic rod, wire, nail, glass piece, metal chips and sheets. These underwent cataract extraction with or without IOL implantation and additional surgical procedures were undertaken as required. 32 cases belonged to 6-15 yrs of age and 80 cases to16-60 years. All 124 cases have bilatereral involvement of eye. Predilection of involvement of left eye seen in 31 of 124 cases I.e (75%)

Keywords: prevalence, incidence, traumatic, cataract & ocular.

Study Designed: Observational Study.

1. INTRODUCTION

Cataract remains commonest cause of blindness in India 81%. Traumatic cataract accounts for approximately 36%. 75% of patients are younger than age 40 years. Male to female ratio

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is 9:1 Traumatic cataract is Cataract following injury to the lens, its capsule, or to the eyeball itself[1].

Penetrating trauma of the lens causes rapid opacification of the cortex or even most of the lens contents. Concussion of the lens may result in capsular, subcapsular or cortical opacities[2].

Traumatic cataract may develop after various types of ocular insult, including blunt or perforating trauma as well as ionizing, infrared, or ultraviolet radiation. Besides cataract, ocular trauma can also induce lens subluxation and dislocation, and cause injuries to the cornea, iris, vitreous, and retina[3]. In the case of blunt trauma, coup and contrecoup forces on the lens could cause rapid anterior-posterior shortening, leading to abrasion or rupture of the lens capsule with subsequent cataractogenesis[4].

Direct anterior-posterior force also produces equatorial expansion of the lens, which can result in equatorial capsular rupture and zonular dehiscence. Equatorial capsular rupture can further stimulate cataract formation, although zonular dehiscence can lead to lens subluxation or complete dislocation, depending on the extent of zonular incompetence. Blunt ocular trauma typically leads to a stellate or rosette-shaped opacification that is axial in location and involves the posterior capsule[5]. In perforating trauma, direct compromise of the lens capsule by the penetrating object leads to cortical opacification at the site of injury. If the capsular tear is large enough, the entire lens can rapidly opacify, but a cataract caused by a small perforation may become sealed off and remain localized[6].

Contusive forces, as described for blunt trauma, may or may not be present, depending on the agent and mechanism responsible for injury, but they will exacerbate cataract formation if present.

This type of cataract occurs generally after some serious eye injury and may lead to total cortical opacification. Very often this illness does not come alone, it brings complications like : the dislocation of the lens, angle-recession glaucoma, blocked pupils, the retina may be detached and the globe may rupture.

The surgery of cataract was practiced first by Susruta in India about 1000 BC. In1745 Jacques Daviel performed the first series of limbal section in the lower half of the eye with a triangular knife and enlarged this incision either with scissors or a blunt ended knife.

2. MATERIAL & METHOD

This study was carried out in cases of traumatic cataract of different age group attending the Ophthalmology Out Patient Department of Upgraded department of N.S.C.B. Medical College and Hospital Jabalpur (M.P.) during my academic session 2009-2012.

All the patients from age of 0-60 years having traumatic cataract due to blunt and penetrating injuries.

All the cases of traumatic cataract having posterior segment involvement like retinal detachment optic atrophy, vitreous hemorrhage, macular hole, etc. Traumatic cataract due to retained intraocular foreign body, electric shock, radiation were excluded.

Evaluation of patient

1. General information - Include Name Age Sex occupation & Address
2. Presenting complaint of patient –Diminution of vision pain redness watering photophobia colored halos headache vomiting and blurring of vision.
3. History of presenting complaint - Relevant history of symptoms,
   - Mode of Injury,
   - Type of trauma blunt injury or Penetrating injury.

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- Associated ocular damage or injury

4. History of associated systemic illness like diabetes mellitus Hypertension Bleeding disorders or any other.
5. Past history of surgery like Corneal tear repair, Filtering Surgery etc.
6. Drug History –Steroids, Beta Blocker, anticoagulants.
7. Personal History.
8. Family History.

3. RESULTS

TABLE 1: AGE OF PATIENT

S. No	Age group (in yrs)	No. of cases	Percentage %
1	0-5	12	9.67
2	6-15	32	25.80
3	16-60	80	64.51

Above table showing age distribution of cases taken in the study. In paediatric age group 12 patients [9.67%] were belong to 0-5 years of age while 32 [25.80%] had6-15 years of age.80 [64.51] cases belonged to adult age group 16-60 years. The mean age of our study is 25.15 years.

TABLE 2: UNIOCULAR AND BINOCULAR DISTRIBUTION OF CASES

S. No.	Laterality	No. of cases	Percentage (%)
1	Unilateral	124	100
2	Bilateral	0	0
	Total	124	

This table shows distribution of laterality involvement of eye which shows that there is unilateral involvement in 124 [100%] of cases.

TABLE 3: OCULAR PROFILE OF CASE

Eye involved	No. of cases	Percentage (%)
Right Eye	31	25%
Left Eye	93	75%
TOTAL	124	100%

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The above table suggest predilection of left eye involvement by trauma .93 out of 124 cases i .e.75% had traumatic cataract in left eye. While remaining 31 [25%] had involvement of right eye.

TABLE 4: ETIOLOGY OF TRAUMATIC CATARACT

S. No.	Type of injury	Cases of injury	No. of cases	%
1	Blunt trauma	Wooden stick	28	41.93%
		Gulli (wooden)	7	
		Metalic rod	3	
		Fire cracker	4	
		Stone	5	
		Fist	5	
		Total	52	
2	Penetrating	Wooden stick	18	53.22%
		Glass piece	13	
		Thorn	5	
		Iron wire	21	
		Tin sheet	9	
		Total	66	
3	Perforating	With IOFB	6	4.83%

The mode of injury was analyzaed out of 52 (41.93%) cases of blunt trauma 28 were caused by wooden stick7 were with gulli (wooden) and 3 cases injured with metalic rod. 4 were caused by fire cracker 5 cases injured with fist .

66 cases (53.22%) had penetrating injury with wooden stick(18) glass piece(13), thorn (5) iron wire (21) and with tin sheet (9). 6 cases (4.83%) had perforating injury withI iron chip IOFB.

4. DISCUSSION

Trauma leading to cataract and visual handicap is a serious problem and visual rehabilitation is very crucial. The present study comprises of 124 cases of Traumatic cataract of 0-60 years of age groups undertaking in the upgraded Department of Ophthalmology of N.S.C.B. Medical college Jabalpur. The aim was to evaluate the complications and difficulties in countered during Traumatic cataract surgery with IOL implantation were possible. With a special stress on various factors affecting the final visual outcome in such cases

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Alfred J McKinna criteria of grouping, divided in patients in paediatrics and adult age and in paediatrics again in two groups 0-6 years and 7-15 years[7]. In our studies paediatric age group 12 patients [9.67%] were belong to 0-5 years of age while 32 [25.80%] had 6-15 years Of age.80 [64.51] cases belonged to adult age group 16-60 years. Mean age in adult 32.29 years (16-60) Mean age of 33 years in 25 cases of traumatic cataract. Overall mean age (among 124 cases) was 25.15 years, 12 years (6-60 years).

Tetz and Blum et al[8] had mean age of 49.25 years while Bowman and Yorston had mean age of 14.3 years in their studies[9]. The relative frequency of blunt trauma and penetrating trauma in 124 cases of traumatic cataract. In this study showed blunt trauma was seen 52(41.93%) in penetrating trauma was 72 cases (58.06%) common mode of injury that is a penetrating injury.

In this study was found that is 46 (37.09%)were caused by wooden stick this is because of working in fields[10]. The type of injury was both penetrating and blunt type. 6 cases injured with metalic rod. 4 were caused by fire cracker 5 cases injured with fist. glass piece (13) ,thorn (5) iron wire (21) and with tin sheet (9) .6 cases(4.83%) had perforating injury withI iron chip IOFB[11].

5. CONCLUSION

A total number of 124 cases of traumatic cataract of various age group and etiologies were included. Age of patients varied from 0-60 years. Type of injury was categorized as blunt, penetrating and perorating by various objects including wooden stick, gulli, thorn, fire cracker, stone, metallic rod, wire, nail, glass piece, metal chips and sheets. These underwent cataract extraction with or without IOL implantation and additional surgical procedures were undertaken as required. 32 cases belonged to 6-15 yrs of age and 80 cases to16-60 years. All 124 cases have bilatereral involvement of eye. Predilection of involvement of left eye seen in 31 of 124 cases I.e (75%)

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