

# Visual Outcome after Primary IOL Implantation for Traumatic Cataract

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**Purpose:** To assess the visual outcome of early cataract extraction with primary IOL implantation for traumatic cataract caused by penetrating injury.

**Material and Methods:** A prospective study was carried out on all patients with traumatic cataract caused by penetrating injury who underwent early cataract extraction (as surgery carried out within 2 weeks of the injury) with primary IOL implantation at the Jinnah Post Graduate Medical Center, Karachi between October 1998 and March 2000. Data was collected on age, gender, preoperative vision, post-operative vision at 3-6 months, and postoperative complications responsible for decreased visual acuity.

**Results:** Sixty eyes in 60 patients were studied. There were 52 males and 8 females. The preoperative visual acuity was poor ( $\leq 6/60$ ) in all 60 eyes. The postoperative visual acuity in 30 eyes was good (6-6/6/12), whereas 26 eyes had borderline (6/18-6/36) and 4 eyes had poor ( $\leq 6/60$ ) visual acuity. The cause of poor visual acuity was mainly corneal opacity and posterior capsular opacity.

**Conclusion:** Our study shows that good visual results can be achieved in traumatic cataract surgery if the posterior segment is not involved and corneal scar does not block the optical axis.

Eye trauma can result in cataract formation along with other ocular problems. Traumatic cataract may be caused by blunt trauma or penetrating trauma. Children and young adults, especially boys are more predisposed to trauma and have a higher incidence of traumatic cataract<sup>1</sup>. The timing of surgery is important for visual rehabilitation especially in children as the risk of amblyopia is high due to media opacity. Several studies have revealed that that early cataract extraction with IOL implantation in traumatic cataract results in good vision<sup>2-9</sup>.

This study was carried out to assess the visual rehabilitation that can be achieved following early cataract extraction and IOL implantation in traumatic cataract due to penetrating injury in a tertiary hospital in Karachi, Pakistan.

## MATERIAL AND METHODS

This was a prospective study. Our main outcome measure was visual acuity at 3 to 6 months, assessed

using Snellen's chart. All patients with traumatic cataract caused by penetrating injury who underwent early cataract extraction with primary IOL implantation at Jinnah Post Graduate Medical Center, Karachi between October 1998 and March 2000. Early surgery was defined as surgery carried out within 2 weeks of the trauma. Data were collected on age, gender, preoperative visual acuity, postoperative visual acuity at 3 to 6 months and causes of poor surgical outcome.

## RESULTS

A total of 60 eyes of 60 patients were included in the study. The majority of cases were males and aged  $\leq 35$  years. All eyes had a poor vision at presentation. (Table 1) Preoperative findings included peripheral corneal perforation in 54 eyes, central corneal perforation in 6 eyes, irregular pupil in 15 eyes and posterior synechiae in 20 eyes. (Table 1) Following surgery, the visual acuity was good (6-6/6/12) in 30

**Table 1:** Key characteristics of the cataract cases at presentation (n=60)

Variable	No. of patients n (%)
<b>Age group</b>	
5-15	9 (15)
16-35	41 (68.3)
36-45	6 (10)
≥ 46	4 (6.7)
<b>Sex</b>	
Male	52 (83.3)
Female	8 (13.3)
<b>Visual acuity at presentation</b>	
Light perception	12 (20)
Hand movement	30 (50)
Counting fingers	13 (21.7)
6/60	5 (8.3)
<b>Ocular conditions associated with traumatic cataract</b>	
Central corneal perforation	6 (10)
Peripheral corneal perforation	56 (93.3)
Irregular pupil	15 (25)

eyes, borderline in 26 eyes and poor ( $\leq 6/60$ ) in 4 eyes (Table 2). The cause of poor visual acuity was mainly corneal opacity and post capsular opacity. Late postoperative complications of IOL implantation are shown in Table 2. Six cases developed lens decentration. Lens decentrations were inconsequential for vision so no intervention was warranted. Fifteen cases had high astigmatism due to corneal scar in penetrating ocular trauma and tight stitches. It decreased to acceptable limits by cutting approximately stitches three month postoperatively. Ten cases developed posterior synechiae in early postoperative period. By keeping the pupil mobile with mydriacyl and increasing the topical corticosteroid eye drops the synechiae broke. Seven cases developed posterior synechiae and did not responded to pupil dilation or corticosteroid eye drops. However, these synechiae did not affect the

vision so no intervention was carried out. Three cases developed clinical cystoid macular edema. In these cases the visual acuity improved to 6/12 after subsidence of macular edema. Thirty nine cases had corneal opacity as a late complication.

**Table 2:** Visual outcome and long-term complications after surgery

Variable	No. of patients n (%)
<b>Visual acuity at 3-6 months</b>	
6/6-6/12	30 (50)
6/18-6/36	26 (43.3)
$\leq 6/60$	4 (6.7)
<b>Long term complications</b>	
Corneal opacity	39 (65)
Posterior synechie	7 (11.7)
Irregular pupil	15 (25)
Stitch granuloma	3 (5)
IOL decentration	6 (10)

## DISCUSSION

Most of the ocular trauma occurs in children and in adults in the productive age categories, a finding which was also seen in the present study. Eye trauma remains a neglected public health problem and can be prevented by appropriate interventions. 52 (83.3%) of the cases were males. Males are more likely to sustain an eye trauma than females because they are more likely to be involved in hazardous sports and occupations<sup>10</sup>. Surgical interventions for traumatic cataract has variable outcome. <sup>11</sup> In our study half of the eyes (30/60) were within the good (6/6- 6/12) visual range. Such a high percentage of good out come was achieved as none of these cases had IOFB or retinal detachment. Our study adds to the growing body of work showing the importance of early IOL implantation, which provides an everlasting solution to aphakia and results in a good visual prognosis<sup>5</sup>. The important reasons for decreased vision in our study included corneal scarring and posterior capsular opacification.

Our study demonstrates that good postoperative visual acuity can be achieved in traumatic cataract

surgery resulting from penetrating injury if the posterior segment is not involved and corneal scar does not block the vision.

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