ORIGINAL ARTICLE

Frequency of Visual Improvement after Traumatic Cataract Surgery

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ABSTRACT

Aim: To determine the frequency of good visual acuity after traumatic cataract surgery with intraocular lens implantation in patients having blunt ocular trauma.
Study design: case series
Duration: From November 2014 to May 2015.
Settings: Department of Ophthalmology, Sahiwal Medical College, Sahiwal.
Subject: 151 patients of traumatic cataract who full filled the inclusion and exclusion criteria.
Results: The improvement of visual acuity, (Good visual acuity = 6/6-6/12) was found in 126(83%) patients after traumatic cataract surgery with intra ocular lens implantation. Visual acuity was not improved up to level of Good visual acuity (6/6-6/12) in 25(17.2%) patients. Most of the patients (59.6%) were aged between 15-20 years and in which male patients were dominant showing that younger males were affected mostly with trauma.
Conclusion: Patients with traumatic cataract can have good visual outcome after cataract removal and IOL implantation also depending upon management and complications.
Keywords: Cataract, visual improvement, trauma

INTRODUCTION

Traumatic cataract is common most cause of blindness, second most common cause of unilateral, partial or total loss of vision in all age groups. In United States, 6.8/1000 population experienced an injury of eye, which requires treatment[1]. From 1992 to 2001 the overall rate of injury of eye was ranged from 8-13 per thousand population[2].

Traumatic cataract can be caused bypenetrating trauma or blunt trauma andboys found with higher prevalent rate. In literature, many studies reported that early cataract extraction with IOL implantation in traumatic cataract results in good vision[3,4]. Different treatment modalities can be used for intraocular lens implantation according to the type of cataract and extent of injury for example capsular bag intraocular lens implantation, anterior chamber lens implantation and scleral fixation however ciliary sulcus fixation is very safe if the posterior capsule is compromised but zonular support is maintained[5].

Final visual outcome is found to vary according to morphology of the cataract[6]. White soft cataracts have a better prognosis and achieve significantly higher rates of positive outcome compared with other morphologies. A significant difference is found if final visual outcome is compared before and after treatment. A significant relationship exists between age and final visual outcome.

Cataract resulting from ocular blunt trauma is very common among patients presenting to our hospital.Most of these patients are young males who are active members of the society and need a better visual status in order to earn their livelihood or pursuetheir professional/educational demands .Thecataract surgery with intraocular lens implantation in such patient is usually fruitful in terms of gain in visual acuity.The aim of the present study is therefore to find the frequency of visual improvements after traumatic cataract extraction in our population.

MATERIAL AND METHODS

This was conducted at Department of Ophthalmology DHQ Hospital Sahiwal from November 2014 to May 2015. Total 100 patients having history of ocular blunt trauma and traumatic cataract of at least 3 months duration as assessed through slit lamp biomicroscopy, both male and female having age range from 15-30 years were included in the study. Patients having posterior segment trauma of retina or optic nerve (assessed through indirect Ophthalmoscopy and B. scan ultrasonography), patients having pre-operative corneal opacity due to trauma (slit lamp examination) and patients with hereditary retinal disorders like retinitis pigmentosa (indirect ophthalmoscopy) were excluded from the study. An approval was taken form review committee

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of institution and written informed consent was taken from every patient. Standard phacoemulsification was carried out and lens was implanted.

After 24 hours of surgery, the dressing was removed, eye was examined, and topical medications were started. After surgery, moxifloxacin eye drops along with topical corticosteroid at dose of 1hourly initially for 1week then 3 hourly thereafter, and a combination of a corticosteroid and antibiotic ointment at night, the dosage being rapidly reduced depending on the degree of postoperative inflammation over a period of 2 and half months.

The patients were re-examined after 1 week, 2, and 6 weeks to enable refractive correction. Visual acuity of all operated patients was tested by using Snellen's chart at every follow up. Final visual acuity was assessed at 6th week follow up and findings were entered in proforma along with demographic profile of the operated patients. All the data was analyzed by using SPSS version 18. Mean and SD was calculated for numerical data and frequencies was calculated for categorical data. Chi-square test was used to see the association of outcome variable with different variables and P-value of ≤ 5% was considered significant.

RESULTS

A total of 151 traumatic cataract patients were operated. The age ranged between 15 to 30 years with mean age 20.4±4.2 years. Ninety (59.6%) belonged to age group 15-20 years, 39(25.8%) cases belonged to age group 21-25 years and 22(14.6%) cases belonged to age group 26-30 years (Table 1). Out of 151 patients 101(66.9%) were male patients and 50(33.1%) were female patients (Table 2). Visual acuity was improved in 126(83%) patients (Fig. 1). As can be observed from Table 3, the improvement of visual acuity was seen in 57% of the male participants and 26% of the female participants. It is also observed that good visual acuity was not observed after cataract surgery in about 25(16.5%) patients. This is due to fact that these patients did not seek early consultation for their ocular problem by an Ophthalmologist and it was observed after surgery on retinal examination that most of these patients had posterior segment pathologies i.e., traumatic optic neuropathy in 5(3.3%) patients, traumatic macular hole in 2(1.3%) patients and macular scar in 3(1.9%) patients. In our study, posterior chamber intraocular lens was implanted in most of the patients (93%) and in only 7(5%) patients. Anterior chamber IOL was implanted and 7(4.6%) patients were left aphasic due to inadequate capsular support. This is another reason for failure to improve visual acuity in some patients after cataract surgery.

Table 1: Age distribution

Age in years	n	%age
15-20	90	59.6
21-25	39	25.8
26-30	22	14.6

Table 2: Gender distribution

Sex	n	%age
Male	101	66.9
Female	50	33.1

Fig. 1: Visual acuity improvement

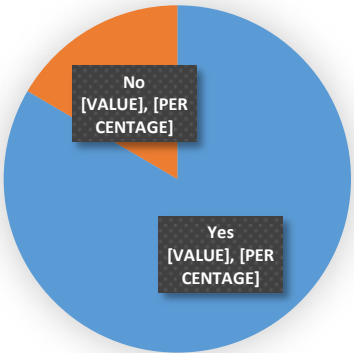

Table 3: Visual acuity improvement after traumatic cataract surgery

Good Visual acuity after surgery	Male	Female	Total
Yes	86 (56.95%)	40 (26.49%)	126 (83.44%)
No	15 (9.93%)	10 (6.62%)	25 (16.55%)
Total	101 (66.88%)	50 (33.11%)	151 (100%)

P value: 0.487

DISCUSSION

Cataract surgery is one of the most commonly performed refractive procedures. The main objective of this surgery, as stated in Academy of Ophthalmology's, *Preferred Practice Pattern for Cataract in the Adult Eye*[7], is to improve the functional vision and the quality of life of the patients. Currently, the only effective treatment of cataract is surgical removal with, in most cases, insertion of an intraocular lens to restore optical system of eye[8].

Ocular trauma most commonly occurs in children and in adults in productive age group, a finding which was also seen in the this study that 60% patients were with age 15-20 years. Thompson *et al*. observed that a majority of the ocular trauma in children occur at homedue to lack of adult supervision.

Another considerable point is that 101(66.9%) cases were males in my study showing that male patients are more likely to sustain an eye trauma

than female patients because they are more likely to be involved in hazardous sports and occupations[9].

In our study, such a high percentage of good visual outcome shows the importance of removal of cataract and early IOL implantation[10,11] which provides an everlasting solution to aphakia and results in a good visual prognosis. In blunt trauma and penetrating trauma cataract is most important and leading cause of decrease vision and our results shows that if we removed cataract patients can return their primary good vision[12,13,14,15,16].

CONCLUSION

Results of this study revealed that patients with traumatic cataract can have good visual outcome after cataract removal and IOL implantation, also depending upon management and complications. Young male patients are commonly affected as compare to female patients. Taking protective measures in sports and work and patient education can avoid ocular trauma and traumatic cataract formation.

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