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RESEARCH ARTICLE

A STUDY OF VISUAL OUTCOME OF CATARACT SURGERY IN CHILDREN

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ABSTRACT

Purpose: Childhood cataract is a debiliting condition with social burden. If it is not treated early and properly it may lead to permanent blindness due to amblyopia. Purpose of this study is to discuss results of early management of cataracts with etiologies like congenital, trauma in children.
Methods: Ten eyes in eight children with cataract were studied in detail at ophthalmology OPD. All children were operated by same surgeon under general anesthesia. Phacoemulsification with Intraocular lens implantation was done. Main tunnel was sutured by 10-0 viacryl. A weekly follow-up was maintained for a month and refraction was given at the end of month.
Result: Eight patients were in the age group of three years to twelve years with mean age of nine years. Seven were male while one was female. Five patients had blunt trauma, one had sealed penetrating injury by thorn and two had bilateral congenital cataract. Preoperative vision varied from PL+ PR+ to 6/24. Seven patients showed good post-operative visual recovery in the range 6/18 to 6/9. One patient of long standing congenital cataract did not improve after surgery due to severe amblyopia. Out of seven patients, one patient had developed choroidal detachment on day one, however he recovered gradually by wait and watch method, while another patient had developed posterior capsule opacification after three month, so he was treated by Nd YAG capsulotomy and subsequently regained 6/9 vision.
Conclusion: Children with cataract can have normal vision post cataract surgery if operated early with special care. If cataract is not operated early, then it might lead to blindness due to amblyopia.
Declaration of interest: No

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INTRODUCTION

Aim

To discuss results of early management of cataracts with etiologies like congenital, trauma in children in SKNMC&GH hospital, Pune, Maharashtra.

Objective

To study visual outcome of cataract surgery in children
Inclusion Criteria:

1. Children less than 16 years
2. Congenital or traumatic cataract
3. Operated by same surgeon

Exclusion criteria:

1. Children more than 16 years.
2. Ocular diseases other than cataract.

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MATERIALS AND METHODS

Ten eyes of eight children with cataract were studied in detail for visual prognosis over three months of duration at ophthalmology OPD. Ocular evaluations like - Visual acuity measurement, slit lamp examination, fundus examination, B scans, pachymetry, applanation tonometry, A scan, keratometry were performed. Laboratory investigations like Hb, Blood count, Urine routine and microscopy, HIV, HBSAg, Pre anaesthetic check up were performed. All patients were operated by same surgeon under general anaesthesia. Superior limbal incision was taken. CCC was done carefully. Foldable Hydrophobic Intraocular lenses were implanted in seven eyes. Nonfoldable rigid intraocular lenses were implanted in three eyes. Suturing of main tunnel and side port was done by 10-O viacryl suture. One patient required anterior vitrectomy due to posterior capsule rupture by trauma. Visual acuity was measured on day one. Postoperative patients started with steroid antibiotic drops in tapering doses. Homide eye drop given twice a day for one week. A weekly follow-up was maintained for a month and refraction was given at the end of month.

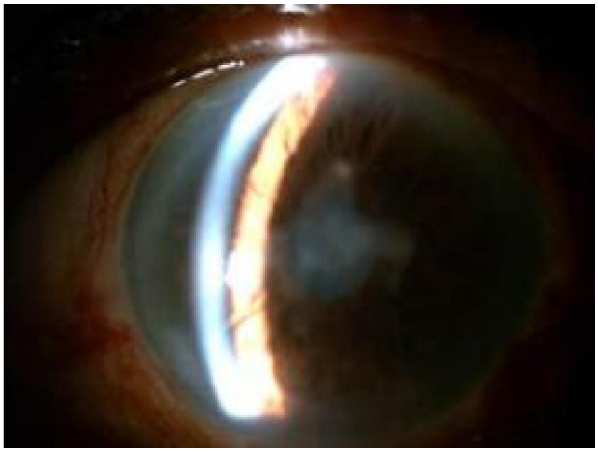


Fig. 1. Traumatic Cataract

Fig. 2. Traumatic cataract

Fig. 3. Traumatic Cataract

Fig. 4. Traumatic Cataract

Fig. 5. Post Operative Pseudophakia

Fig. 6. Congenital Cataract

RESULTS

Eight patients were in the age group of three years to twelve years with mean age of nine years. Seven were male while one was female. Five patients had blunt trauma, one had sealed penetrating injury by thorn and two had bilateral congenital cataract. Preoperative vision varied from PL+ PR+ to 6/24. Seven patients showed good post-operative visual recovery in the range 6/18 to 6/9. One patient of long standing congenital cataract did not improve after surgery due to severe amblyopia.

Out of seven patients who had good visual recovery, one patient had developed choroidal detachment on day one, however he recovered gradually by wait and watch method, while another patient had developed posterior capsule opacification after three month, so he was treated by Nd YAG capsulotomy and subsequently regained 6/9 vision.

DISCUSSION

Congenital cataract is a debiliting condition with social burden.

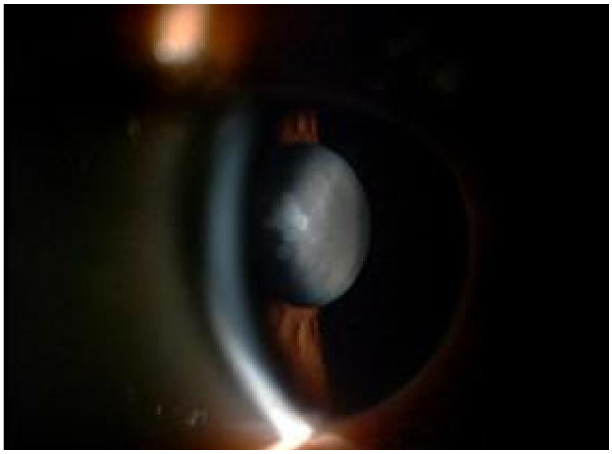


Fig. 7. Traumatic Cataract

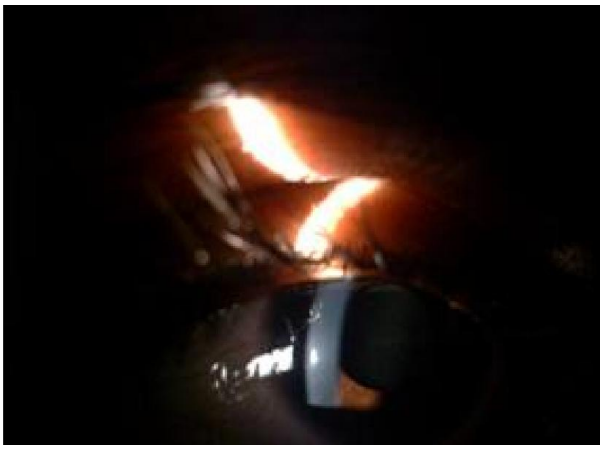


Fig. 8. Traumatic Cataract

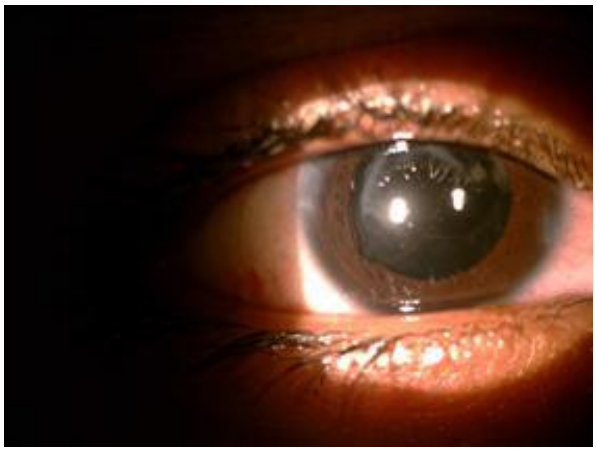


Fig. 9. Post Operative Pseudophakia

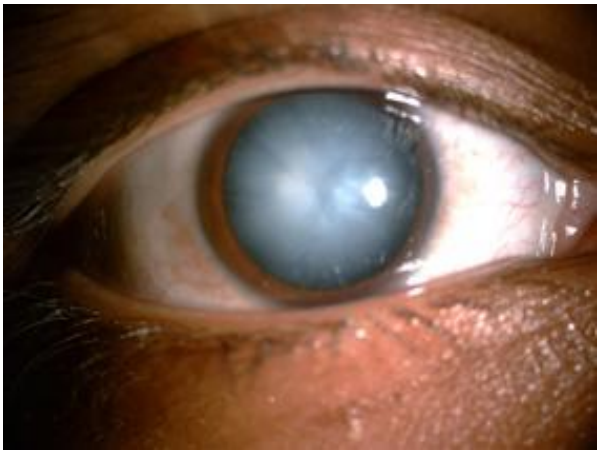


Fig. 10. Traumatic Cataract

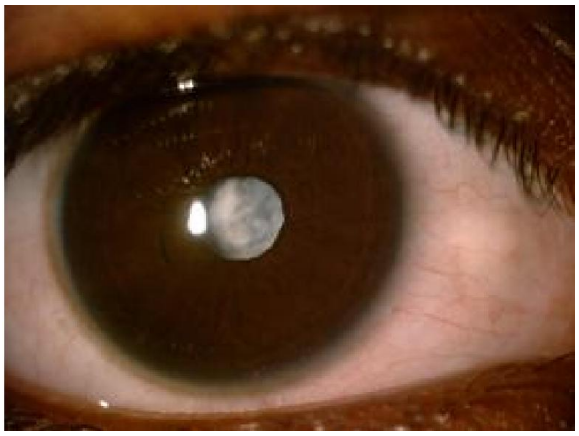


Fig. 11. Congenital Cataract

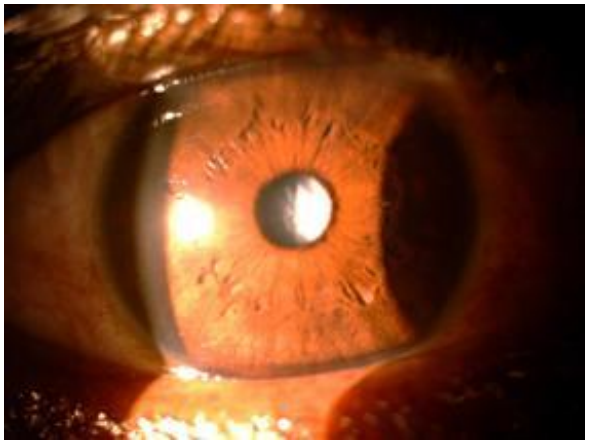
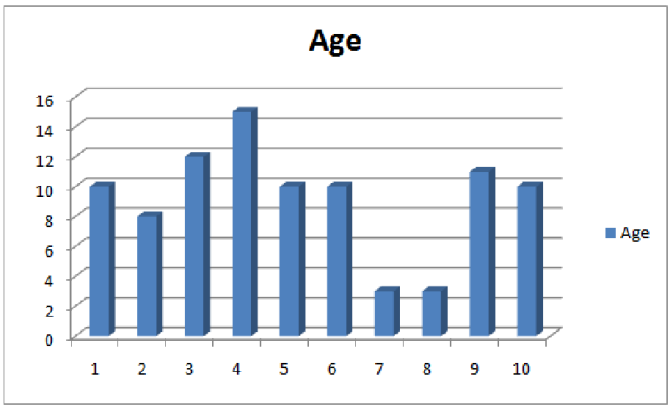
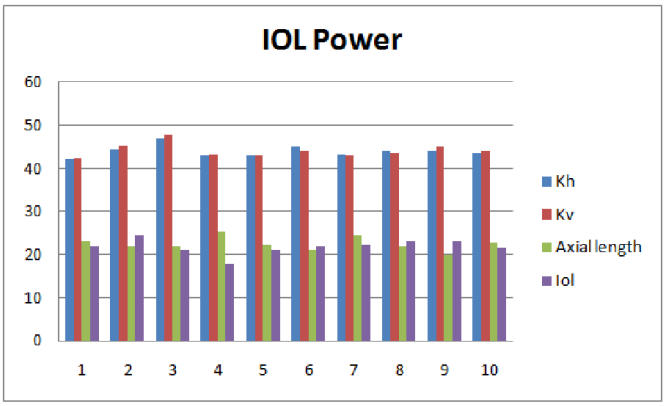


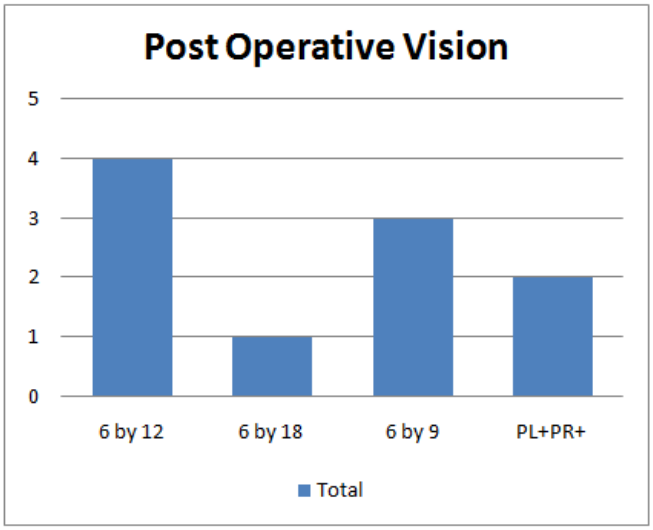
Fig. 12. Posterior Capsule Opacification

It is estimated that congenital cataracts are responsible for 5% to 20% of blindness in children worldwide. Incidence varies from country to country. One retrospective study of the prevalence of infantile cataracts in the U.S. showed a rate of 3-4 visually significant cataracts per 10,000 live births (Holmes *et al*., 2003). This is a similar rate to a U.K. study (Rahi and Dezateux, 2001) which showed 3.18 per 10,000. Cataract is responsible for about 10% blindness among children in India (Johar *et al*., 2004).

Causes of childhood cataract are congenital, traumatic. Congenital cataract occurs due to maternal Rubella infection. Early cataract evaluation and surgery in children has good prognosis. Late Cataract surgery in congenital cataract after 8 years has poor prognosis due to amblyopia. Poor visual acuity following surgery for congenital cataract may depend upon the simultaneous presence of congenital amblyopia (Leinfelder, 1962). Every child of cataract should be operated early for good prognosis.







The age range from 4 to 65 years was seen and most of the cases belonged to age group of 10 to 40 years. Thus, younger age group was more commonly affected. Proportion of males was very high i.e. 77.42% as compared to 22.58% females. Penetrating Injury was more common with 42 out of 62 cases. (67.7%). Agricultural accidents were the commonest cause of injury contributing 25 cases out of 62 cases (40.32%) and wooden stick was the most common agent causing ocular trauma leading to cataract (Rajiv Mundada *et al*., 2014). Traumatic cataract formation is commonly observed as a result of direct penetration of the crystalline lens by a foreign object or by blunt trauma to the globe or adnexa, creating a "shock wave" within the eye. Partial or total damage to the zonules may also occur, resulting in subluxation or total displacement of the crystalline lens. The primary care doctor of optometry plays an important role in evaluating patients with cataract, both immediately and long after the injury has occurred. Many of these patients can be managed conservatively by careful observation, while others will require surgical intervention (Ajamian, 1993). Even in developing country rural setting, satisfactory visual outcome is possible on long-term for children with traumatic cataract.

Complication may include choroidal detachment or wound leak. Satisfactory visual acuity following cataract surgery was associated with eyes having open globe injuries and managed using a primary posterior capsulectomy and vitrectomy as the primary procedure (Parikshit Gogate *et al*., 2012). Patients with traumatic cataract can have an optional or best possible visual outcome depending upon management and complications (Srivastava *et al*., 2014). Lesueur L said that regained binocular vision and absence of amblyopia depend on the quality of previous visual experience and absence of post-operative strabismus. Implantation appears beneficial for final visual results (Lesueur *et al*., 1995). Staffieri SE etal said in a paediatric population, cataract formation as a result of trauma requiring lensectomy is not uncommon. Males are more likely to suffer from such injury. A variety of sharp and blunt objects are the primary mechanism by which the injury is sustained with variable visual outcomes (Staffieri *et al*., 2010).

Declaration of interest: No.

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