



## A study of Early Surgical intervention for childhood cataract.

### KEYWORDS

Cataract, amblyopia, Phacoemulsification

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#### ABSTRACT

A study of early surgical intervention for childhood cataract.

Purpose: Early surgical intervention is must for all childhood cataract.

Methods: Nineteen eyes in fifteen children with cataract were studied in detail. All children were operated by same surgeon under general anesthesia. Phacoemulsification with Intraocular lens implantation was done.

Result: Fifteen patients were in the age group of three years to twelve years with mean age of nine years. Eight patients had blunt trauma, two had sealed penetrating injury by thorn and four had bilateral congenital cataract. Fourteen 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

Conclusion: If cataract is not operated early, then it might lead to blindness due to amblyopia.

Declaration of interest: No

#### Introduction:

**Aim:** To discuss the results of early surgical intervention of childhood cataracts with at SKNMC&GH hospital, Pune, Maharashtra.

**Objective:** A study of Early Surgical intervention for childhood cataract'

#### Inclusion Criteria:

1. Children less than 16 years
2. Congenital or traumatic cataract

#### Exclusion criteria:

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

#### Materials and Methods:

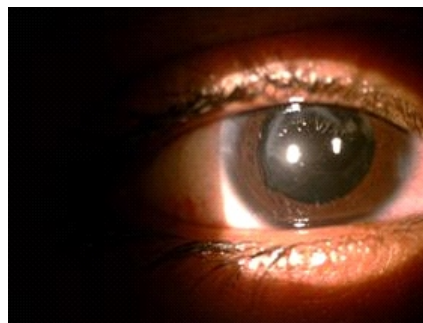
Nineteen eyes of fifteen children with cataract were studied in detail for visual prognosis over three months of duration at ophthalmology OPD. Ocular evaluations like - Visual acuity measurement, slit lamp examination, fundus examination, B scans, pachymetry, applanation tonometry, A scan, keratometry 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 sixteen eyes. Nonfoldable rigid intraocular lenses were implanted in three eyes. Suturing of main tunnel and side port was done by 10-0 viacryl suture. One patient required anterior vitrectomy due to posterior capsule rupture by trauma. One patient had intraoperative posterior capsule rupture. 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.

**Result:** Fifteen patients were in the age group of three years to twelve years with mean age of nine years. Thirteen were males while two were females. Eight patients had blunt trauma, one had sealed penetrating injury by thorn, two had penetrating injury with intact posterior capsule and four had bilateral congenital cataract. Preoperative vision varied from PL+ PR+ to 6/24. Fourteen 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. One patient had Posterior capsule rupture during surgery, he had optic capture of lens developed 2 weeks postoperative period with 6/9 vision.

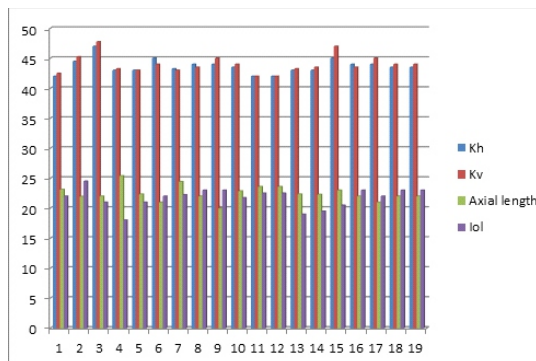


**Traumatic cataract**



**Postop Pseudophakia**

**IOL power:**



**Discussion:**

Congenital cataract is a debilitating condition with social burden. 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<sup>1</sup>. This is a similar rate to a U.K. study<sup>2</sup> which showed 3.18 per 10,000. Cataract is responsible for about 10% blindness among children in India<sup>3</sup>. 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<sup>4</sup>. 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<sup>5</sup>.

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<sup>6</sup>. 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<sup>7</sup>. Patients with traumatic cataract can have an optional or best possible visual outcome depending upon management and complications<sup>8</sup>. 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<sup>10</sup>. Staffieri SE et al 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<sup>11</sup>.

Early diagnosis and prompt surgical intervention is critical to prevent irreversible amblyopia. Thorough ocular evaluation, including the onset, duration, and morphology of a cataract, is essential to determine the timing for surgical intervention<sup>12</sup>.

**Declaration of interest: No.****Copyright:**

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**References:**

1. Holmes JM, Leske DA, Burke JP and Hodge DO. 2003 Birth prevalence of visually

- significant infantile cataract in a defined U.S. population. *Ophthalmic Epidemiol* 2003 Apr;10:67-74.
2. Rahi JS, Dezateux C: 2001 British Congenital Cataract Interest Group. Measuring and interpreting the incidence of congenital ocular anomalies: lessons from a national study of congenital cataract in the UK. *Invest Ophthalmol Vis Sci* 2001 June;42:1444-8.
3. Johar SR1, Savalia NK, Vasavada AR, Gupta PD, 2004 Epidemiology based etiological study of pediatric cataract in western India. *Indian J Med Sci.* 2004 Mar;58(3):115-21.
4. P. J. Leinfelder ,1962 Amblyopia associated with congenital cataract, *Trans Am Ophthalmol Soc.* 1962; 60: 236-242. PMID: PMC13164901. Holmes JM, Leske DA, Burke JP and Hodge DO. Birth prevalence of visually significant infantile cataract in a defined U.S. population. *Ophthalmic Epidemiol* 2003 Apr;10:67-74.
5. Rajiv Mundada, Swati Shinde, Minhaj S, Pathan Khaled, M Badaam, 2014 Traumatic Cataract Epidemiology at Tertiary Care Hospital in Aurangabad Maharashtra India: An Observational Study *International Journal of Recent Trends in Science And Technology*, ISSN 2277-2812 E-ISSN 2249-8109, Volume 9, Issue 3, 2014 pp 403-405 Copyright © 2014, Statperson Publications, *International Journal of Recent Trends in Science And Technology*, ISSN 2277-2812 E-ISSN 2249-8109, Volume 9, Issue 3 2014.
6. Ajamian PC, Traumatic Cataract. *Optom Clin.* 1993;3(2):49-56.
7. Parikshit Gogate al, 2012 causes, epidemiology, and long-term outcome of traumatic cataracts in children in rural India, *Indian J Ophthalmol.* 2012 Sep-Oct; 60(5): 481-486. doi: 10.4103/0301-4738.100557 PMID: PMC3491280
8. Dr(Prof) U. Srivastava, Dr. Regina Lalramhluni, Dr. Preeti Rawat, Dr(prof) V. Bhaishare, 2014 clinical evaluation of posttraumatic cataract in tertiary care hospital *International Journal of Scientific and Research Publications*, Volume 4, Issue 10, October 2014 I-ISSN 22503153 www.ijrsp.org
9. Mehul shah, Shreya Shah, Shashank shah, Vinay Prasad and Avadh Parikh, 2011 Visual recovery and predictors of visual prognosis after managing traumatic cataract in 555 patients, *Indian J Ophthalmol.* 2011 May-Jun; 59(3): 217-222. doi: 10.4103/0301-4738.81043 PMID: PMC3120243
10. Lesueur L, Thouvenin D, Arne JL. 1995 Visual and sensory results of surgical treatment of cataract in children. Apropos of 135 cases. *J Fr Ophtalmol.* 1995;18(11):667-77
11. Staffieri SE, Ruddle JB, Mackey DA. 2010 Rock, paper and scissors? Traumatic paediatric cataract in Victoria 1992-2006. *Clin Experiment Ophthalmol.* 2010 Apr; 38(3): 237-41. doi: 10.1111/j.1442-9071.2010.02236.x.
12. Anagha Medsinge and Ken K Nischal, Pediatric cataract: challenges and future directions *Clin Ophthalmol.* 2015; 9: 77-90. Published online 2015 Jan 7. doi: 10.2147/OPHT.S59009 PMID: PMC4293928