

Barrier Analysis And Outcome of Paediatric Cataract Surgery in Under Privileged Children of Assam

Dr Chengchira A Sangma¹, Dr Anshul Singh², Dr Harsha Bhattacharjee³

¹(Department Of Community Ophthalmology, Sri Sankaradevanethralaya, Guwahati, Assam, India)

²(Department Of Ophthalmology, Sri Sankaradevanethralaya, Guwahati, Assam, India)

³(Medical Director, Sri Sankaradevanethralaya, Guwahati, Assam, India)

Abstract :

Introduction: Paediatric blindness presents with problems of human morbidity, economic loss and social burden of which cataract accounts for 5-20 % of the cases.

Aim-The purpose of this study was to identify the barriers to effective treatment of childhood cataract in Assam in lower socio economic group and to determine the outcome of cataract IOL surgery in childhood cataract.

Method: School screening ,home visit and confirmation of diagnosis at secondary district eye care centre followed by a quantitative and qualitative research methodology which included questionnaires and analysis of hospital records respectively.

Results: Of 288 children operated for childhood cataract, % age distribution showed peak at 9 years of age. On barrier analysis it was found majority of the people dint know from where to take treatment and 97 % of them had economic problem.

Discussion: Time of surgery and treatment of amblyopia is extremely critical in paediatric cataract surgery for a successful outcome. The intervention could not restore good vision in majority of the cases because of the lack of detection and mostly due to economic barriers.

Conclusion: Barriers need to be addressed and universal health coverage given so that children get adequate treatment at the right time.

Keywords: Barrier analysis, childhood cataract, cataract surgery, intraocular lens, primary posterior capsulotomy.

I. Introduction

Cataract is a rare disease in children. But it is responsible for 5% to 20% of paediatric blindness worldwide. Global incidence of childhood cataract: 1-15/10,000 live birth [1] One of the common causes of paediatric blindness is paediatric cataract [2].

Paediatric blindness presents with enormous problem to the developing countries in terms of human morbidity, economic loss and social burden. (Wilson et al 2003) [3] Postoperative complications are a major concern. The risk of post-operative complications is high due to greater inflammatory response after paediatric intra ocular surgery [4]. Managing cataracts in children is a challenge as presentation is often delayed, diagnosis and assessment requires multitude of investigations, treatment is often difficult, and requires a dedicated team effort. [4] Moreover, delay in intervention causes lifelong visual impairment and long disability adjusted life year. (Bronard et al 2008) [6]

Advances in pediatric cataract surgery, instrumentation and technique have led to a significant decrease in complication rates. [10,11] In developing countries, the delayed time taken for treatment and limited resources result in a poor outcome in many cases. [13] A significant number of children remain blind because of deprivation amblyopia, surgical complications, and limited rehabilitation. [9,12]

So, to assure the best outcome for cataract blind children, appropriate paediatric surgical techniques need to be applied and children have to be monitored and managed by a team comprised of paediatric ophthalmologist, orthoptists, optometrists, skilled teachers, social workers and most importantly aware and patient parents. Normal Vision can be restored if intervention is done during sensory plasticity stage. (Borisovsky et al. 2013) [7].

II. Objectives Of The Study

a. To identify the barriers to effective treatment of childhood cataract in Assam among the underprivileged.

2.2 To determine the outcome of cataract IOL surgery in childhood cataract.

III. Materials And Methods

a. Study Design:

Identification of children by school / home visit screening and further confirmation of diagnosis at the Secondary Eye Care District Centers. Application of qualitative and quantitative research methodology .Study of hospital records for outcome analysis.

b. Duration of study: Study was done from April 2012 to April 2015.

c. Inclusion criteria: All parents and caregivers of the children who were operated for cataract in this period.

d. Exclusion criteria:

- Refusal to participate
- Lost to atleast 2 postoperative follow ups

e. Methods:

- Initial School Screening and home visits by trained SarbaSikshaAbhijan (SSA), Govt. of Assam workers.
- Confirmation of diagnosis by Ophthalmologist at district level.
- Escorting the children for cataract surgery at Tertiary eye care referral hospital,Guwahati,Assam was done by SarbaSikshaAbhijan (SSA) workers .
- Ocular Examination and physical check up for cataract surgery under Generalanaesthesia was done.
- Interview for barrier analysis at Tertiary eye care referral hospital,Guwahati, Assam was taken.
- Cataract surgery was performed.
- Postoperative follow up and door to door survey for assessment of quality of life.

f. Data Collection

- Pre designed ,tested and structured questionnaire conducted by a trained investigator.
- Hospital record was maintained.
- Written and Informed Consent was obtained .

g. Procedure performed

- Phacoaspiration with foldable intraocular lens under General Anaesthesia was done in 207 patients.
- Phacoaspiration with Primary Posterior Capsulotomy with limited anterior vitrectomy with foldable intraocular lens under General Anaesthesia was done in 81 patients.
- Bimanual technique using vitrectomy machine and single suture closure of the wound was done under under General Anaesthesia. Eye was patched and the patch was removed after 4 hours and topical steroid antibiotic eye drop were instilled.

IV. Results

Of 288 patients that were included in the study % distribution of cataract with age(1-18 years) shows that childhood cataract showed peak at age of 9 years followed by 13 years of age and least at 1,2,17 and 18 years of age. “Fig 1”

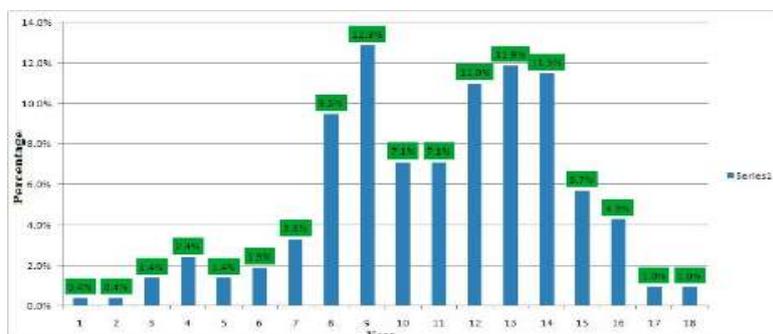


Figure 1. Age wise distribution of childhood cataract

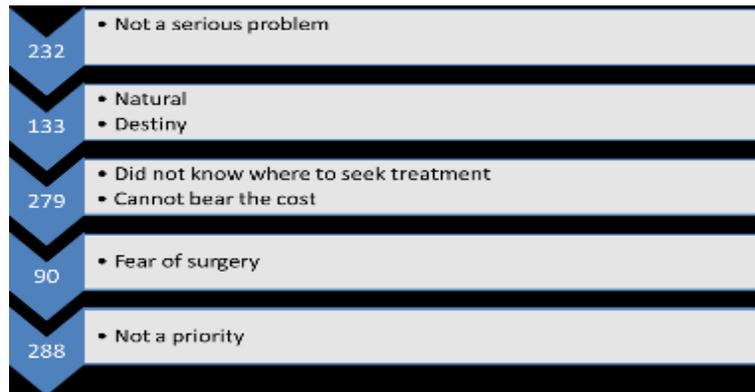


Figure 2. Personal interviews among 310 parents/caregivers

Then in a personal interview of 310 parents and caregivers of the children it was found that majority of the people thought it wasn't a priority for them, did not know from where to take treatment for the same and also they could not bear the cost for the treatment. About 75% of the people thought it was not a serious problem and rest few had fear of surgery and few thought it was natural process and destiny. Further we compared preoperative and postoperative visual status (vision) of the patients "Fig 3"

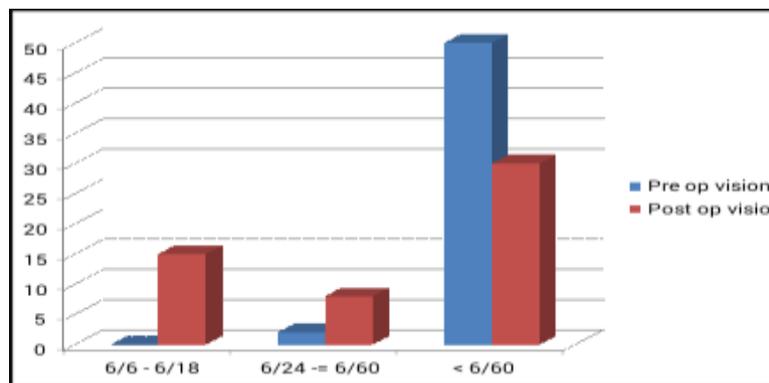


Figure 3. Visual Outcome

On comparison of pre and postoperative vision of the patients it was observed that 50% of the patients had vision improvement postoperatively while others had less vision due to various other causes related to anatomical ocular status like significant opacity in the visual axis, nystagmus, congenital and retinal pathology, esotropia and exotropia.

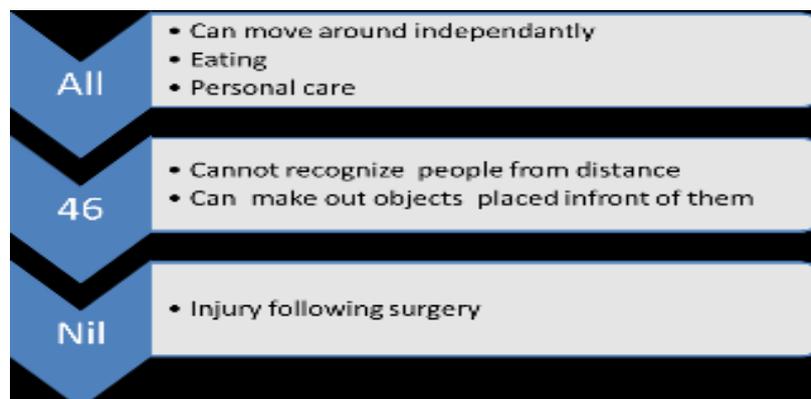


Figure 4. Functional Result and Post treatment quality of life improvement

Then after cataract surgery was done, in postoperative period quality of life assessment was done by Sarba Siksha Abhijan workers by door to door survey. It was found that all the children who underwent surgery

could move around, eat independently and take personal care too. Few could not recognize people from distance and none had injury following surgery “Fig 4”

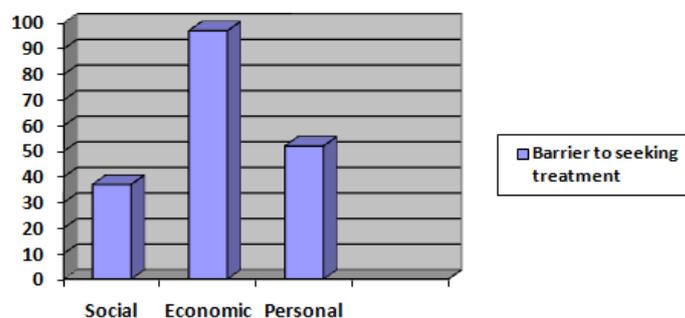


Figure 5 Barriers to seeking treatment

On interview we also found that 97 % of the people had difficulty in seeking treatment due to economic issues and 52 % of the people had personal problems and 37% of them had social problems. “Fig 5”

V. Discussion

Clear media, normal alignment, emmetropia and normal functioning Central nervous system and adequate environment are essential for development of vision. Visual stimulus should be proportionate and synchronous to the development of brain. Any deprivation of visual stimulus when macular function is developing can lead to permanent visual loss (Amblyopia). Time of surgery and treatment for amblyopia is extremely critical in paediatric cataract surgery for successful outcome. In all cases of the present series thorough state-of-the-art management was done, surgery performed and best Intraocular Lens was implanted with proper biometry.

Visual axis was persistently clear in Post Operative period in all cases. Visual result was not good in children suffering from nystagmus, esotropia and fixation problem, derivational amblyopia, congenital disorder and retinal pathology [9,12]. Most of the surgical intervention were carried out after the period of plasticity, because of late detection of the cases mainly due to economic barrier.

VI. Conclusion

A universal health coverage is necessary to address the childhood cataract blindness and disability. All barriers need to be addressed so that children can get adequate treatment and also extensive IEC activity is required.

Regular eye screening can detect visual impairment in children.

Early detection Early Treatment – is the only solution.

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