OUR EXPERIENCE OF IOL IMPLANTATION IN PAEDIATRIC AGE GROUP

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ABSTRACT

Forty eyes of 35 patients in paediatric age group suffering from congenital/traumatic cataracts were operated. Posterior chamber intra ocular lens (PC IOL) implantation was carried out and followed for four years. Twenty one eyes (52.5%) showed visual recovery of 6/18 or better. Forward thrust was the commonest per operative complication. Uveitis and pupillary distortion were the common post operative complications. PC IOL implantation appears to be safe and promising procedure.

MJAFI 1994; 50 : 31-33

KEY WORDS : Posterior chamber intraocular lens (PC IOL) - paediatric age; Post implantation wash; Congenital cataract

Introduction

Attitudes and practice related to IOLs have undergone dramatic changes in the last ten years. The use of IOLs as a routine part of surgical management of cataracts in adults has gained wide spread acceptance. However, IOLs in paediatric age group is still controversial and yet to gain universal acceptance.

Most ophthalmologists are still practising cataract removal followed by aphakic glasses or contact lenses despite their inherent disadvantages and poor compliance, especially in children. Binocular vision restoration remains difficult to achieve due to amblyopia and anisokonia. We have to resort to take a calculated surgical risk keeping in mind that the child has to grow and compete in this modern world for next 70 years or so. IOL implantation is a hope of brightness from despairs of gloom. We have carried out IOL implantation in 40 eyes in paediatric age group.

Material and methods

Forty eyes with cataract in 35 children were operated. IOL implantation was done and patients were followed up for four years. The patients were divided in following age groups.

Gp A - 6 months to 2 years

Gp B - 2 years to 5 years

Gp C - 5 years to 12 years

Gp D - Traumatic cataracts 4 to 12 years

Case Selection : Children less than 2 years of age where on dilatation we could not see macula and disc. Children more than 2 years of age having bilateral cataracts who could not recognise their parents or could not move around on their own, and of unilateral cataract who could fix light but in whom fundus details could not be seen. Children of more than 4 years, in whom the visual impairment was worse than 6/36.

All eyes were subjected to detailed systemic and ocular examination. Intraocular pressure, lens matter/vitreous in anterior chamber, pupillary shape etc. were recorded.

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All eyes were routinely subjected to ultrasonography for evaluation of posterior segment. Traumatic cases with retained intraocular foreign body, retinal detachment, corneal opacities in pupillary area and endothelial count less than 1000/mm² were excluded.

Operative Procedure and Post Operative Care : All the cases were operated under general anaesthesia. Fornix based conjunctival flap was made, anterior chamber was entered by stab incision. Anterior capsulotomy was performed with the small bent tip of a 27 gauge needle, carefully so as not to injure posterior capsule. Lens matter was removed by irrigation-aspiration with Simcoe's two-way cannula. In cases where there was forward push with collapse of anterior chamber, the section was enlarged with corneal scissors and PC IOL was implanted, subsequently the residual lens matter was removed by post-implantation wash with Simcoe's cannula.

In eyes with pre-existing small rents in posterior capsule, especially in traumatic cataracts, we implanted the lens after localised anterior vitrectomy. Primary posterior capsulotomy was done in all the cases in children below 5 years where posterior capsule was found to be thickened.

Post operatively all cases were put on ointment atropine 1%, topical steroid drops for two months and timolol 0.5% drops for one week.

Observations

Of the 40 eyes (35 patients), 23 (57.5%) had traumatic cataract and belonged to children over 4 years of age (Gp D). Light fixation was present in all the eyes except two which had nystagmus.

The commonest complication encountered during surgery was forward thrust in 21 eyes (52.5%), more so in age group of 6 months to 5 years (Gp A & B) where it was encountered in all the eyes. Pre-existing rent was commonest in traumatic cataracts (Table 1).

TABLE 1

Per-operative complications

Group	No of eyes	Hyphaema	Forward Thrust	Thick-Post capsule	Pre-existing Rent
Gp A	6	0	6	2	1
Gp B	5	0	5	2	0
Gp C	6	0	2	2	—
Gp D	23	4	8	4	4

Pupillary distortion and uveitis were the commonest post operative complications found in 17 eyes (42.5%) and 20 (50%) eyes respectively (Table 2).

TABLE 2

Post-operative complications

Group	No of eyes	Uveitis	Hyphaema	Pupillary Distortion
Gp A	6	3	—	2
Gp B	5	4	—	2
Gp C	6	2	—	1
Gp D	23	8	2	15

TABLE 3

Visual recovery

Groups	No. of eyes	2/60-6/60	6/60-6/24	6/18-6/12	6/9-6/6
Gp A	6	6	—	—	—
Gp B	5	—	1	4	—
Gp C	6	—	2	2	2
Gp D	23	2	8	5	8

All the 6 eyes belonging to age group 6 months to 2 years (GpA) could gain vision of 2/60 to 6/60 only. However, 21 eyes (61.6%) belonging to age group 2 years to 12 years and traumatic cataracts (Gp B, C&D) had visual recovery of 6/18 or better (Table 3). An element of amblyopia of varying degree was found in 25 eyes (62.5%), post operatively.

Discussion

IOL implantation in paediatric age group is fraught with problems due to difficulties in implantation, lens power calculation, amblyopia, post operative severe fibrinous

reaction and, apprehension of decentration/biodegradation of lens [1]. Primary posterior capsulotomy, power of lens which should be implanted, age at which surgery should be performed, and visual rehabilitation of the child are still controversial.

In this series we implanted PC IOL of +25D or +26D power so as to achieve slight hypermetropia during early school going age and 2 or 3D myopia at adolescence.

The most commonly encountered perioperative complication was forward thrust with collapse of anterior chamber, which was there in all the cases of children below 5 years of age. In these cases the IOLs were implanted before irrigation so as to counter the forward thrust and avoid inadvertent injury to posterior capsule during irrigation-aspiration. The residual lens matter was removed by post-implantation wash. Thick posterior capsule was found in 10 eyes (25%). Out of these 6 belonged to the children under 5 years of age and in these primary posterior capsulotomy was performed so as to avoid another intraocular intervention since it is difficult to perform YAG Laser capsulotomies in young children [2].

Post-operative pupillary distortion was the commonest complication in traumatic group involving 15 eyes (65.2%) out of 23 eyes. This was expected since these eyes had suffered from trauma and accompanying inflammation leading to posterior synechia and iris injuries [3]. The uveitis was another common post operative complication which could be controlled with steroid drops and atropine

ointment. In no case systemic steroids were used [4]. We did not encounter decentering of IOL in any of our patients.

Amblyopia is the most important hazard of cataract in children, especially in congenital cataracts. Research of various workers has shown that irreversible anatomical changes occur in the lateral geniculate body as a result of deprivation amblyopia [5]. Children with amblyopia (25 eyes, 62.5%) were put on occlusion therapy with variable compliance and/or orthoptic treatment. The visual recovery in children belonging to age group 6 months to 2 years had been only 2/60 to 6/60. The present day thinking is that these young children with dense cataracts should be operated in early infancy. Visual recovery has been encouraging, 6/18 or better, in 21 eyes (61.7%) in children older than 2 years and in those with traumatic cataracts.

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